# JOINT FLEET MAINTENANCE MANUAL

## FOREWORD

LISTING OF APPENDICES.

A Master Locator Guide
B Master List of References
C Responsibilities

1 MANUAL DEVELOPMENT. The development of the Joint Fleet Maintenance Manual has been a dedicated effort by all Naval Type Commanders to establish a single, unified source of maintenance requirements across all platforms.

2 VOLUME TOPICS. The Joint Fleet Maintenance Manual is made up of seven distinct volumes.

| | | |
|---|---|---|
| Volume I | - | New Construction |
| Volume II | - | Integrated Fleet Maintenance |
| Volume III | - | Deployed Maintenance |
| Volume IV | - | Tests and Inspections |
| Volume V | - | Quality Maintenance |
| Volume VI | - | Maintenance Programs |
| Volume VII | - | Contracted Ship Maintenance |

3 PURPOSE. This manual serves as:

a. A standardized, basic set of minimum requirements to be used by all Type Commanders and subordinate commands.

b. Clear, concise technical instructions to ensure maintenance is planned, executed, completed and documented within all Fleet commands.

c. A vehicle for implementing Regional Maintenance policies across all platforms.

d. A comprehensive set of process descriptions for use by schools such as Surface Warfare Officer School (SWOS), Senior Officer Ship Maintenance and Repair Course (SOSMRC), Engineering Duty (ED), Technical Training, etc.

4 CANCELLATION. The Joint Fleet Maintenance Manual supersedes all existing Type Commander Maintenance and Quality Assurance manuals and all associated correspondence and clarifications thereto, except COMSUBLANTINST 4355.4 (Weapons Systems Quality Assurance Manual). The following is a list of manuals that are cancelled as a result of this manual:

a. COMNAVAIRLANTINST 4700.1/COMNAVAIRPACINST 4700.1 (Naval Air Force Ship Material Manual)
b. COMNAVSURFLANTINST 9000.1 (Naval Surface Force, U.S. Atlantic Fleet, Maintenance Manual)
c. COMNAVSURFPACINST 4700.1 (Naval Surface Force, U.S. Pacific Fleet, Maintenance Manual)
d. COMSUBLANT/COMSUBPACINST 4790.4 (Submarine Force Maintenance Manual)

e. COMNAVAIRLANTINST 9090.1/COMNAVAIRPACINST 9090.1 (Naval Air Force Quality Assurance Manual)
f. COMSUBLANT/COMSUBPACINST 4855.2 (Submarine Force Quality Assurance Manual)
g. COMNAVSURFLANT/COMNAVAIRLANTINST 4855.3/COMNAVSURFPAC/ COMNAVAIRPACINST 4855.3 (Nuclear Surface Forces Afloat Quality Assurance Instruction)
h. COMNAVSURFPACINST 4855.1 (Naval Surface Force, U.S. Pacific Fleet, Quality Assurance Manual)
i. COMNAVSURFLANTINST 9090.1/COMNAVSURFPACINST 4855.22 (Naval Surface Force Quality Assurance Manual)
j. COMNAVSURFLANTINST 9090.2 (IMA Quality Assurance Manual)
k. CINCLANTFLT/CINCPACFLTINST 4355.1 (Quality Assurance Program)
l. COMSUBPACINST 4855.3 (Deep Submergence Systems Quality Assurance Manual)

5 DISCUSSION.

5.1 Platform Considerations. Throughout this manual, certain requirements apply only to specific platforms. To point these out, the terms (Submarines only), (Aircraft Carriers only), (Surface Ships only), and specific hull designators (e.g., DDG, SSN) are used in parentheses within the paragraph to which they apply. The term "Surface Ship" applies to all ships and craft except submarines and deep submersibles. When no specific platform is mentioned, the requirements apply to all platforms. In this context, the term "Submarine Force" applies to all ships under the responsibility of Submarine Forces, Atlantic and Pacific Fleets; the term "Aircraft Carriers" applies to all ships under the responsibility of Naval Air Forces, Atlantic and Pacific Fleets; and the term "Surface Force" applies to all ships under the responsibility of Naval Surface Forces, Atlantic and Pacific Fleets.

5.2 Maintenance Considerations. In the development of this manual, considerable effort was put forth to standardize work practices, incorporate accepted Regional Maintenance philosophies, and make allowances for future changes resulting from new Regional Maintenance policies. With respect to this, the term Intermediate Maintenance Activity (IMA) has been replaced by Fleet Maintenance Activity (FMA) to reflect the fact that under Regional Maintenance the responsibility for, and the management of, repair facilities has moved to the Fleet.

5.3 Terminology Considerations. Use of the term "Type Commander/Immediate Superior in Command (TYCOM/ISIC)" throughout this manual is defined as follows:

a. For Submarine and Surface Forces, the "TYCOM/ISIC" refers to the Squadron or Group.

b. For Aircraft Carriers, the "TYCOM/ISIC" refers to the Type Commander for maintenance issues.

c. For Submarine and Surface Forces, the term "ISIC", used by itself, refers to the Squadron or Group. The term "ISIC" does not apply to Aircraft Carriers for maintenance issues, but refers to the Permanent Battle Group Commander for operational issues and non-maintenance certifications.

5.4 Administrative Considerations.

5.4.1 Master Locator Guide. Due to the size of this manual, a Master Locator Guide has been developed and is contained in Appendix A of this foreword. The purpose of this Guide is to give users of this manual a complete listing of all the volumes and their major subject matter. This will aid users in locating specific areas within the manual.

5.4.2 Master List of References. Appendix B of this foreword is a Master List of References used throughout the manual. This Master List should be reviewed to ensure that the necessary technical manuals, instructions, etc. are readily available prior to using the manual.

5.4.3 Table of Responsibilities. Appendix C provides a table of responsibilities associated with specific positions/functions located within the manual. Each position listed identifies the major responsibilities for that position and provides a link to the Chapter/paragraph where the responsibility is detailed.

5.4.4 Acronyms. Acronyms used in a particular volume are contained in the List of Acronyms at the front of each volume. Acronyms appearing four or more times in a chapter or those considered "common acronyms" (i.e., words that are known better by their acronym than by their spelled out word, for example, CD-ROM) will be spelled out the first time an acronym is used within a chapter, and the acronym listed in parentheses after the word. Terms not meeting these conditions will not be considered as acronyms within the text and the words will be spelled out.

5.4.5 Appendices. Numerous chapters throughout this manual contain Appendices for the purpose of providing further detail or examples of required reports/correspondence. In all cases the Appendices are intended as examples only and may not reflect the most current guidance or format. Higher authority source documents should be consulted. Sample correspondence provided as Naval messages may be communicated in letter format to facilitate timely transmission by electronic facsimile.

5.4.6 Volume Structure. Volumes II and V of this manual have been divided into specific parts. Volume II is made up of two parts. Part I contains requirements to implement and execute the management of an integrated maintenance process for all Navy ships, except those under the control of Commander, Naval Surface Force, throughout their life cycle. Part II is SHIPMAIN specific and defines a common planning process for ship maintenance and alterations for Commander, Naval Surface Force controlled ships. Volume V is made up of three parts. Part I contains requirements and procedures necessary to establish and maintain a Quality Maintenance Program. Part II contains information which has been extracted from Part I and is considered Naval Nuclear Propulsion Information. The distribution of Part II has been limited. Part III contains requirements which apply to Scope of Certification for all ships and Deep Submergence Systems in the fleet.

6 CHANGES TO THE MANUAL. A formal change process has been established for all six volumes of the manual and is described in Figure 1. Users of this manual are encouraged to submit change requests. All change requests must be submitted using the Change Request Form contained in each volume. If changes are submitted in electronic format, facsimile or E-mail, each change request shall contain the information required on the Change Request Form. Your participation in this change process is both important and appreciated.

7 LIFE CYCLE MAINTENANCE PROCESS FOR THE JOINT FLEET MAINTENANCE MANUAL.

7.1 Purpose. To establish a management plan for life cycle maintenance of the Joint Fleet Maintenance Manual (JFMM). This plan describes the change process requirements and identifies the related responsibilities and requirements for maintaining all volumes of the JFMM.

7.2 Background. This manual was developed with the objective of providing a standard set of clear and concise maintenance requirements for the Fleet. The establishment of a formal life cycle maintenance process is necessary to ensure successful accomplishment of this objective. Utilizing a formal process will ensure effective coordination and management of the JFMM and will ensure:

a. Standardized format for all change request responses.

b. Timely evaluation and incorporation of change request.

c. Automated tracking system for all review comments.

d. Consistent distribution of all changes to the manual.

e. A historical database containing all background information that led to changes and revisions to the JFMM.

7.3 Responsibilities and Requirements. This section defines the responsibilities and requirements of all activities involved in supporting the life cycle maintenance process of the JFMM.

7.3.1 Fleet Commanders. The Fleet Commanders are responsible for the following:

a. Designating a single Commander, Atlantic Fleet (COMLANTFLT) and Commander, Pacific Fleet (COMPACFLT) point of contact to act as JFMM coordinators.

b. Establishing a Joint Fleet Maintenance Manual Board of Directors (JFMMBOD). The JFMMBOD will be co-chaired by the Fleet coordinators and made up of TYCOM Quality Assurance and Maintenance representatives and the SUBMEPP JFMM Program Manager.

c. Providing final approval and promulgation letter for all JFMM changes and revisions issued to the Fleet.

d. Providing funding for the life cycle maintenance of the JFMM.

e. Approving all Advanced Change Notices (ACN), either by message or letter, for urgent changes to the JFMM. Develop and distribute all message ACNs. Forward all ACNs approved via letter to Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) for distribution.

f. Convening periodic JFMMBOD review meetings. The purpose of these meetings is to review all proposed changes that may be incorporated into the manual in preparation of issuing an official change or revision to the manual. Attendance is generally limited to the Fleet Commanders and TYCOMs (Quality Assurance Officer and maintenance representatives as required). The Fleet or TYCOM representatives may invite Subject Matter Experts (SME) to assist in answering proposed changes. The following rules apply for SMEs:

(1) All SMEs must have an advocate. The advocate will be one of the voting members from the TYCOMs, Fleet Forces Command (FFC) or COMPACFLT. The TYCOM advocate is responsible to get FFC concurrence for the SME to attend the JFMM Board of Directors Meeting. FFC and COMPACFLT will determine if other voting members shall be polled and notify SUBMEPP of the result. The advocate is responsible to ensure the SME complies with the established norms of the meeting.

(2) Access to the JFMM Electronic Change Website is generally limited to the Fleet Commanders and the TYCOMs. **When necessary, an SME will normally be sent a proposed change for comment concurrent with TYCOM review, by email, outside of the electronic change website.** At the request of a TYCOM, an SME with a "creditable need to know" as determined by FFC and COMPACFLT may be granted limited access. Access is associated with individuals, not organizations or positions within organizations. Normally access will not be granted to individuals at commands subordinate to TYCOMs.

7.3.2 Type Commander. The Type Commander (TYCOM) will:

a. Review and evaluate all JFMM change requests within 21 calendar days of receipt of the change, in order to provide users with timely responses.

b. For changes which affect ship and personnel safety, notify Fleet Commanders and request a message ACN be distributed.

c. For all other changes requiring ACNs, TYCOMs will review the ACN and forward to Fleet Commanders for approval.

d. Review and endorse all change packages in preparation of issuing an official change/revision to the manual. Notify the Fleet Commanders of this endorsement via letter.

e. Designate representatives to be members of the JFMMBOD.

f. Identify changes to the JFMM distribution list.

7.3.3 Joint Fleet Maintenance Manual Board of Directors. The JFMMBOD will:

a. Adjudicate all JFMM change requests not unanimously resolved by TYCOMs.

b. Continue collaboration to standardize maintenance requirements across platforms.

c. Determine the frequency of official changes/revisions to the JFMM. The frequency of these changes/revisions may be dictated by the number of JFMM change requests submitted and approved.

7.3.4 Submarine Maintenance Engineering, Planning and Procurement. SUBMEPP will:

a. Issue a letter of acknowledgment to the submitting activity within seven calendar days of receiving the change request and a response letter within seven calendar days of receiving all TYCOMs response.

b. Perform a preliminary review of all JFMM change requests including an assessment of the impact on other volumes and provide background information and additional recommendations, when necessary, to applicable TYCOMs within seven calendar days of receiving change request.

c. Manage an automated tracking system for all JFMM change requests and provide a periodic status report of changes to the TYCOMs and Fleet Commanders.

d. Incorporate approved changes into the JFMM and forward all change packages, via the TYCOM, to the JFMMBOD for review in preparation of issuing an official change/revision to the manual.

e. Develop all ACNs not requiring a message and forward to TYCOM for review. Distribute all ACNs approved by Fleet Commanders via letter.

f. Forward any unresolved change requests to the JFMMBOD for adjudication.

g. Maintain the JFMM distribution list.

h. Support the TYCOM in the performance of customer surveys and audits, as requested.

i. Adjudicate all editorial change requests on behalf of the JFMMBOD.

j. Identify yearly budget requirements for life cycle maintenance of the JFMM to the Fleet Commanders.

k. Attend all JFMMBOD Review Meetings.

l. Coordinate the development and transition of the JFMM into CD-ROM format.

7.3.5 Systems Command. The Systems Command (SYSCOM) will:

a. Provide technical assistance for change requests when requested.

b. Review JFMM revisions when requested.

7.3.6 User Activities. User Activities will:

a. Submit change requests to SUBMEPP, using the required change request form contained in the manual.

b. Provide the following information on the change request form.

(1) A clear description of the problem including Volume number, applicable paragraph(s) and page(s).

(2) The recommended change containing the specific words to be added, deleted or modified.

(3) Rationale for the recommended change.

7.4 Change Process. This section defines the change process for the JFMM. The change process is an integral part of JFMM life cycle maintenance. The process is described in detail below and relates to the flow chart shown in Figure 1.

a. All User Activities (e.g., FMAs, Squadrons, Ships Force...etc.), will submit JFMM change requests using the change request form located in the front of each volume of the manual.

b. Upon receipt of this change request, SUBMEPP will send a letter to the submitting activity notifying them that the change request has been received. SUBMEPP will log the change request into a database and conduct a preliminary review, assess the impact of the change on other volumes of the JFMM, gather all appropriate background information and provide additional recommendations when necessary. SUBMEPP will adjudicate all editorial change requests. For non-editorial change requests, SUBMEPP will determine the applicable TYCOM(s), and forward the requests to them for their review and approval. All change requests sent to TYCOMs after SUBMEPP review will include the following:

(1) Change Request Response Form.

(2) Appropriate reference material (e.g., previous change requests, applicable instructions...etc.).

(3) Applicable marked up pages showing the requested change incorporated.

(4) SUBMEPP's preliminary evaluation and recommendation, when applicable.

c. TYCOMs will review the change request and provide a resolution to SUBMEPP via letter or fax using the Change Response Form. SYSCOMs will provide technical assistance when requested. If the TYCOM should approve a change request and desire the use of an ACN, they will indicate this on the Change Response Form and provide any additional information for the ACN. For changes which affect ship and personnel safety, TYCOMs will notify Fleet Commanders when a message ACN is required. Fleet Commanders will develop and distribute all message ACNs. For all other ACNs, SUBMEPP will develop the ACN and submit the ACN to the TYCOMs for review. TYCOMs will forward the ACN to the Fleet Commanders for approval. Upon approval, SUBMEPP will distribute the ACN.

d. SUBMEPP will forward all unresolved change requests to the JFMMBOD. An unresolved change request is a change request that does not receive unanimous approval or disapproval from all applicable TYCOMs.

e. The JFMMBOD will adjudicate all unresolved change requests and will forward the resolution to SUBMEPP.

f. SUBMEPP will provide a formal response to the submitting activity based upon the TYCOM(s) or JFMMBOD final resolution.

g. SUBMEPP will incorporate the approved change into a JFMM change package. This change package will contain both approved changes and ACNs incorporated into the applicable pages of the manual and will be sent to the JFMMBOD, via the TYCOMs, for review in preparation of an official change/revision to the manual.

h. The JFMMBOD will endorse this change package and forward it to the Fleet Commanders requesting approval and promulgation.

i. Fleet Commanders will provide final approval and promulgation letter for all JFMM changes and revisions. Fleet Commanders will forward promulgation letter to SUBMEPP.

j. SUBMEPP will provide distribution of the approved JFMM change or revision according to the approved distribution list.

# JOINT FLEET MAINTENANCE MANUAL CHANGE PROCESS

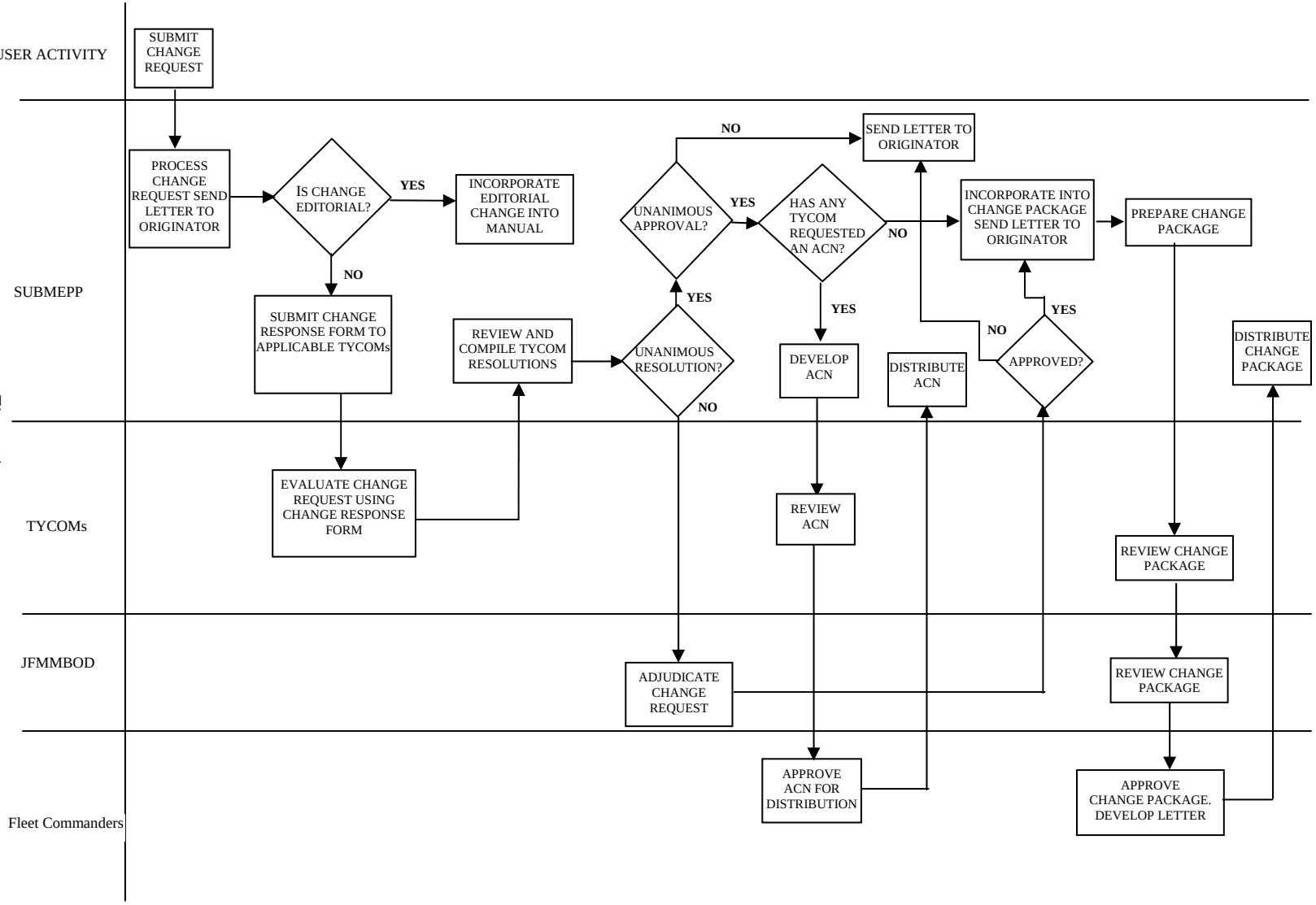



Figure 1.

# APPENDIX A

## MASTER LOCATOR GUIDE

FOREWORD
1 Manual Development
2 Volume Topics
3 Purpose
4 Cancellation
5 Discussion
5.1 Platform Considerations
5.2 Maintenance Considerations
5.3 Terminology Considerations
5.4 Administrative Considerations
6 Changes to the Manual
7 Life Cycle Maintenance Process for the Joint Fleet Maintenance Manual
7.1 Purpose
7.2 Background
7.3 Responsibilities and Requirements
7.4 Change Process

VOLUME I - NEW CONSTRUCTION

CHAPTER 1 INTRODUCTION
1.1 Purpose
1.2 Scope
1.3 Changes and Corrections
1.4 Request for Copies of the Manual

CHAPTER 2 POLICIES AND RESPONSIBILITIES
2.1 Ship Program Managers
2.2 Naval Sea Systems Command Nuclear Propulsion Directorate (Nuclear Powered Ships only)
2.3 Type Commander
2.4 Supervising Authority
2.5 Immediate Superior in Command
2.6 Building Yard
2.7 Design Yard/Planning Yard
2.8 Commanding Officer, Prospective Commanding Officer, Officer In Charge
2.9 Pre-Commissioning Unit
2.10 Support Activities
2.11 Naval Sea Systems Command (Submarines only)

CHAPTER 3 PRE DELIVERY
3.1 Purpose
3.2 Shipbuilder's Test Program
3.3 Inspections/Certifications/Assists
3.4 Maintenance and Material Management Program
3.5 Equipment Load Out
3.6 Logistic Support
3.7 Operational Control Transfer

CHAPTER 4 TRIALS
4.1 Purpose
4.2 Dock Trials
4.3 Fast Cruise
4.4 Sea Trials

CHAPTER 5 POST DELIVERY DEFICIENCIES
5.1 Purpose
5.2 Deficiency Correction
5.3 Required Reports
5.4 Combined Trials/Acceptance Trials
5.5 Guarantee Material Inspection/Final Contract Trials
5.6 Post Delivery Deficiency Items

CHAPTER 6 POST SHAKEDOWN AVAILABILITY
6.1 Purpose
6.2 Planning and Execution
6.3 Trials, Inspections and Crew Certification
6.4 Sea Trials
6.5 Deficiency Correction Period
6.6 Period Following Post Shakedown Availability

VOLUME II - INTEGRATED FLEET MAINTENANCE

PART I

CHAPTER 1 INTRODUCTION
1.1 Purpose
1.2 Scope
1.3 Changes and Corrections
1.4 Request for Copies of the Manual

CHAPTER 2 MAINTENANCE AND MODERNIZATION PROGRAM
2.1 Purpose
2.2 Maintenance Accomplishment Levels
2.3 Reliability Centered Maintenance
2.4 Condition Based Maintenance
2.5 System/Component Maintenance Programs (Submarines and Aircraft Carriers Only)
2.6 Modernization
2.7 Integrated Fleet Maintenance Management
2.8 Technical Assistance
2.9 Propulsion Plant Material Condition (Aircraft Carriers Only)

CHAPTER 3 CHIEF OF NAVAL OPERATIONS SCHEDULED MAINTENANCE AVAILABILITIES
3.1 Purpose
3.2 Chief of Naval Operations Scheduled Maintenance Availabilities
3.3 Maintenance Policies and Procedures
3.4 Availability Work Package Planning
3.5 Availability Planning
3.6 Availability Execution
3.7 Availability Completion Departure Conference
3.8 Post Availability

CHAPTER 4 TYPE COMMANDER MAINTENANCE AVAILABILITIES
4.1 Purpose
4.2 Type Commander Maintenance Availabilities
4.3 Maintenance Policies and Procedures
4.4 Ship's Force Upkeep
4.5 Categories of Fleet Maintenance Activity Availabilities
4.6 Fleet Maintenance Activity Availability
4.7 Restricted Availability/Restricted Availability Docking
4.8 Technical Availability
4.9 Voyage Repair Availability
4.10 Interim Drydocking/Pre-Inactivation Restricted Availabilities
4.11 Specialized Maintenance Funding
4.12 Memorandum of Agreement
4.13 Ship to Shop Material Control

CHAPTER 5 DEEP SUBMERGENCE RESCUE VEHICLE TRIAL REQUIREMENTS
5.1 Purpose
5.2 Deep Submergence Rescue Vehicle Maintenance Strategies
5.3 Procedures
5.4 Crew Certification/Dock Trials/Fast Cruise
5.5 Sea Trials

PART II

CHAPTER 1 SURFACE SHIP MAINTENANCE VALIDATION, SCREENING AND BROKERING
1.1 Purpose
1.2 Maintenance
1.3 Work Candidates
1.4 Screening/Brokering
1.5 Assessments
1.6 Metrics
1.7 Placement and Oversight Metrics

CHAPTER 2 SURFACE SHIP WORK PACKAGE PREPARATION
2.1 Purpose
2.2 Scope
2.3 Executing Activity Planning
2.4 Master Specification Catalog
2.5 Milestones
2.6 Continuous Maintenance Availabilities
2.7 Advance Planning Status Messages
2.8 Maintenance Teams Executing Maintenance with Firm Fixed Price Contracts

CHAPTER 3 SURFACE SHIP MAINTENANCE WORK CLOSEOUT
3.1 Purpose
3.2 Scope
3.3 Background
3.4 Work Closeout Procedures

## VOLUME III - DEPLOYED MAINTENANCE

CHAPTER 1 INTRODUCTION
1. Notice
1.1 Purpose
1.2 Scope
1.3 Changes and Corrections
1.4 Requests for Copies of the Manual

CHAPTER 2 MAINTENANCE ORGANIZATIONS AND CAPABILITIES
2.1 Command Relationships
2.2 Maintenance Organizations and Capabilities
2.3 Common Maintenance Facilities - All Areas of Responsibility
2.4 Unique Maintenance Facilities - Commander, United States Naval Forces, Europe Area of Responsibility
2.5 Unique Maintenance Facilities - Commander, Fifth Fleet Area of Responsibility
2.6 Unique Maintenance Facilities - Commander, Seventh Fleet Area of Responsibility

CHAPTER 3 MAINTENANCE MANAGEMENT
3.1 Purpose
3.2 Ship Repair Work in Seventh Fleet Area of Responsibility
3.3 Current Work Package
3.4 Casualty Report Summary
3.5 Deployed Maintenance Periods
3.6 Voyage Repair Policy - All Areas of Responsibility (Non-Nuclear Work)
3.7 Nuclear Propulsion Plant and Related Equipment
3.8 Unsatisfactory Work/Work Practices
3.9 Strike Force Intermediate Maintenance Activity Mission, Policy and Applicability

CHAPTER 4 SCHEDULED MAINTENANCE PLANNING, PREPARATION AND PRIORITIES
4.1 Surface Ship Work Package Preparation
4.2 Continuous Maintenance Planning
4.3 Current Ship's Maintenance Project Maintenance While Deployed
4.4 Work Candidate Preparation and Priority
4.5 Submission of Work Packages
4.6 Screening of Work Candidates and Work Packages

CHAPTER 5 MAINTENANCE SUPPORT FOR NON-UNITED STATES NAVY SHIPS AND ACTIVITIES
5.1 Purpose
5.2 Military Sealift Command Vessels
5.3 United States Coast Guard Vessels
5.4 Other Service Craft and Activities

## VOLUME IV - TESTS AND INSPECTIONS

CHAPTER 1 INTRODUCTION
1.1 Purpose
1.2 Scope
1.3 Changes and Corrections
1.4 Request for Copies of the Manual

CHAPTER 2 FLEET MAINTENANCE ACTIVITY ASSESSMENT
2.1 Purpose
2.2 Assessment Areas

2.3 Assessment Results
2.4 Responsibilities
2.5 Assessment Findings/Corrective Action

CHAPTER 3 BOILER INSPECTION
3.1 Purpose
3.2 Types of Boiler Inspections
3.3 Responsibilities
3.4 Inspection Scheduling
3.5 Boiler Safety Procedures
3.6 Boiler Inspections and Requirements
3.7 Boiler Inspection Guidelines and Reports
3.8 Boiler Inspection Preparation
3.9 Boiler Inspection
3.10 Automatic Boiler Control Systems/Online Alignment Verification Guidelines
3.11 Boiler Flexibility Tests
3.12 System Certification Requirements
3.13 Certified Boiler Water and Feedwater Tester Requirements
3.14 Operating and Casualty Procedures

CHAPTER 4 DIESEL ENGINES
4.1 Purpose
4.2 Diesel Engine Inspector Certification
4.3 Diesel Inspections
4.4 Reporting Requirements
4.5 Operation and Maintenance
4.6 Compliance
4.7 Subject Matter Expert in the Repair and Maintenance of Diesel Engines

CHAPTER 5 MARINE SANITATION DEVICES
5.1 Purpose
5.2 Certification
5.3 Responsibilities
5.4 System Maintenance and Inspection
5.5 Technical System Assessment
5.6 Training

CHAPTER 6 OXYGEN AND NITROGEN SYSTEMS
6.1 Purpose
6.2 Precautions
6.3 Aviators Breathing Oxygen Testing
6.4 Operations and Maintenance

CHAPTER 7 ACCOUNTABILITY AND CERTIFICATION OF NUCLEAR PROPULSION PLANT TEST AND SUPPORT EQUIPMENT
7.1 Purpose
7.2 Nuclear Test Equipment Categories
7.3 Action
7.4 Procurement
7.5 Nuclear Test Equipment Certification
7.6 Accountability

CHAPTER 8 WEAPONS AND CARGO ELEVATOR ASSESSMENTS
8.1 Purpose
8.2 Elevator Support Unit
8.3 Ship's Force Assessment Responsibilities

8.4 Elevator Support Unit Evolutions
8.5 Visit Scheduling
8.6 Reports

CHAPTER 9 SYSTEM TEST CHECK LIST
9.1 Purpose
9.2 General Instructions
9.3 Record Retention

CHAPTER 10 WORK AUTHORIZATION AND CONTROL
10.1 Purpose
10.2 Work Authorization
10.3 Work Authorization Control
10.4 Work Authorization System
10.5 Final Certification, Close-Out and Re-Entry of Submarine Spaces, Tanks and Voids

CHAPTER 11 TECHNICAL DATA AND INFORMATION MANAGEMENT
11.1 Purpose
11.2 Technical Libraries
11.3 Index of Technical Publications and Ship's Drawing Index
11.4 Maintenance Support Centers

CHAPTER 12 HULL INSPECTION OF SHIPS AND CRAFT
12.1 Purpose
12.2 Action
12.3 Reports

CHAPTER 13 WEIGHT HANDLING EQUIPMENT TESTING AND INSPECTION
13.1 Purpose
13.2 Naval Sea Systems Command Afloat Requirements
13.3 Naval Facilities Engineering Command Ashore Requirements
13.4 Slings

CHAPTER 14 MAGAZINE SPRINKLER INSPECTION REQUIREMENTS
14.1 Purpose
14.2 Responsibilities

CHAPTER 15 CIRCUIT BREAKERS
15.1 Purpose
15.2 Circuit Breaker Function and Acquisition on Navy Ships
15.3 Circuit Breaker Overhaul Facilities and Part Procurement
15.4 Navy Policy on Shipboard Circuit Breaker Maintenance and Overhaul

CHAPTER 16 AIRCRAFT LAUNCH AND RECOVERY SYSTEMS FOR AVIATION SHIPS
16.1 Purpose
16.2 Aircraft Launch and Recovery Equipment Maintenance Program
16.3 Aviation Certification
16.4 Carrier And Field Service Unit
16.5 Naval Aviation Depot
16.6 Naval Aviation Depot Voyage Repair Team

CHAPTER 17 STEAM CATAPULT INSPECTION
17.1 Purpose
17.2 Types of Inspections
17.3 Responsibilities
17.4 Inspection Scheduling

17.5 Safety Procedures
17.6 Catapult Accumulator Inspections and Requirements
17.7 Inspection Guidelines and Reports

CHAPTER 18 SUBMARINE SALVAGE INSPECTION
18.1 Purpose
18.2 Inspections
18.3 Responsibilities

CHAPTER 19 RETENTION OF MATERIAL DEFICIENCY REPORTS AND RECORDS OF EQUIPMENT CHARACTERISTICS AND TESTS
19.1 Purpose
19.2 Inspection Reports
19.3 Retention of Records of Equipment Characteristics and Tests

CHAPTER 20 DIVER LIFE SUPPORT SYSTEMS, SUBMARINE RESCUE CHAMBER AND DRY DECK SHELTER MAINTENANCE AND CERTIFICATION
20.1 Purpose
20.2 Diver Life Support System Maintenance and Certification
20.3 Submarine Rescue Chamber Maintenance and Certification
20.4 Dry Deck Shelter Maintenance and Certification

CHAPTER 21 SUBMARINE OXYGEN GENERATING PLANTS
21.1 Purpose
21.2 Responsibilities
21.3 Requirements for Shipboard Personnel Qualification

CHAPTER 22 SUBMARINE ANTENNA TESTING
22.1 Purpose
22.2 Background
22.3 Policy
22.4 Procedure

CHAPTER 23 GAS TURBINE ENGINE INSPECTION
23.1 Purpose
23.2 Marine Gas Turbine Inspector
23.3 Gas Turbine Inspections and Requirements
23.4 Requesting Procedures
23.5 Preparation for Inspection
23.6 Inspection Procedures
23.7 Inspection Criteria
23.8 Inspection Results

CHAPTER 24 WOOD HULLED SHIPS AND CRAFT
24.1 Purpose
24.2 Wood Decay
24.3 Deck and Hull Maintenance
24.4 Surface Preparation and Painting
24.5 Wooden Hull Bottom Sheathing
24.6 Wooden Sea Chest Foundations

CHAPTER 25 GAS FREE ENGINEERING INSPECTIONS
25.1 Purpose
25.2 Scope
25.3 Discussion

# VOLUME V - QUALITY MAINTENANCE

PART I

FOREWORD QUALITY MAINTENANCE
1.1 Purpose
1.2 Scope
1.3 Manual Organization
1.4 Need for Quality Maintenance Processes
1.5 Changes and Corrections
1.6 Request for Copies of the Manual

CHAPTER 1 ORGANIZATIONAL RESPONSIBILITIES
1.1 Purpose
1.2 Fleet Responsibilities
1.3 Type Commander Responsibilities
1.4 Immediate Superior In Command Responsibilities
1.5 Ship Responsibilities
1.6 Regional Maintenance Center/Fleet Maintenance Activity Responsibilities
1.7 Other Activity Responsibilities

CHAPTER 2 QUALITY MAINTENANCE PROCESSES
2.1 Purpose
2.2 Technical Work Documents
2.3 Formal Work Package Development
2.4 Troubleshooting

CHAPTER 3 PERSONNEL QUALIFICATION AND TRAINING
3.1 Purpose
3.2 General
3.3 Qualification
3.4 Qualification Requirements
3.5 Training

CHAPTER 4 WELDER BRAZER AND NONDESTRUCTIVE TESTING QUALIFICATIONS
4.1 Purpose
4.2 General Requirements for Brazers and Welders
4.3 Brazer Qualifications
4.4 Qualification Requirements for Navy Enlisted Classification Code 4955 Welders
4.5 Qualification Requirements for Nondestructive Test Personnel

CHAPTER 5 IN-PROCESS CONTROL
5.1 Purpose
5.2 Test, Measurement and Diagnostic Equipment
5.3 Torque
5.4 Threaded Fasteners
5.5 Flanged Joints
5.6 O-Ring Seals
5.7 V-Ring Packing Seals
5.8 Inspections
5.9 Software
5.10 Submarine Safety Maintenance Certification/Re-Entry Control Nuclear and Non-Nuclear
5.11 Reactor Plant Work Accomplishment Report (Submarines Only)
5.12 Material Condition Monitoring (Submarines Only)
5.13 Submarine Fly-By-Wire Maintenance Certification

CHAPTER 6 MATERIAL CONTROL
6.1 Purpose
6.2 Nuclear
6.3 Non-Nuclear

CHAPTER 7 TESTING REQUIREMENTS
7.1 General
7.2 Testing
7.3 Weight Handling Equipment
7.4 Exemptions/Alternative Test Requirements (Non-Nuclear)
7.5 Reactor Plant and Nuclear Support Facility Testing
7.6 Supplemental Test Criteria (Non-Nuclear)

CHAPTER 8 DEPARTURE FROM SPECIFICATION (DFS/WAIVERS/NUCLEAR LIAISON ACTION REQUEST/STEAM PLANT ACTION REQUESTS)
8.1 Purpose
8.2 Departure From Specification
8.3 Departure From Specification Procedures
8.4 Nuclear Cognizant Areas

CHAPTER 9 AUDITS, SURVEILLANCE, EVALUATIONS AND ASSESSMENTS
9.1 Purpose
9.2 General
9.3 Responsibilities and Procedures
9.4 Reporting Audit Results and Corrective Action

CHAPTER 10 QUALITY ASSURANCE RECORDS
10.1 Purpose
10.2 General
10.3 Type Commander Quality Assurance Record Retention
10.4 Immediate Superior In Command Quality Assurance Record Retention
10.5 Ship's Quality Assurance Record Retention
10.6 Additional Submarine/Nuclear Unique Quality Assurance Record Retention Requirements
10.7 Fleet Maintenance Activity Quality Assurance Record Retention

CHAPTER 11 BLANK REPRODUCIBLE FORMS AND FORM INSTRUCTIONS
11.1 Purpose
11.2 List of Forms

CHAPTER 12 SUBMARINE PRESERVATION
12.1 Purpose
12.2 General Preservation Requirements
12.3 Submarine Preservation Maintenance Processes
12.4 Quality Assurance for Critical Coated Areas

CHAPTER 13 WIRE REMOVAL AND REPLACEMENT
13.1 Purpose
13.2 Action

PART II

CHAPTER 1 NAVAL NUCLEAR PROPULSION INFORMATION
1.1 Purpose
1.2 Presentation of Information

PART III

FOREWORD SCOPE OF CERTIFICATION
1 Purpose
2 Scope
3 Need for Scope of Certification Quality Maintenance Processes

CHAPTER 1 ORGANIZATIONAL RESPONSIBILITIES
1.1 Purpose
1.2 Responsibilities

CHAPTER 2 QUALITY MAINTENANCE PROCESSES
2.1 Applicability
2.2 Controlled Work Package

CHAPTER 3 PERSONNEL QUALIFICATION AND TRAINING
3.1 Applicability
3.2 General
3.3 Discussion
3.4 Qualification Requirements
3.5 Training

CHAPTER 4 WELDER, BRAZER AND NONDESTRUCTIVE TESTING QUALIFICATIONS
4.1 Applicability

CHAPTER 5 IN-PROCESS CONTROL
5.1 Purpose
5.2 Exceptions to Re-Entry Control
5.3 Planned Maintenance
5.4 Test, Measurement and Diagnostic Equipment
5.5 Torque
5.6 Threaded Fasteners
5.7 Flanged and Union Joints
5.8 O-Ring Seals
5.9 Inspections
5.10 Software
5.11 Scope of Certification Maintenance Certification/Re-Entry Control
5.12 Material Condition Monitoring (Submarines only)
5.13 Temporary Modifications

CHAPTER 6 MATERIAL CONTROL
6.1 Purpose
6.2 Controlled Material Determination
6.3 Receipt Inspection of Controlled Material
6.4 Re-use of Previously Certified Scope of Certification Material

CHAPTER 7 TESTING REQUIREMENTS
7.1 Purpose
7.2 Testing Requirements

CHAPTER 8 DEPARTURE FROM SPECIFICATIONS
8.1 Purpose
8.2 Departure from Specification

CHAPTER 9 AUDITS, SURVEILLANCE, EVALUATIONS AND ASSESSMENTS
9.1 Purpose
9.2 Responsibilities and Procedures
9.3 System Certification Authority Certification Surveys

CHAPTER 10 QUALITY ASSURANCE RECORDS
10.1 Purpose
10.2 Departure from Specification Record Retention
10.3 User Activity Quality Assurance Record Retention
10.4 Sustaining Activity Quality Assurance Record Retention

CHAPTER 11 BLANK REPRODUCIBLE FORMS AND FORM INSTRUCTIONS
11.1 Purpose
11.2 List of Forms

VOLUME VI - MAINTENANCE PROGRAMS

FOREWORD INTRODUCTION
1.1 Purpose
1.2 Scope
1.3 Changes and Corrections
1.4 Request for Copies of the Manual

CHAPTER 1 WATERBORNE UNDERWATER HULL CLEANING
1.1 Purpose
1.2 Scope
1.3 Policy
1.4 Responsibilities
1.5 Reports

CHAPTER 2 FLEET TECHNICAL ASSISTANCE
2.1 Purpose
2.2 Background
2.3 Fleet Technical Assistance Definition
2.4 Fleet Technical Assistance Policy
2.5 Responsibilities
2.6 Fleet Technical Assistance Procedures
2.7 Post-Fleet Technical Assistance Administrative Requirements

CHAPTER 3 SUBMARINE FLEET MODERNIZATION PROGRAM
3.1 Purpose
3.2 Responsibilities
3.3 Alteration Programs
3.4 Monitoring of Alteration Status
3.5 Reporting Change in Alteration Status
3.6 Alteration Requests
3.7 Alteration Feedbacks
3.8 Permanent Modifications to Tenders with Nuclear Support Facilities

CHAPTER 4 SHIPBOARD ELECTROMAGNETIC COMPATIBILITY
4.1 Purpose
4.2 Electromagnetic Compatibility Assessments or Surveys
4.3 Fleet Electromagnetic Compatibility Support Tools
4.4 Engineer Electromagnetic Interference Fixes
4.5 Electromagnetic Compatibility Certification
4.6 Electromagnetic Compatibility Certification Maintenance
4.7 Shipboard Electromagnetic Compatibility Improvement Program Technical Assistance Network
4.8 Responsibilities

CHAPTER 5 COMMON ASSESSMENT PROGRAM
5.1 Purpose
5.2 Common Assessment Program
5.3 Objectives
5.4 Principles
5.5 Ship Common Assessment Program Visits
5.6 Responsibilities

CHAPTER 6 INDUSTRIAL PLANT EQUIPMENT
6.1 Purpose
6.2 Definitions
6.3 Procurement Requirements
6.4 Responsibilities
6.5 Reports

CHAPTER 7 BOARD OF INSPECTION AND SURVEY MATERIAL INSPECTIONS POLICY
7.1 Purpose
7.2 Responsibilities
7.3 Inspection Scheduling
7.4 Preparation for the Board of Inspection and Survey Material Inspection
7.5 Board of Inspection and Survey Trial Conduct and Documentation
7.6 Post Board of Inspection and Survey Trial Actions

CHAPTER 8 MINIATURE/MICROMINIATURE ELECTRONIC REPAIR PROGRAM
8.1 Purpose
8.2 Responsibilities
8.3 Authorized Miniature/Microminiature Outfitting
8.4 Miniature/Microminiature Personnel and Station Requirements
8.5 Progressive Repair Process
8.6 Unique Miniature/Microminiature Guidance (Naval Air Force Only)
8.7 Unique Miniature/Microminiature Guidance (Submarine Force Only)

CHAPTER 9 METROLOGY AND CALIBRATION PROGRAM
9.1 Purpose
9.2 Responsibilities
9.3 Calibration Management
9.4 Regional Loan Pools
9.5 Replacement of General Purpose Electronic Test Equipment/Calibration Standards
9.6 Test Measurement Diagnostic Equipment Management
9.7 Shipboard Instrumentation and System Calibration
9.8 LHA and LHD Class Ship Metrology and Calibration Program
9.9 Nuclear Propulsion Calibration Requirements

CHAPTER 10 MOTOR GASOLINE HANDLING AND STORAGE
10.1 Purpose
10.2 Characteristics
10.3 Personnel Hazards
10.4 Storage and Handling
10.5 Motor Gasoline Assessment Program

CHAPTER 11 MAINTENANCE, REPAIR AND OVERHAUL OF SERVICE CRAFT, LANDING CRAFT AND SMALL BOATS
11.1 Purpose
11.2 Material Readiness
11.3 Maintenance of Landing Craft and Small Boats Assigned to Afloat Units
11.4 Maintenance of Service Craft, Landing Craft and Small Boats Assigned to Shore Activities, Group and Squadron Commanders
11.5 Responsibilities
11.6 Repair and Overhaul of Small Boat Engines
11.7 Operation of Small Boat Engines

CHAPTER 12 DEGAUSSING
12.1 Purpose
12.2 Degaussing Definitions
12.3 Ships With Installed Degaussing Systems
12.4 Submarines Without Installed Degaussing Systems

CHAPTER 13 CORROSION CONTROL
13.1 Purpose
13.2 Responsibilities

CHAPTER 14 CANNIBALIZATION
14.1 Purpose
14.2 Definitions
14.3 Authorization (Active Ship)
14.4 Request and Authorization
14.5 Procedures

CHAPTER 15 AMMUNITION OFF-LOAD
15.1 Purpose
15.2 Action
15.3 Notification

CHAPTER 16 HABITABILITY
16.1 Purpose
16.2 Habitability Improvement Programs
16.3 New Construction Ships
16.4 Naval Air Force Specific Habitability Improvement Programs

CHAPTER 17 IMPRESSED CURRENT CATHODIC PROTECTION
17.1 Purpose
17.2 Cathodic Protection Logs
17.3 Post Drydocking Activation

CHAPTER 18 INFLATABLE LIFE RAFTS
18.1 Purpose
18.2 Fleet Life Raft Program
18.3 Recertification
18.4 Contingency Pools
18.5 Automated Tracking System
18.6 Responsibilities
18.7 Unserviceable/Rejected Life Rafts
18.8 Records

CHAPTER 19 MAINTENANCE AND MATERIAL MANAGEMENT
19.1 Purpose
19.2 Ship Maintenance and Material Management

CHAPTER 20 WEIGHT AND MOMENT CONTROL
20.1 Purpose
20.2 Ballast Changes
20.3 Unusual Conditions

CHAPTER 21 SUBMARINE STORAGE BATTERIES
21.1 Purpose
21.2 Action
21.3 Casualty Reporting

CHAPTER 22 TRIDENT SYSTEM AND EQUIPMENT MAINTENANCE PLANS
22.1 Purpose
22.2 TRIDENT System and Equipment Maintenance Plans

CHAPTER 23 SUBMARINE NOISE REDUCTION
23.1 Purpose
23.2 Noise Reduction Program Elements
23.3 Responsibilities

CHAPTER 24 PERIODIC MAINTENANCE REQUIREMENT PROGRAM
24.1 Purpose
24.2 Type Commander Scheduling System
24.3 Periodic Maintenance Requirements Accomplishment
24.4 Material Support for Fleet Maintenance Activity Accomplished Periodic Maintenance Requirements
24.5 Corrective Maintenance of Equipment Using Periodic Maintenance Requirements
24.6 Periodic Maintenance Requirements Accomplishment During Chief of Naval Operations Maintenance Availabilities
24.7 Responsibilities

CHAPTER 25 UNRESTRICTED OPERATIONS
25.1 Purpose
25.2 Unrestricted Operation Maintenance Scheduling, Planning and Reporting
25.3 Responsibilities

CHAPTER 26 OPERATING DEPTH POLICY
26.1 Purpose
26.2 Initial Tightness Dive
26.3 Deep Dive/Controlled Dive

CHAPTER 27 SCHEDULED PRESERVATION UPKEEP COORDINATED EFFORT
27.1 Purpose
27.2 Scheduling
27.3 Responsibilities

CHAPTER 28 CABLEWAY ASSESSMENT
28.1 Purpose
28.2 Hazard Categories
28.3 Deficiency Correction
28.4 Assessment Scheduling
28.5 Cableway Assessment/Assist Team Composition and Procedures
28.6 Responsibilities
28.7 Reports

CHAPTER 29 HEAT STRESS CONTROL AND REPAIR OF THERMAL INSULATION
29.1 Purpose
29.2 Heat Stress
29.3 Industrial Availability Lagging Plan
29.4 Asbestos Lagging/Insulation

CHAPTER 30 PORTABLE TOOL ASSISTANCE PROGRAM
30.1 Purpose
30.2 Portable Tool Inventory Policy

CHAPTER 31 SURFACE SHIP MAINTENANCE PLACEMENT AND OVERSIGHT BUSINESS RULES
31.1 Purpose
31.2 Background
31.3 Ship Maintenance Funding Management Business Rules
31.4 Maintenance Proposal Review
31.5 Guidance for Firm Fixed Price Contracts

CHAPTER 32 TOP MANAGEMENT ATTENTION TOP MANAGEMENT ISSUES
32.1 Purpose
32.2 Background
32.3 Applicability and Scope
32.4 Responsibilities
32.5 Metrics

CHAPTER 33 CONTRACT ADMINISTRATION QUALITY ASSURANCE PROGRAM
33.1 Location

CHAPTER 34 SUBMARINE FLY-BY-WIRE SHIP CONTROL SYSTEM MAINTENANCE AND CERTIFICATION
34.1 Purpose
34.2 Submarine Fly-By-Wire Maintenance and Certification

CHAPTER 35 REGIONAL MAINTENANCE CENTERS
35.1 Purpose
35.2 Background
35.3 Reporting Relationships
35.4 Organizational Structure
35.5 Responsibilities

CHAPTER 36 SURFACE SHIP/AIRCRAFT CARRIER MODERNIZATION PROGRAM (SHIPMAIN)
36.1 Scope
36.2 Purpose
36.3 Background
36.4 Process
36.5 Voting Rules
36.6 Decision Boards
36.7 Approval for Fleet Alterations
36.8 Execution Year Changes to Modernization Plans
36.9 Metrics
36.10 Milestones

CHAPTER 37 REGIONAL MAINTENANCE CENTER PASSIVE COUNTERMEASURE SYSTEM SUPPORT REQUIREMENTS
37.1 Purpose
37.2 Passive Countermeasure System Event Description
37.3 Passive Countermeasure System Personnel Certification
37.4 Passive Countermeasure System Technical Assistance
37.5 Responsibilities

CHAPTER 38 DEEP SUBMERGENCE SYSTEMS HULL INTEGRITY PROCEDURES
38.1 Purpose
38.2 Hull Integrity Procedures Maintenance Scheduling, Planning and Reporting
38.3 Responsibilities

CHAPTER 39 HOT WASH PROCESS BUSINESS RULES
39.1 Purpose
39.2 Interaction Among Feedback Processes
39.3 Hot Wash Meeting Overview
39.4 Preparing for the Hot Wash Meeting
39.5 Conducting a Hot Wash Meeting
39.6 Post Hot Wash Process Meeting Activity
39.7 Super Hot Wash Meetings

CHAPTER 40 SUBMARINE MESSAGE REPORTING
40.1 Purpose
40.2 Background
40.3 Scope
40.4 Policy
40.5 Responsibilities
40.6 Message Requirements

VOLUME VII - CONTRACTED SHIP MAINTENANCE

FOREWORD CONTRACTED SHIP MAINTENANCE
1.1 Purpose
1.2 Scope
1.3 Changes and Corrections
1.4 Request for Copies of the Manual

CHAPTER 1 CONTRACTED SHIP REPAIR FUNCTIONS, TASKS AND STANDARDS OF CONDUCT
1.1 Contracted Ship Repair Functions and Tasks Overview
1.2 Contracted Ship Repair Functions and Tasks
1.3 Organizational Relationships for Vessel Modernization, Overhaul, Repair and Maintenance Contracting

CHAPTER 2 CONTRACTS AND CONTRACT ADMINISTRATION
2.1 Purpose
2.2 Overview of the Federal Acquisition Process
2.3 Budget/Appropriations/Allocation Process
2.4 Contracts
2.5 Overview of Contracting Procedures
2.6 Writing Contracts
2.7 Contracting Officer Authority and Responsibilities
2.8 Contract Administration
2.9 Socioeconomic Programs
2.10 Processing Contractual Actions
2.11 Proposal Analysis
2.12 Work Scope
2.13 Technical Analysis Reports
2.14 Audit Evaluation of Change Proposals and Submission of Advisory Audit Reports
2.15 Contract Modifications
2.16 Claims Policy
2.17 Maintenance Centers
2.18 Contract Claims
2.19 Resolution of Disputes
2.20 Contract Terminations
2.21 Overtime and Multi-Shift Work
2.22 Subcontracts

CHAPTER 3 PRIMARY CONTRACTING STRATEGIES - MASTER AGREEMENT FOR REPAIR AND ALTERATION OF VESSELS AND MULTI-SHIP/MULTI-OPTION
3.1 Purpose
3.2 Policy
3.3 Agreements
3.4 Eligibility Requirements for Master Ship Repair Agreement and Agreement for Boat Repair Program
3.5 Responsibilities Applicable to the Master Ship Repair Agreement and/or Agreement for Boat Repair Program
3.6 Procedures for Master Ship Repair Agreement and Agreement for Boat Repair
3.7 Multi-Ship/Multi-Option Contracts

CHAPTER 4 CONTRACT SPECIFICATION DEVELOPMENT
4.1 Preparation of Specifications and Estimates of Cost
4.2 Work Package Development
4.3 Specifications
4.4 Preparation
4.5 Specification Review
4.6 Other Functions of the Work Item Planner
4.7 Planning Review
4.8 Non-Scheduled Availabilities
4.9 Regional Maintenance Center Actions Upon Receipt of Work Requests

CHAPTER 5 COST ESTIMATING
5.1 Introduction
5.2 Types of Estimates
5.3 Classification of Cost Estimates
5.4 Standard Estimating
5.5 Estimating Environment
5.6 Cost Estimating Methods, Standardization and Standards
5.7 Preparing the Cost Estimate
5.8 Estimating for Contract Modifications
5.9 Ship Alteration Estimates
5.10 Labor Rate Estimating
5.11 Forward Pricing Rates

CHAPTER 6 FUNDING AND ACCOUNTING
6.1 Purpose
6.2 Scope
6.3 Policy
6.4 General Information Concerning Funding and Funds Administration
6.5 Legislated Responsibilities for Control of Public Funds
6.6 Responsibilities for Ship Maintenance Funding Management Business Rules
6.7 Funding Violation Reporting
6.8 Funding Violation Penalties
6.9 Funding Methods and Accounting
6.10 General Information Concerning Availability and Obligation of Funds

CHAPTER 7 AVAILABILITY AND PROJECT MANAGEMENT
7.1 Purpose
7.2 General
7.3 Project Management
7.4 Contract Administration Team
7.5 Support Staff
7.6 Availability Performance
7.7 Scheduled Conferences and Meetings
7.8 Availability Management
7.9 Availability Processes
7.10 Funds Administration
7.11 Delays In Performance
7.12 Availability Finalization
7.13 Insurance

CHAPTER 8 TESTING, TRIALS, REDELIVERY AND GUARANTEES
8.1 Purpose
8.2 Scope
8.3 Application of Total Ship Test Program to Modernization and Repair Work
8.4 Trials for Overhaul and Repair Availabilities
8.5 Finalization Procedures for Repair and Modernization Availabilities
8.6 Final Acceptance

CHAPTER 9 PROPERTY ADMINISTRATION
9.1 Scope
9.2 Real and Personal Property
9.3 Providing Government Property to Contractors
9.4 Contractor Use and Rental of Government Property
9.5 Administration of Government Property
9.6 Responsibilities of the Contractor
9.7 Repair or Modification of Government Furnished Property
9.8 Facilities and Leases

CHAPTER 10 ENVIRONMENTAL, SAFETY AND HEALTH
10.1 Purpose
10.2 Environmental Protection
10.3 Occupational Safety and Health

CHAPTER 11 CONTRACT ADMINISTRATION QUALITY ASSURANCE PROGRAM
11.1 Purpose
11.2 Program Direction and Control
11.3 Personnel Capability Requirements
11.4 Surveys and Conferences
11.5 Elements of the Contract Administration Quality Assurance Program
11.6 Government Contract Quality Assurance Actions at Source

## APPENDIX B

## MASTER LIST OF REFERENCES

2M Marine Corps TM 5895-45/1B - Standard Maintenance Practices 2M Electronic Assembly Repair

5 CFR 2635 - Standards of Ethical Conduct for Employees of the Executive Branch

10 USC 1724 - Defense Acquisition Workforce Improvement Act (DAWIA)
10 USC 2306 - Kinds of Contracts
10 USC 7311 - Repair or Maintenance of Naval Vessels: Handling of Hazardous Waste

29 CFR 1910 - Occupational Safety and Health Standards

31 USC 1301(a) - Application
31 USC 1341 - Limitations on Expending and Obligating Amounts
31 USC 1342 - Limitation on Voluntary Services
31 USC 1349 - Adverse Personnel Actions
31 USC 1517 - Prohibited Obligations and Expenditures
31 USC 1518 - Adverse Personnel Actions
31 USC 1535 - Agency Agreements

41 USC 23 - Orders or Contracts for Material Placed with Government-owned Establishments Deemed Obligations
41 USC 254 - Contract Requirements

CLF/CPFINST 4720.3 - Management of Afloat Combat Systems and C4I Installations and Improvements

CNAP/CNALINST 9210.4 - Nuclear Propulsion Note 9200-2

COMFLTFORCOM 181810Z Mar 03 - Establishment of Regional Maintenance Centers
COMFLTFORCOM R291336Z Dec 03 - Fleet Technical Assistance Policy

COMLANTFLTINST 3500.18 - Certification and Readiness of Aviation Facilities in Naval Ships Operating Aircraft
COMLANTFLTINST 4100.3 - Navy Energy Usage Reporting System (NEURS)
COMLANTFLTINST 4700.1 - Navy Afloat Maintenance Training Strategy (NAMTS) Job Qualification Requirements (JQR) Management
COMLANTFLTINST 4700.10 - Policies and Procedures for Fleet Technical Support
COMLANTFLTINST 5400.2 - U.S. Atlantic Fleet Regulations

COMLANTFLT OPORD 2000

COMLANTFLT/COMPACFLTINST 4720.3A - Management of Afloat Combat Systems and C41 Installations and Improvements
COMLANTFLT/COMPACFLTINST 5450.89B/5450.120B - Mission, Functions and Tasks of the Fleet Technical Support Centers, Atlantic (FTSCLANT) and Pacific (FTSCPAC)

COMLOGWESTPACINST 4700.1 - Maintenance Handbook for Deployed Ships

COMNAVAIRFORINST 4700.23 - Aircraft Carrier Maintenance Support Centers (MSC) Policy and Procedures

COMNAVAIRLANTINST 3400.4 - Air Department Standard Operating Procedures
COMNAVAIRLANTINST 3500.20 - Aircraft Carrier Training and Readiness Manual

COMNAVAIRLANTINST 4790.34 - Electrostatic Discharge (ESD) Control Program
COMNAVAIRLANTINST 4790.40 - Aircraft Launch and Recovery Equipment Maintenance Program (ALREMP) Management Teams

COMNAVAIRLANTINST 4790.42 - CV/CVN Intermediate Maintenance Activity (IMA) Module Test and Repair Facility (MTRF)

COMNAVAIRLANTINST 9080.2 - Conduct of Trials and Inspections Incident to Construction, Overhauls or Availabilities of Nuclear Powered Aircraft Carriers (CVN)
COMNAVAIRLANTINST 9090.2 - Conduct of Shipyard Trials and Inspections Incident to Service Life Extension Program (SLEP), Overhauls or Availabilities of Conventionally Powered Aircraft Carriers

COMNAVAIRLANTINST 13640.2 - Naval Aircraft Carrier Metrology and Calibration Program
COMNAVAIRLANTINST 13640.3 - Naval Aviation Metrology and Calibration Program
COMNAVAIRLANTINST 13650.1 - Individual Material Readiness List (IMRL) Program

COMNAVAIRPACINST 3400.4 - Air Department Standard Operating Procedures
COMNAVAIRPACINST 3500.20 - Aircraft Carrier Training and Readiness Manual
COMNAVAIRPACINST 4790.39 - Aircraft Launch and Recovery Equipment Maintenance Program (ALREMP) Management Teams
COMNAVAIRPACINST 4790.54 - CV/CVN Intermediate Maintenance Activity (IMA) Module Test and Repair Facility (MTRF)

COMNAVAIRPACINST 13640.2 - Naval Aircraft Carrier Metrology and Calibration Program
COMNAVAIRPACINST 13640.3 - Naval Aviation Metrology and Calibration Program

COMNAVSEASYSCOM WASHINGTON DC 031440Z MAR 03 - Submarine Industrial EMC and EMI Control Interim Guidance

COMNAVSUBFOR OPORD 2000

COMNAVSURFLANTINST 3502.2 - Surface Force Training Manual
COMNAVSURFLANTINST 3540.18 - Engineering Department Organization and Regulation Manual (EDORM)
COMNAVSURFLANTINST 4400.1 - Surface Force Supply Procedures
COMNAVSURFLANTINST 4700.4 - Fleet Introduction Handbook

COMNAVSURFORINST 3540.1 - Engineering Operations Assessment, Training and Certification for Conventionally Powered Surface Ships

COMNAVSURFORINST 3540.2 - Surface Force Engineering Readiness Process

COMNAVSURFOR NOTICE 4701 - Surface Ship Maintenance Validation, Screening and Brokering
COMNAVSURFOR NOTICE 4702 - Surface Ship Work Package Preparation
COMNAVSURFOR NOTICE 4703 - Surface Ship Maintenance Placement Oversight Business Rules

COMNAVSURFPACINST 3501.4 - Aviation Readiness Evaluation (ARE) and Certification of Aviation Facilities Onboard COMNAVSURFPAC Ships
COMNAVSURFPACINST 3502.2 - Surface Force Training Manual
COMNAVSURFPACINST 3540.13 - Engineering Department Organization and Regulation Manual (EDORM)
COMNAVSURFPACINST 4400.1 - Surface Force Supply Procedures

COMPACFLTINST 4100.3 - Navy Energy Usage Reporting System (NEURS)
COMPACFLTINST 4341.1 - Fleet Technical Assistance (FTA) Program
COMPACFLTINST 4700.5 - Navy Afloat Maintenance Training Strategy (NAMTS) Job Qualification Requirements (JQR) Management

COMPACFLTINST 4710.6 - Policy for Accomplishment of Ship Repair Work in WESTPAC
COMPACFLTINST 5400.3 - U.S. Pacific Fleet Regulations
COMPACFLTINST 9830.1 - Certification of Aviation Facilities in Naval Ships Operating Aircraft

COMPACFLTINST 4700.5/COMLANTFLTINST 4700.1 - Navy Afloat Maintenance Training Strategy (NAMTS) Job Qualification Requirements (JQR) Management

COMPACFLT OPORD 201

COMSERVFORNAVCENTINST 4700.1 - Maintenance Handbook for Deployed Ships

COMSERVFORSIXTHFLTINST 4700.1 - Maintenance Handbook for Deployed Ships

COMSEVENTHFLT OPORD 201

COMSIXTHFLT OPORD 4000

COMSUBGRU7INST C3210.2 - Deployment Guide
COMSUBGRU7INST 4790.1 - Conduct of Submarine and Tender Availabilities

COMSUBLANTNOTE C3120 - Submarine Operating Restrictions and Depths Authorizations

COMSUBLANTINST C3500.1 - Submarine Force Training Manual
COMSUBLANTINST 3540.10 - Periodic Monitoring of Submarines and Support Facilities
COMSUBLANTINST 4406.1 - Submarine Supply Procedures Manual
COMSUBLANTINST 4419.1 - Module Screening and Repair Activity (MSRA) Repairables Management Procedure
COMSUBLANTINST 5400.4 - Submarine Force, U.S. Atlantic Fleet Regulations
COMSUBLANTINST C5400.30 - Engineering Department Organization Manual
COMSUBLANTINST C9460.3A - Coordinated Submarine Radiated Noise Analysis
COMSUBLANTINST 9460.4 - Submarine Towed Array Operations

COMSUBPACINST C3500.1 - Submarine Force Training Manual
COMSUBPACINST 3540.10 - Periodic Monitoring of Submarines and Support Facilities
COMSUBPACINST 4406.1 - Submarine Supply Procedures Manual
COMSUBPACINST 4419.1 - Submarine Tender Supply Management Procedures for AN/BSY-1 Repairables
COMSUBPACINST 5400.7 - Submarine Force, U.S. Pacific Fleet Regulations
COMSUBPACINST C5400.30 - Engineering Department Organization Manual
COMSUBPACINST 9460.4 - Submarine Towed Array Operations
COMSUBPACINST 9460.5 - Coordinated Submarine Radiated Noise Analysis

COMSUBPACNOTE C3120 - Submarine Operating Restrictions and Depth Authorizations
COMSUBPACNOTE 9086 - COMSUBPAC Engineering Notes and Technical Notes

COMUSNAVEUR OPORD 4000

DCAAM 7640.1, July 2004 Edition - DCAA Contract Audit Manual (CAM) Chapter 9-1004.2

DD Form 1638 - Report of Disposition of Contractor Inventory

DFARS 201.4 - Deviations From the FAR
DFARS 206.302-2 - Unusual and Compelling Urgency
DFARS 211 - Describing Agency Needs
DFARS 217.71 - Master Agreement for Repair and Alteration of Vessels
DFARS 217-7104 - Clauses

DFARS 219 - Small Business Programs
DFARS 222 - Application of Labor Laws to Government Acquisitions
DFARS 222.101 - Labor Relations
DFARS 245.301 - Definitions
DFARS 245.302 - Providing Facilities
DFARS 245.505 - Records and Reports of Government Property
DFARS 245.6 - Reporting, Redistribution and Disposal of Contractor Inventory
DFARS 245.608-70 - Contractor Inventory Redistribution System (CIRS)
DFARS 245.7001 - Selection, Appointment and Termination
DFARS 245.7002 - Duties and Responsibilities of Plant Clearance Officers
DFARS 252 - Solicitation Provisions and Contract Clauses
DFARS 252.217-7012 - Master Ship Repair Agreement (MSRA) and MSMO Liability and Insurance Clause
DFARS 252.217-7015 - Compliance With OSHA Regulations

DFARS Part 217 - Special Contracting Methods
DFARS Part 245 - Government Property

DoD 5520.22 - National Industrial Security Program Operating Manual
DoD 7000.14-R - Volume 14 - Administrative Control of Funds and Anti-Deficiency Act Violations
DoD Automation Resources Manual 7950.1-M
DoD Directive 5000.1 - The Defense Acquisition System
DoD Directive 5500.7 - Standards of Conduct
DoD Directive 7200.1 - Administrative Control of Appropriations
DoD Financial Management Policy Manual
DoD Manual 4161.2M - Manual for Performance of Government Property Administration
DoDINST 5000.2 - Operation of the Defense Acquisition System
DoD-STD-2003 - Military, Standard, Electric Plant Installation Standard Methods for Surface Ships and Submarines

FAR 4.802 - Contract Files
FAR 6.302-2 - Unusual and Compelling Urgency
FAR 9.1 - Responsible Prospective Contractors

FAR 11.104 - Use of Brand Name or Equal Purchase Descriptions
FAR 14.201-1 - Uniform Contract Format
FAR 14.204-1 - Records of Invitations for Bids and Records of Bids

FAR 42.2 - Contract Administration Services
FAR 42.201 - Contract Administration Responsibilities
FAR 42.3 - Contract Administration Office Functions
FAR 42.302 - Contract Administration Functions

FAR 45.102 - Policy
FAR 45.301 - Definitions
FAR 45.302 - Providing Facilities
FAR 45.303 - Providing Material
FAR 45.306 - Providing Special Tooling
FAR 45.307 - Providing Special Test Equipment
FAR 45.310 - Providing Agency Peculiar Property
FAR 45.4 - Contractor Use and Rental of Government Property
FAR 45.5 - Management of Government Property in Possession of the Contractor
FAR 45.6 - Scope of Subpart

FAR 52.232-16 - Progress Payments Clause
FAR 52.245-2 - Government Property (Fixed Price Contracts)
FAR 52.245-4 - Government-Furnished Property (Short Form)

FAR 203

FAR Part 1.3 - Agency Acquisition Regulations
FAR Part 1.4 - Deviations
FAR Part 1.6 - Career Development, Contracting Authority and Responsibilities
FAR Part 2.1 - Definitions
FAR Part 9 - Contractor Qualifications

FAR Part 14 - Sealed Bidding
FAR Part 15 - Contracting by Negotiation
FAR Part 16 - Types of Contracts

FAR Part 31 - Contract Cost Principles and Procedures
FAR Part 42 - Contract Administration and Audit Services
FAR Part 43 - Contract Modifications
FAR Part 44 - Subcontracting Policies and Procedures
FAR Part 45 - Government Property
FAR Part 46 - Quality Assurance
FAR Part 49 - Termination of Contracts

FAR Part 52 - Solicitation Provisions and Contract Clauses

Federal Acquisition Regulation (FAR)

FGC 2212 - Maintenance Support Center Procedures Manual

Fly-By-Wire Ship Control System Certification Boundary Book (ship specific)

FMP Manual Section 4-11 - Procedures for Ships Selected Records

INSURVINST 4730.1 - Trials and Inspections of Surface Ships
INSURVINST 4730.2 - Trials and Material Inspections of Submarines
INSURVINST 4730.8 - Reports of Trials, Material Inspections and Survey Conducted by INSURV
INSURVINST 4730.11 - Preparation of Deficiency Forms

Integrated Project Teams for Aircraft Carrier Maintenance Handbook

Maintenance Index Page 4722/007 - Passive Countermeasure System (PCMS)

Maintenance Plan 4100-02-01 - Command and Control System (CCS) Electromagnetic Interference (EMI) Testing

MIL-HDBK-263 - Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies and Equipment
MIL-HDBK-773 - Electrostatic Discharge Protective Packaging

MIL-P-24534 - Planned Maintenance System: Development of Maintenance Requirement Cards, Maintenance Index Pages, and Associated Documentation
MIL-S-24340 - Polyurethane (Polyether Base) Deck Sealing Compound

MIL-STD-413 - Visual Inspection Guide for Elastomeric O-rings
MIL-STD-438 - Schedule of Piping, Valves, Fittings, and Associated Piping Components for Submarine Service
MIL-STD-767 - Cleaning Requirements for Special Purpose Equipment, Including Piping Systems
MIL-STD-777 - Schedule of Piping, Valves, Fittings, and Associated Piping Components for Naval Surface Ships
MIL-STD-792 - Identification Marking Requirements for Special Purpose Components

MIL-STD-1330 - Standard Practice for Precision Cleaning and Testing of Shipboard Oxygen, Helium, Helium-Oxygen, Nitrogen and Hydrogen Systems
MIL-STD-1388 - Logistic Support Analysis
MIL-STD-1627 - Bending of Pipe or Tube for Ship Piping Systems
MIL-STD-1680 - Installation Criteria for Shipboard Secure Electrical Information Processing Systems
MIL-STD 1686 - Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment
MIL-STD-1689 - Fabrication, Welding and Inspection of Ship's Structures

MIL-STD-2039 - Field Changes and Field Change Kit Preparation
MIL-STD-2132 - Nondestructive Examination Requirements for Special Applications
MIL-STD-2179 - Brush Electroplating on Marine Machinery
MIL-V-24624 - Valves, Butterfly, Wafer and Lug Style
N6-NTSP-S-70-8003H - Navy Training System Plan (NTSP) for Electromagnetic Interference (EMI) Control
NASM 7838 - Bolts, Internal Wrenching

National Fire Protection Association Codes and Standards 306 - Standards for the Control of Gas Hazards on Vessels

NAVAIR 00-25-100 - Naval Air System Command Technical Manual Program
NAVAIR 01-1A-23 - Electronic Assembly Repair Standard Maintenance Practice
NAVAIR 13-1-6.1 - Aviation Crew Systems, Chapter 7 (LRU 13/A)

NAVAIR 17-1-124 - Microminiature Component Repair Set
NAVAIR 17-1-127 - Periodic Proofload Testing of Weapons Support Equipment W/IPB
NAVAIR 17-35MTL-1 - Metrology Requirements List
NAVAIR 17-35NCA-1 - Navy Calibration Activity (NCA) List
NAVAIR 17-35QAL-15 - Naval Aircraft Carrier (METCAL) Program Manual
NAVAIR 17-600-141-6-1 - Microminiature Repair Status Pre-operational Check List
NAVAIR 17-600-141-6-2 - Microminiature Repair Station

NAVAIR AD-700A1-MDB-000 - Recovery Assistance Traversing (RAST) System
NAVAIR A6-332AO-GYD-000 - Laboratory and Aviators Breathing Oxygen Field Guide

NAVAIRINST 3120.1 - Lead Systems Command Procedures and Responsibilities for Certification of Aviation Facilities and Equipment in Naval Ships Operating Aircraft
NAVAIRINST 13800.11 - Procedures and Responsibilities for Certification and Verification of the Precision Approach and Landing System

NAVCOMPT Form 2168/1 - Expense Operation Budget
NAVCOMPT Form 2275 - Orders for Work and Services
NAVCOMPT Manual - Paragraph 035400-035452
NAVCOMPT Manual - Volume 2
NAVCOMPT Manual - Volume 3, Appropriation, Cost, and Property Accounting (Field)

NAVCOMPTINST 7000.38 - Productivity Enhancing Incentive Fund (PEIF)/The Productivity Enhancement Capital Investment Fast Payback Program

NAVEDTRA 10500 - Catalog of Navy Training Courses
NAVEDTRA 43241 - Personnel Qualification Standard for Ship's Maintenance and Material Management (3-M) System
NAVEDTRA 43523 - Personnel Qualification Standard for Quality Maintenance Program

NAVFAC Manual MO-322 - Inspection Guides, Structural, Mechanical and Electrical
NAVFAC P-307 - Management of Weight Handling Equipment
NAVFAC Technical Publication DM-29 - Drydocking Facilities

NAVICPINST 4355.5 - Receipt, Inspection, Storage and Issue of Level I/SUBSAFE Material

NAVORD OP 4 - Ammunition Afloat

NAVPERS 18068 - Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards

NAVSEA Contracts Handbook (NCH) - Master Agreement for Repair and Alteration of Vessels
NAVSEA Contracts Handbook (NCH), Part 45 - Government Property

NAVSEA ltr - Ser 05T1/009 of 06 April 04, Passive Countermeasure System (PCMS) Waterfront Support Requirements for Regional Maintenance Centers
NAVSEA ltr - Ser 396A23/0641 of 25 June 93 - Trident Preservation Maintenance
NAVSEA ltr - Ser 92T124/006 of 14 Mar 02 - Preservation QA Requirements for In-Service Submarines

NAVSEA MS 6310-081-015 - Submarine Preservation
NAVSEA MS 7650-081-091 - Submarine Hull Inspection

NAVSEA OD 45845 - Metrology Requirements List (METRL)

NAVSEA OP-4 - Ammunition Afloat
NAVSEA OP 3347 - Ordnance Safety Precautions, U.S. Navy
NAVSEA OP 4098 - Handling Ammunition, Explosives and Hazardous Material with Industrial Materials Handling Equipment

NAVSEA RIM 05T1-99 - PCMS Repair and Installation Methods

NAVSEA S-30-9412 - Passive Countermeasure System (PCMS) Naval Training System Plan

NAVSEA S9074-AQ-GIB-010/248 - Welding and Brazing Procedures and Performance Qualification
NAVSEA S9074-AR-GIB-010/278 - Requirements for Fabrication Welding and Inspection, and Casting Inspection and Repair for Machinery, Piping and Pressure Vessels

NAVSEA S9086-CH-STM-010 - NSTM Chapter 074 V1 (Welding and Allied Processes)
NAVSEA S9086-CH-STM-020 - NSTM Chapter 074 V2 (Nondestructive Testing of Metals, Qualification and Certification Requirements for Naval Personnel (Non-nuclear))
NAVSEA S9086-CH-STM-030 - NSTM Chapter 074 V3 (Gas Free Engineering)
NAVSEA S9086-CJ-STM-010 - NSTM Chapter 075 (Threaded Fasteners)
NAVSEA S9086-CM-STM-010 - NSTM Chapter 078 (Gaskets, Packing and Seals)
NAVSEA S9086-CN-STM-030 - NSTM Chapter 079 V3 (Damage Control Engineering Casualty Control)
NAVSEA S9086-CN-STM-040 - NSTM Chapter 079 V4 (Damage Control; Compartment Testing and Inspection)

NAVSEA S9086-CQ-STM-010 - NSTM Chapter 081 R4 (Waterborne Underwater Hull Cleaning of Navy Ships)
NAVSEA S9086-C4-STM-000 - NSTM Chapter 094 (Trials)
NAVSEA S9086-C6-STM-000 - NSTM Chapter 096 (Weights and Stability)
NAVSEA S9086-DA-STM-000 - NSTM Chapter 100 (Hull Structures)
NAVSEA S9086-GX-STM-010 - NSTM Chapter 220, V1 (Boiler Water/Feedwater Chemistry)
NAVSEA S9086-GX-STM-020 - NSTM Chapter 220, V2 (Water Treatment)
NAVSEA S9086-GY-STM-010 - NSTM Chapter 221 (Boilers)
NAVSEA S9086-G1-STM-010 - NSTM Chapter 223, V1 (Submarine Storage Batteries - Lead Acid Batteries)
NAVSEA S9086-G9-STM-000 - NSTM Chapter 231 (Propulsion and SSTG Steam Turbines)

NAVSEA S9086-HB-STM-010 - NSTM Chapter 233 (Diesel Engines)
NAVSEA S9086-HC-STM-000 - NSTM Chapter 234 (Marine Gas Turbines)
NAVSEA S9086-HK-STM-010 - NSTM Chapter 241 (Propulsion Reduction Gears, Couplings, Clutches and Associated Components)
NAVSEA S9086-HN-STM-010 - NSTM Chapter 244 (Propulsion Bearings and Seals)
NAVSEA S9086-H7-STM-010 - NSTM Chapter 262 (Lubricating Oil)

NAVSEA S9086-QN-STM-010 - NSTM Chapter 475 (Magnetic Silencing)
NAVSEA S9086-RJ-STM-010 - NSTM Chapter 504 (Pressure, Temperature and other Mechanical and Electromechanical Measuring Instruments)
NAVSEA S9086-RK-STM-010 - NSTM Chapter 505 (Piping Systems)
NAVSEA S9086-RQ-STM-010 - NSTM Chapter 510 (Heating, Ventilation, and Air Conditioning Systems for Surface Ships)
NAVSEA S9086-SP-STM-010 - NSTM Chapter 542 (Gasoline and JP-5 Fuel Systems)
NAVSEA S9086-SX-STM-010 - NSTM Chapter 550 (Industrial Gases; Generating, Handling, and Storage)
NAVSEA S9086-SY-STM-010 - NSTM Chapter 551 (Compressed Air Plants and Systems)

NAVSEA S9086-TK-STM-010 - NSTM Chapter 571 (Underway Replenishment)
NAVSEA S9086-TL-STM-000 - NSTM Chapter 572 (Shipboard Stores and Provision Handling)
NAVSEA S9086-TM-STM-000 - NSTM Chapter 573 (Booms)
NAVSEA S9086-TV-STM-010 - NSTM Chapter 581 (Anchoring)
NAVSEA S9086-TX-STM-010 - NSTM Chapter 583 (Boats and Small Craft)
NAVSEA S9086-T3-STM-010 - NSTM Chapter 588 (Aircraft Elevators)
NAVSEA S9086-T4-STM-010 - NSTM Chapter 589 (Cranes)
NAVSEA S9086-T8-STM-010 - NSTM Chapter 593 (Pollution Control)
NAVSEA S9086-UU-STM-010 - NSTM Chapter 613 (Wire and Fiber Rope and Rigging)

NAVSEA S9086-VD-STM-010 - NSTM Chapter 631 V1 (Preservation of Ships In-Service - General)
NAVSEA S9086-VD-STM-020 - NSTM Chapter 631 V2 (Preservation of Ships In-Service - Surface Preparation and Painting)
NAVSEA S9086-VD-STM-030 - NSTM Chapter 631 V3 (Preservation of Ships In-Service - Surface Ship/Submarine Applications)
NAVSEA S9086-VF-STM-010 - NSTM Chapter 633 (Cathodic Protection)
NAVSEA S9086-VG-STM-010 - NSTM Chapter 634 (Deck Coverings)
NAVSEA S9086-VH-STM-010 - NSTM Chapter 635 (Thermal, Fire and Acoustic Insulation)

NAVSEA S9086-XG-STM-010 - NSTM Chapter 700 (Shipboard Ammunition Handling and Stowage)
NAVSEA S9086-ZN-STM-000 - NSTM Chapter 772 (Cargo and Weapons Elevators)

NAVSEA S9086-7G-STM-000 - NSTM Chapter 997 (Drydocking of Naval Vessels)
NAVSEA S9086-7G-STM-010 - NSTM Chapter 997 (Docking Instructions and Routine Work in Dry Dock)

NAVSEA 0348-LP-159-1000 - Freeze Sealing Manual (Nuclear)
NAVSEA 0387-LP-046-8000 - System Hydrostatic Test Requirements

NAVSEA 0389-LP-031-7000 - Procedures for Maintenance and Repair of Naval Reactor Plants (Nuclear)

NAVSEA 0900-LP-001-7000 - Fabrication and Inspection of Brazed Piping Systems
NAVSEA 0900-LP-016-6081 - Quality Assurance Standards for Submarine Antenna and Mast Materials
NAVSEA 0900-LP-016-6090 - Handbook for Submarine Antenna Systems
NAVSEA 0900-LP-016-7008 - Submarine Antenna Technical Documentation
NAVSEA 0900-LP-095-4010 - Ship Test and Evaluation Planning Guide

NAVSEA 0901-LP-120-0001 - NSTM Chapter 9120 (Hull Fittings, Lashing Gear, and Access Closures)
NAVSEA 0902-LP-018-2010 - General Overhaul Specifications for Deep Diving SSBN/SSN Submarines (DDGOS)
NAVSEA 0905-LP-485-6010 - Manual for the Control of Testing and Ships Conditions

NAVSEA 0924-LP-062-0010 - Submarine Safety (SUBSAFE) Requirements Manual
NAVSEA 0948-LP-045-7010 - Material Control Standard
NAVSEA 0967-LP-412-3050 - Sonar Dome Handbook, Volume 5

NAVSEA 0989-028-5000 - Manual for Control of Testing and Plant Conditions (Nuclear)

NAVSEA 0989-LP-026-1000 - A4W/A1G Reactor Plant Manual
NAVSEA 0989-LP-030-7000 - Lifting Standard
NAVSEA 0989-LP-031-4000 - Reactor Instrumentation and Control Equipment Maintenance
NAVSEA 0989-LP-037-2000 - Commissioned Submarine General Reactor Plant Overhaul and Repair Specifications

NAVSEA 0989-LP-040-6000 - Air Flask Inspection and Maintenance Requirements (Nuclear)
NAVSEA 0989-LP-043-0000 - Commissioned Surface Ship General Reactor Plant Overhaul and Repair Specification
NAVSEA 0989-LP-058-0000 - AS/AD Tender Nuclear Support Facilities Preventive Maintenance Index
NAVSEA 0989-LP-058-1000 - Destroyer Tender and Submarine Tender Nuclear Support Facilities Overhaul and Repair Specification
NAVSEA 0989-LP-062-4000 - Naval Nuclear Quality Control Manual for Shipyards
NAVSEA 0989-LP-064-3000 - Cleanliness Requirements for Nuclear Propulsion Plant Maintenance by Forces Afloat

NAVSEA 250-1500-1 - Welding Standard
NAVSEA 389-0153 - Radiological Controls
NAVSEA 389-0288 - Radiological Controls
NAVSEA 392-0755 - Seal Welding Manual (Nuclear)

NAVSEA S0300-B2-MAN-010 - Supervisor of Shipbuilding, Conversion and Repair Operations Manual
NAVSEA S0600-AA-PRO-230 - Underwater Ship Husbandry Manual, Chapter 23: Submarine Predeployment Noise Inspections
NAVSEA S0600-AA-PRO-280 - Underwater Ship Husbandry Manual, Chapter 28: Pollution Prevention
NAVSEA S5475-AL-PRO-010 - Principles and Procedures for Magnetic Treatment of Ships
NAVSEA S6470-AA-SAF-010 - Gas Free Engineering Manual
NAVSEA S8800-00-GIP-000 - Handbook for Fleet Maintenance Activity Technical Library Personnel

NAVSEA S9008-AA-PRO-010 - Lifeboat, Inflatable, MK6, MK7, and MK8 Inspection, Test and Repair Procedures
NAVSEA S9040-AA-GTP-010 - Shipboard Systems Certification Requirements for Surface Ship Industrial Periods (Non-Nuclear)
NAVSEA S9073-A2-HBK-010 - Resilient Mount Handbook
NAVSEA S9073-A4-SNC-010 - USS LOS ANGELES (SSN 688) Class Acoustic Stealth Manual
NAVSEA S9073-AF-SNC-010(C) - Ship Noise Control
NAVSEA S9073-AW-SNC-010 - Ship Acoustical Surveys for Submarines

NAVSEA S9078-AA-HBK-010 - Distributed Isolation Material (DIM) Mount Design Handbook
NAVSEA S9095-AD-TRQ-010/TSTP - Total Ship Test Program Manual
NAVSEA S9213-33-MMA-000 - Radiological Controls for Ships
NAVSEA S9213-45-MAN-000 - Naval Nuclear Material Management
NAVSEA S9221-C1-GTP-010 - Main Boiler Repair and Overhaul (VOL I)
NAVSEA S9221-C1-GTP-020 - Main Boiler Repair and Overhaul (VOL II)
NAVSEA S9221-D2-MMA-010 - Steam Generating Plant Inspection (Non-Nuclear)
NAVSEA S9223-AF-MMO-010 - Submarine Main Storage Battery Technical Manual
NAVSEA S9233-CJ-HBK-010 - U.S. Navy Diesel Engine Inspectors Handbook, Part 1 (Inspection Procedures)
NAVSEA S9233-CJ-HBK-020 - U.S. Navy Diesel Engine Inspectors Handbook, Part 2 (Technical Information)

NAVSEA S9313-AM-MMO-010 - Lead-Calcium Alloy Acid Type U.S. Submarine Main Storage Battery TRIDENT 1 Type SCC-57
NAVSEA S9475-AC-PRO-010 - Degaussing Forms, Records and Reporting Procedures

NAVSEA S9505-AF-MMA-010 - Submarine Non-Nuclear Piping Systems Test Manual
NAVSEA S9505-AM-GYD-010 - Submarine Fastening Criteria (Non-Nuclear), Description, Design and Maintenance
NAVSEA S9510-AB-ATM-010 - Nuclear Powered Submarine Atmosphere Control Manual, Volume 1
NAVSEA S9510-AB-ATM-020/(C) - Nuclear Powered Submarine Atmosphere Control Manual, Volume 2

NAVSEA S9515-A1-MMO-010/020/030 - Automated Electrolytic Oxygen Generator (AEOG) Treadwell Corporation Preliminary Technical Manual, Volumes 1, 2 and 3
NAVSEA S9515-AA-MMO-010 - Electrolytic Oxygen Generator 6L16; Vol 1
NAVSEA S9515-AA-MMO-021 - Electrolytic Oxygen Generator 6L16; Vol 2, Chapter 5, Part I
NAVSEA S9515-AA-MMO-022 - Electrolytic Oxygen Generator 6L16; Vol 2, Chapter 5, Part II
NAVSEA S9515-AA-MMO-030 - Electrolytic Oxygen Generator 6L16; Vol 3
NAVSEA S9515-AA-MMO-040 - Twelve-Pulse Hexagon Power Supply for Electrolytic Oxygen Generator, 6L16; Installation, Operation & Maintenance
NAVSEA S9515-AL-MMA-010/020 - Integrated Low Pressure Electrolyzer (ILPE) Preliminary Technical Manual, Volumes 1 and 2

NAVSEA S9520-AA-MMA-010 - Repair of Submarine Seawater Ball Valves (Non-Nuclear)
NAVSEA S9522-AA-HBK-010 - Description, Operation and Maintenance Handbook for Magazine Sprinkler Systems
NAVSEA S9553-BS-OMP-010 - Oxygen Generating Plant (OGP) Preliminary Technical Manual, Volumes 1 and 2
NAVSEA S9587-B1-MMA-010 - Catapult Steam Support Systems for CV/CVN Class Ships; Description, Operation and Maintenance
NAVSEA S9592-AP-MMM-A30 - Dry Deck Shelter System SSN688 Class Host Ship Operating and Emergency Procedures, Volume III
NAVSEA S9592-B3-MAN-010 - Dry Deck Shelter Systems Scope of Certification Notebook, Volume I
NAVSEA S9594-AE-GTP-010 - Disabled Submarine/Requirements for Employment of U.S. Navy Submarine Rescue Systems

NAVSEA S9600-AD-GTP-010 - U.S. Navy Shipboard Furniture Catalog
NAVSEA S9810-AA-GTP-010 - Intermediate Maintenance Activity Work Center Requirements Manual

NAVSEA S9AA0-AB-GOS-010 - General Specifications for Overhaul of Surface Ships (GSO) 1983 Edition
NAVSEA S9AA0-AB-GOS-020 - General Specifications for Overhaul of Surface Ships (GSO) 1990 Edition
NAVSEA S9AA0-AB-GOS-030 - General Specifications for Overhaul of Surface Ships (GSO); AEGIS Supplement

NAVSEA SE004-AK-TRS-010 - Standard Maintenance Practices 2M Electronic Assembly Repair
NAVSEA SE400-DA-MMO-010 - Passive Countermeasure System (PCMS) Technical Manual
NAVSEA SG420-AP-MMA-010 - Periodic Testing Arrangements for Ordnance Handling Equipment

NAVSEA SI 0009-60 - Ship Repair Scheduling
NAVSEA SI 009-01 - General Criteria; Accomplish

NAVSEA SI 009-04 - Quality Management System
NAVSEA SI 009-07 - Procedures and Equipment Required for the Prevention of Fire
NAVSEA SI 009-08 - Fire Fighting and Fire Prevention

NAVSEA SI 009-99 - Private Shipyard Contractual Item to Provide Departure Reports

NAVSEA SL720-AA-MAN-010/020 - Fleet Modernization Program (FMP) Management and Operations Manual

NAVSEA SS500-AQ-MMO-010 - Operation and Maintenance Manual for U.S. Navy Two-Man Open Diving Bell
NAVSEA SS521-AA-MAN-010 - U.S. Navy Diving and Manned Hyperbaric Systems Safety Certification Manual
NAVSEA SS521-AG-PRO-010 - U.S. Navy Diving Manual
NAVSEA SS750-AA-MMA-010 - Submarine Rescue Chamber (SRC), Modernized 850 Ft
NAVSEA SS800-AG-MAN-010/P-9290 - System Certification Procedures and Criteria Manual for Deep Submergence Systems

NAVSEA ST000-A-IDX-010 - Test, Measurement and Diagnostic Equipment Index (TMDEI)
NAVSEA ST700-AA-LST-010 - Navy Calibration Activity (NCA) List
NAVSEA ST700-AM-GYD-010 - Metrology and Calibration (METCAL) Laboratory Requirements and Certification Guide
NAVSEA ST700-AM-PRO-010 - Test and Monitoring Systems (TAMS) Program Operations and Procedures

NAVSEA Standard Work Item 077-01 - Hazardous Waste Produced on Naval Vessels; control

NAVSEA T0300-AA-MMI-010 - Commercial Industrial Services (CIS) Manual

NAVSEA T9044-AD-MAN-010 - Requirements Manual for Submarine Fly-By-Wire Ship Control Systems
NAVSEA T9074-AS-GIB-010/271 - Requirements for Nondestructive Testing Methods
NAVSEA T9074-AD-GIB-010/1688 - Requirements for Fabrication, Welding and Inspection of Submarine Structure
NAVSEA T9512-AC-TRQ-010 - SS/SSN/SSBN Submarine Snorkel Systems

NAVSEA TE000-AA-MAN-010/2M - Certification Manual for Miniature/Microminiature (2M)/Module Test and Repair (MTR) Program
NAVSEA TL710-AB-MAN-010 - Depot Modernization Period (DMP) Procedures Manual
NAVSEA TW024-AA-ORD-010 - Unserviceable, Suspended, and Limited Use Ammunition

NAVSEA Technical Specification 9090-100 - Planning Yard (PY) Representatives
NAVSEA Technical Specification 9090-310 - Ship Alteration Accomplishment by Alteration Installation Teams (AIT)

NAVSEA STD DWG 213-4362626 - Lagging and Insulation Schedule for Reactor Plant Systems
NAVSEA STD DWG 407-5287556 - Electronics Material Officer's Guide to Shipboard Electromagnetic Interference Control

NAVSEA STD DWG 709-5549373 - Weapons Handling Equipment SSN 688 Class Test Loads/ Methods and Inspection Procedures
NAVSEA STD DWG 709-5549374 - Weapons Handling Equipment SSBN 726 Class Test Loads/Methods and Inspection Procedures
NAVSEA STD DWG 709-6633924 - Vertical Launch System Weapons Handling Equipment SSN 688 Class Test Loads/Methods and Inspection Procedures
NAVSEA STD DWG 709-6726350 - Weapons Handling Equipment SSN 21 Class Test Loads/Methods and Inspection Procedures

NAVSEA STD DWG 803-5000902 - Safety Net, Deck Edge, Steel Frame and Nets
NAVSEA STD DWG 803-5184097 - Safety Net, Deck Edge, Aluminum Frame and Nylon Nets
NAVSEA STD DWG 803-5959209 - Aircraft Deck Tiedown Fittings

NAVSEA STD DWG 804-1213717 - Vehicle Tiedown Deck Fittings
NAVSEA STD DWG 804-5184163 - Trunk Safety Nets
NAVSEA STD DWG 805-1639000 - Deck Screw Reversible Eyebolts
NAVSEA STD DWG 805-1645271 - Portable Davits
NAVSEA STD DWG 805-1916300 - Aircraft Securing and Engine Run-up Fittings
NAVSEA STD DWG 805-2276338 - Cleats
NAVSEA STD DWG 805-921806 - Installation of Planking on Deck Plating

NAVSEAINST 3151.1 - Diving and Manned Hyperbaric Systems Certification Program
NAVSEAINST 3960.4 - Implementation of Total Ship Test Program for Ship Production
NAVSEAINST 3960.5 - Policy on Ship Testing

NAVSEAINST 4130.9 - Configuration Control Procedures For Preparation of Ordnance Alterations (ORDALTS) to Expendable and Non-Expendable Items
NAVSEAINST 4160.3 - Technical Manual Management Program (TMMP)
NAVSEAINST 4200.17 - Contracting Officer's Representative
NAVSEAINST 4280.2 - Master Agreement for Repair and Alteration of Vessels, Master Ship Repair Agreement (MSRA) and Agreement for Boat Repair (ABR)
NAVSEAINST 4355.7A - Nondestructive Test (NDT) Examiner Qualification and Requalification
NAVSEAINST 4441.2 - Changes to Coordinated Shipboard Allowance List (COSAL); Procedures for

NAVSEAINST 4700.6A - Guarantee Engineer and Industrial Availability Quality Assessment
NAVSEAINST 4700.8A - Policy for Performance of Depot Level Ship Availabilities
NAVSEAINST 4700.17 - Preparation and Review of Trouble Reports

NAVSEAINST 4710.13 - Government Man-day Rates for Use in Private Sector Ship Overhaul and Repair, Planning, Programming and Budgeting
NAVSEAINST 4710.6 - Submarine Advanced Equipment Repair Program (AERP); Assignment of Responsibilities for and Administration of
NAVSEAINST 4710.7 - Standard Cost Estimating Form for Private Sector Overhaul and Repair Availabilities
NAVSEAINST 4710.8A - Cost and Performance Reporting for CNO Scheduled Ship Maintenance Availabilities
NAVSEAINST 4710.9 - Requirements for Turnover of Planning Products and Specification Package

NAVSEAINST 4720.11 - Shipboard Installation and Modifications Performed by Alteration Installation Teams
NAVSEAINST 4720.14 - Temporary Alterations to Active Fleet Submarines; Control of
NAVSEAINST 4720.15 - Machinery Alterations on HM&E Equipment and Systems
NAVSEAINST 4720.23 - Deep Submergence Systems Temporary Modifications

NAVSEAINST 4730.2 - Shipyard Inspection and Required Conditions of Propulsion Plant Systems (Non-Nuclear) for Nuclear Powered Surface Ships
NAVSEAINST 4734.1 - NAVSEA Test, Measurement, and Diagnostic Equipment (TMDE) and Calibration Programs

NAVSEAINST 4790.8 - Ship's Maintenance and Material Management (3-M) Manual
NAVSEAINST 4790.14 - Ship Departure and Alteration Completion Reports
NAVSEAINST 4790.16 - SSBN Extended Operating Cycle (EOC) Program; Policy, Procedures and Responsibilities for
NAVSEAINST 4790.17 - Fleet Test and Repair of Shipboard Electronic Equipment
NAVSEAINST 4790.19 - Submarine Engineered Operating Cycle (SEOC) Program

NAVSEAINST 5370.1 - Standards of Conduct and Statements of Affiliations and Financial Interests
NAVSEAINST 5400.95 - Waterfront Engineering and Technical Authority Policy
NAVSEAINST C5511.32 - Safeguarding of Naval Nuclear Propulsion Information

NAVSEAINST 5730.1 - Legislative and Congressional Matters

NAVSEAINST 7500.1 - Audits of NAVSEA by External Audit Organizations
NAVSEAINST 7670.1 - Navy Industrial Fund (NIF) Financial Management Systems and Procedures Manual

NAVSEAINST 9070.1 - Standard Specification for Ship Repair and Alteration Committee
NAVSEAINST C9073.2 - Acoustical Survey of Submarines
NAVSEAINST C9094.2 - Submarine Valve Operation Requirements for Builders and Post-Overhaul Sea Trial Test Dives
NAVSEAINST C9096.2 - Weight and Stability Requirements for Active Submarines

NAVSEAINST 9210.31 - Government Procurement Quality Source Inspection Actions for Shipyard Procedure of Material Under NAVSEA 08 Cognizance
NAVSEAINST C9210.4 - Changes, Repairs and Maintenance to Nuclear Powered Ships
NAVSEAINST 9210.14 - Changes to Submarine Tenders and Destroyer Tenders with Nuclear Support Facilities, Requirements Concerning
NAVSEAINST 9210.23 - Requirements for Naval Nuclear Work at Naval Activities and Private Shipyards - Certification of Work Accomplishment and Data Retention of Associated Records and Retention of Design Records
NAVSEAINST 9210.30 - Procedures for Administration of Nuclear Reactor Plant Preventive Maintenance and Tender Nuclear Support Facilities Preventive Maintenance on Ships
NAVSEAINST 9210.31 - Government Procurement Quality Source Inspection Actions for Shipyard Procedure of Material Under NAVSEA 08 Cognizance
NAVSEAINST C9210.34 - All Nuclear Projects - Material Identification and Control Requirements for Naval Nuclear Reactor Plant Piping Systems
NAVSEAINST 9210.36 - Steam Plant Cleanliness Control
NAVSEAINST 9210.39 - Submarine Nuclear Propulsion Plant Operator Welders: Procedures for Maintenance of Qualification
NAVSEAINST 9210.41 - All Naval Nuclear Propulsion Plants - Use of Standard Lubricants and Penetrating Fluid; Requirements for
NAVSEAINST 9210.45 - Reactor Plant Welding and Nondestructive Testing Personnel

NAVSEAINST 9304.1C - Shipboard Electrical Cable and Cableway Inspection and Reporting Procedures
NAVSEAINST 9593.1 - Certification Program for Sewage Marine Sanitation Devices in U.S. Navy Surface Ships and Craft

NAVSO P-1000 - Navy Comptroller Manual
NAVSO P-3006 - Financial Management of Resources Operations and Maintenance, (Shore Activities)
NAVSO P-3635 - Federal Acquisition Regulation, Section 13, Chapter 312
NAVSO P-3013-2 - Financial Management of Resources Operating Forces Procedures

NAVSUP 484 - Supply Afloat Fleet and Field Packaging Procedures
NAVSUP 5009 (DLAM 4215.1) - Management of Defense-Owned Industrial Plant Equipment
NAVSUP Publication 485 - Afloat Supply Procedures
NAVSUP P2003 - Navy Stock List of Forms and Publications
NAVSUPPUB 437 - Material - Required Delivery Date Processing
NAVSUP S6161-Q5-CAT-010 - Ship Food Service Equipment Catalog

NMCARS 5201 - Federal Acquisition Regulations System
NMCARS 5219.2 - Special Contracting Policy
NMCARS 5219.7 - The Small Business Subcontracting Program

NMCARS 5233 - Protests, Disputes and Appeals
NMCARS 5233.9000 - Documentation of Significant Contract Events

NMCARS 5242 - Contract Administration and Audit Services
NMCARS 5245.302 - Providing Facilities
NMCARS 5245.505 - Records and Reports of Government Property

NMCARS Part 5245 - Government Property

NSTR-99 - Qualification Examination Requirements for Nondestructive Test Personnel

NSWC Philadelphia ltr 9320, Ser 934/010 dated 19 Mar 2001, titled Shipboard Circuit Breaker Maintenance and Overhaul Policy
NSWCCD-71-TR-2001/020 - February 2001 USS SEAWOLF (SSN 21) Class Acoustic Stealth Manual

NSWCCD-SSES 933-GGTB 4 - General Gas Turbine Bulletin Number 4 (Marine Gas Turbine Operating Data Report)
NSWCCD-SSES 9332-GGTB 11 - General Gas Turbine Bulletin Number 11 (Gas Turbine Fleet Representatives)
NSWCCD-SSES 9352-GGTB 0 - General Gas Turbine Bulletin Number 0 (Technical Directive Zero Index)

NUSC 551E - Handbook for Submarine Antenna Systems

NWP 1-03.1 - Naval Warfare Publication Operational Report

Occupational Safety and Health Act of 1970

ONRINST 5400.1 - Obtaining Waivers Under Office of Naval Research Designation as a Reinvention Laboratory

OPNAV 43P6 - MEASURE Users Manual

OPNAVINST 3000.12 - Operational Availability of Equipments and Weapons Systems
OPNAVINST C3000.5 - Operation of Naval Nuclear Powered Ships
OPNAVINST 3120.28 - Certification of the Aviation Capability of Naval Ships Operating Aircraft
OPNAVINST 3120.32 - Standard Organization and Regulations of the U.S. Navy
OPNAVINST 3120.33 - Submarine Extended Operating Cycle (SEOC) Program
OPNAVINST 3150.27 - Navy Diving Program
OPNAVINST 3540.3 - Naval Nuclear Propulsion Examining Boards
OPNAVINST 3540.4 - Propulsion Examining Boards for Conventionally Powered Ships
OPNAVINST 3960.16 - Navy Test, Measurement, and Diagnostic Equipment (TMDE) Automatic Test Systems (ATS), and Metrology and Calibration (METCAL)

OPNAVINST 4000.57 - Logistic Support of the TRIDENT and POSEIDON Fleet Ballistic Missile (FBM) Systems
OPNAVINST 4100.11 - Navy Energy Usage Reporting System (NEURS)
OPNAVINST 4614.1 - Uniform Material Movement and Issue Priority System
OPNAVINST 4700.7 - Maintenance Policy for U.S. Naval Ships
OPNAVINST 4700.8 - Trials, Acceptance, Commissioning, Fitting Out, Shakedown and Post Shakedown Availability of U.S. Naval Ships Undergoing Construction or Conversion
OPNAVINST 4700.38 - Berthing and Messing During CNO Scheduled Maintenance Availabilities
OPNAVINST 4720.2 - Fleet Modernization Program (FMP); Policy For
OPNAVINST 4730.5 - Material Inspection of Ships Conducted by the Board of Inspection and Survey
OPNAVINST 4730.7 - Material Inspection of Submarines Conducted by the Board of Inspection and Survey
OPNAVINST 4780.6 - Policy for Administering Service Craft and Boats in the U.S. Navy
OPNAVINST 4790.2 - The Naval Aviation Maintenance Program (NAMP)
OPNAVINST 4790.4 - Ships' Maintenance and Material Management (3-M) Manual
OPNAVINST 4790.15 - Aircraft Launch and Recovery Equipment Maintenance Program (ALREMP)

OPNAVINST 5090.1 - Environmental and Natural Resources Program Manual
OPNAVINST 5100.19 - Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat
OPNAVINST 5100.20 - Shipboard Heat Stress Control and Personnel Protection

OPNAVINST 5100.23 - Navy Occupational Safety and Health (NAVOSH) Program Manual
OPNAVINST 5420.53 - General Precept for the Conduct of Trials and Material Inspections of Ships and Service Craft
OPNAVINST C5510.93 - Navy Implementation of National Policy on Control of Compromising Emanations

OPNAVINST C8950.2 - Magnetic Silencing

OPNAVINST 9070.2 - Signature Control Policy for Ships and Craft of the U.S. Navy
OPNAVINST 9080.3 - Procedures for Tests and Trials of Navy Nuclear Powered Ships Under Construction, Modernization, Conversion, Refueling and Overhaul
OPNAVINST 9110.1 - Policy Concerning Submarine Test and Operating Depths
OPNAVINST C9210.2 - Engineering Department Manual for Naval Nuclear Propulsion Plants
OPNAVINST 9220.2 - U.S. Navy Boiler Water and Feedwater Test and Treatment Program (Nuclear Excluded)
OPNAVINST 9220.3 - Propulsion and Auxiliary Plant Inspection and Inspector Certification Program
OPNAVINST 9221.1 - U.S. Navy Steam Generating Plant Inspection and Inspector Training and Certification Program
OPNAVINST 9233.1 - U.S. Navy Diesel Inspection and Inspector Training and Certification Program
OPNAVINST 9640.1 - Shipboard Habitability Program

OPNAVNOTE 4700 - Representative Intervals, Durations, Maintenance Cycles, and Repair Mandays for Depot Level Maintenance Availabilities of U.S. Navy Ships
OPNAVNOTE 4710 - Fleet Depot Maintenance Schedule
OPNAVNOTE 4780 - Service Craft and Boats Accounting Report (SABAR)

OSHA 29 CFR 1915 - Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment

Public Law 97-114 - DoD Appropriations Act

S0005-AA-GYD-030 - Guide for User Maintenance of NAVSEA Technical Manuals; NAVSEA Technical Manual Management Program
S9040-AC-IDX-010 - Ships 3-M Reference Information CD
S0400-AD-URM-010/TUM - Tag Out User's Manual

SECNAV M-5210.1 - Records Management Manual
SECNAVINST 4855.3A - Product Data Reporting and Evaluation Program (PDREP)
SECNAVINST 5400.15 - Department of the Navy Research, Development and Acquisition, and Associated Life Cycle Management Responsibilities
SECNAVINST 5430.92 - Assignment of Responsibilities to Counteract Fraud, Waste and Related Improprieties within the Department of the Navy
SECNAVINST 5510.30 - Department of the Navy Personnel Security Program
SECNAVINST 5510.36 - Department of the Navy Information Security Program Regulation
SL720-AA-MAN-010 - Fleet Modernization Program (FMP) Management and Operations Manual

SOBT Video SVT-GT-9336 - Submarine Preservation

SPCCINST 4440.376 - Supply Policies and Procedures for Naval Reactor Plant Parts and Material
SPCCINST 4440.482 - Pipe, Fittings, Fasteners
SPCCINST 4441.170 - COSAL Use and Maintenance Manual

SSN21-081-PMS350L-035 - Rotatable Pool Management Plan for the SEAWOLF Class SSN

SSPINST 4720.1 - Policies and Procedures for Alteration of Strategic Weapon System Equipment
SSPINST 5600.11 - Preventive Maintenance Management Program for Strategic Weapon Systems Equipment and Associated Material
SSPINST 8950.2 - Procedure for Fleet Ballistic Missile (FBM)/Strategic Weapons System (SWS) Components During Flash-Deperm Treatment of an SSBN

STARS Users Manual (FMSO P-104)

SUBMEPP Technical Specification 4730-012-0624 - Submarine Electromagnetic Compatibility (EMC) Survey Manual
SUBMEPP Test Procedure 441-5-7001 - SSN 688 Class Submarine, Systems EMI Measurements, Dockside

SWT 077-01 - Hazardous Waste Produced on Naval Vessels; control
SWT 857-01 - Temporary Galley and Messing Facilities; provide
SWT 857-011 - Temporary Off Ship Berthing Equivalent to BOQ/BEQ; provide

The North American Industry Classification System (NAICS)

Title 10 U.S. Code

TL130-A1-HBK-010 - MSC Procedures Manual - Maintenance Support Center Library Procedures Manual

TMIN SL700-AB-GYD-010 - Pictorial Guide for Painting Ship's Interiors

UIPI 5050-904 - Mechanical Joint Makeup and Fastener Installation for Assembly of Piping Systems, Components and Foundations:  Including Gaskets, Packing, Seals, Lubricants, Sealants (Non-nuclear)

U.S Navy Regulations Article 1115

# APPENDIX C

## RESPONSIBILITIES

### Fleet Commander

| Section | Area of Responsibility | Responsibility |
|---|---|---|
| I-FWD-7.3.1 | Life Cycle Maintenance Process for JFMM | • Establish a JFMM Board of Directors (BOD)<br>• Provide final approval and promulgation letter<br>• Provide funding for life cycle maintenance<br>• Approve all Advanced Change Notices (ACN)<br>• Convene periodic JFMM BOD review meetings<br>• Designate Atlantic and Pacific Fleet JFMM Coordinators |
| II-I-3.3.6.1 | Maintenance Policies and Procedures | • Maintain availability intervals and cycles<br>• Inform of changes affecting ship manning requirements<br>• Coordinate as applicable to accomplish availability planning<br>• Implement Docking Officer Qualifications and Certifications<br>• Plan and monitor availability execution<br>• Plan and provide berthing, messing, etc., if necessary |
| II-I-3.6.1.1 | Availability Execution | • Monitor to achieve balance of cost and schedule<br>• Ensure testing of applicable systems is conducted prior to availability completion<br>• Provide berthing, messing, etc., if necessary |
| IV-3.3.3 | Boiler Inspections | • Identify and designate inspection responsibilities<br>• Ensure inspection report is recorded and updated in BIRMIS<br>• Schedule and coordinate inspections to avoid unnecessary opening of boilers<br>• Ensure availability of "school ships"<br>• Suspension of SGPIs who fail to comply with requirements of certification<br>• Administer and control TYCOM pre-test program<br>• Host semi-annual SGPI seminars<br>• Provide qualified SGPI when requested |
| V-I-1.2.1 | Organizational Responsibilities | • Promulgate QA Program through guidelines of Volume V of JFMM<br>• Promote use of Volume V of JFMM by TYCOMs<br>• Jointly authorize changes to Volume V of JFMM<br>• Review TYCOM QA program by annual conference<br>• Assessments of FMAs and RMCs occur in accordance with Volume IV, Chapter 2, paragraph 2.1.1 |

| | | |
|---|---|---|
| VI-6.4.1 | Industrial Plant Equipment | • Review all PEPs<br>• Prioritize and assign project number to PEPs<br>• Forward information regarding PEPs to submitting activities |
| VI-8.2.1 | Miniature/Micro-miniature Electronic Repair Program | • Operationally administer 2M and module test repair programs<br>• Inspect and certify 2M repair facilities and technicians<br>• Ensure all 2M maintenance actions are documented |
| VI-9.2.1 | Metrology and Calibration Program | • Operationally administer METCAL program<br>• Ensure calibration performed at lowest level practical<br>• Monitor effectiveness of programs<br>• Chair working groups and committees<br>• (Surface) Establish SISCAL program<br>• Provide funding for calibration and testing of TAMS (exceptions) |

**Type Commander (TYCOM)**

| Section | Area of Responsibility | Responsibility |
|---|---|---|
| I-FWD-7.3.2 | Life Cycle Maintenance Process for JFMM | • Review and evaluate JFMM changes (21 days)<br>• Notify Fleet Commanders of changes which affect ship and personnel safety<br>• Review ACNs and forward to Fleet Commanders<br>• Review and endorse all change packages<br>• Designate representatives of JFMM BOD<br>• Identify changes to JFMM distribution list |
| II-I-3.3.6.2 | Maintenance Policies and Procedures | • Coordinate scheduling of availabilities with Fleet Commander<br>• Initiate required budgetary actions<br>• Coordinate work assignments between FMA and industrial activity<br>• Seek resolution of technical problems and coordinate requirements for modernization and repair<br>• Authorize AWPs prepared by SUBMEPP<br>• (Submarines) Coordinate interface 3-M system with PMR scheduling and feedback<br>• Designate representative for WDC/PRC and pre-arrival conference<br>• Recommend to CNO any high priority fleet modernization<br>• (Submarines) Send a Sea Trials Support Services message, if required<br>• (Submarines) For minor maintenance availabilities, send a Waiver of Escort Requirements message when requested by the ISIC<br>• Conduct QA audit of Ship's Force and FMA CWPs<br>• (Submarines) For major availabilities send message for Fast Cruise, Sea Trials and Unrestricted Operations<br>• (Submarines) For availabilities less than six months issue required message for Sea Trials |
| II-I-3.3.6.3 | Maintenance Policies and Procedures | • Assist TYCOM and SUBMEPP in preparation of AWP<br>• Monitor corrective maintenance action taken<br>• Schedule and conduct inspections of Forces Afloat<br>• Monitor progress of CNO maintenance availabilities<br>• Ensure that a MOA is executed prior to availability start |

| | | |
|---|---|---|
| II-I-3.6.8.4.1c | Responsibilities for trials and inspections | • Schedule Fleet Commander PORSE<br>• Provide Fast Cruise, Sea Trial and completion prerequisites to the ship<br>• Assign material representatives to embark for trials<br>• Inform CNO and Fleet Commander of trials<br>• Provide escorts as required<br>• Conduct ship salvage inspection<br>• Approve Sea Trial Agenda<br>• Report crew readiness and request authorization for critical ops<br>• Report status of SUBSAFE boundary conditions and authorization of Sea Trials<br>• Report status of SUBSAFE certification and authorize URO to test depth |
| II-I-4.3.5 | Maintenance Policies and Procedures | • Coordinate scheduling of FMAs<br>• Coordinate work loading of FMAs<br>• Initiate budgetary actions for funding FMAVs<br>• Alterations identified by priority based on material availability<br>• Identify routine packages<br>• Screen and forward prioritized work packages<br>• Review results of monitoring inspections and testing<br>• Identify support requirements<br>• Identify special evolutions<br>• Conduct WDC/PRC<br>• Conduct PAC<br>• Issue availability planning message |
| II-I-4.7.1.1 | Restricted Availability/Restricted Availability Docking | • Screen work candidate and determine need for RAV/RAD<br>• Ensure MOA is issued and agreed<br>• Review and fund RAV/RAD subject to considerations |
| II-I-4.8.1 | Technical Availabilities | • Same as RAV/RAD |
| II-I-4.9.1 | Voyage Repair Availability | • Screen work candidate and determine need for Voyage Repair |
| IV-2.4.1 | FMA Assessment | • Promulgate assessment schedule<br>• Forward precepts letter or message to FMA's Commanding Officer<br>• Conduct in-brief and out-brief with designated personnel<br>• Issue assessment report |
| IV-5.3.1 | Marine Sanitation Devices | • Ensure surface ships participate in pollution abatement program<br>• Ensure MSD systems are properly installed, operated and maintained |
| IV-16.2.3 | Aircraft Launch and Recovery Systems | • Provide ALRE Maintenance Management Teams to conduct assist visits and annual audits of all units |

| | | |
|---|---|---|
| IV-17.3.3 | Steam Catapult Inspection | • Provide or arrange for certified SGPIs to perform inspections<br>• Coordinate inspections of all catapult accumulators and support systems<br>• Assist COs in arranging for corrective action of deficient items<br>• Review the SCIRMIS |
| V-I-1.3.1 | Organizational Responsibilities | • (Submarines) Obtain NAVSEA approval for exception to REC requirements<br>• Administer a departure from specification system<br>• Perform assessment of nuclear FMAs annually<br>• (Submarines) Perform assessment of ISICs annually<br>• Perform assessment of FMA's non-nuclear programs annually<br>• Perform random, unannounced assessments and monitor visits<br>• Review and evaluate FMA and ISIC reports of corrective actions<br>• (Submarines) Maintain system to provide SUBSAFE certification<br>• Provide annual self evaluation of QA program<br>• Evaluate and analyze proposed changes to this volume<br>• (Submarines) Perform annual SUBSAFE/Scope of Certification awareness training<br>• (Submarines) Develop and implement necessary instructions and procedures to meet requirements of reference (a)<br>• (Submarines) Maintain FBW SCS certification |
| V-III-1.2.1 | Organizational Responsibilities | • Obtain SCA approval for REC requirements in SOC systems<br>• Administer DFS system<br>• Perform assessment of ISICs responsible for DSSs annually<br>• Perform random, unannounced Sustaining Activity Quality Assurance assessments<br>• Review and evaluate Sustaining Activity reports of corrective action<br>• Recommend to SCA suspension and reinstatement of DSS certification<br>• Perform annual SOC awareness training |

| | | |
|---|---|---|
| VI-4.8a | Shipboard Electromagnetic Compatibility | • Coordinate to identify, solve and correct operational EMI deficiencies<br>• Arrange for SEMCIP services when required<br>• Review and authorize documents prepared by technical agencies<br>• Evaluate comments and recommendations regarding EMI reduction<br>• Ensure FMA and RMC have technicians to support EMI surveys |
| VI-5.6.1 | Common Assessment Program | • Schedule visits<br>• Direct participants to assist in visit execution<br>• Provide funding for execution and support<br>• Conduct periodic program reviews<br>• Establish standards to ensure program improvement |
| VI-6.4.2 | Industrial Plant Equipment | • Review PEPs for technical accuracy and completeness<br>• Review PEPs for conflicts with other maintenance actions<br>• Prioritize PEPs and evaluate each project to ensure compatibility with capability requirements and site configuration<br>• Forward approved requests and return unapproved requests<br>• Schedule annual assessment and coordinate repairs |
| VI-7.2.1 | Board of Inspection and Survey Material Inspections Policy | • Act as cognizant authority for conduct of INSURV inspections<br>• Nominate active ships for UMIs by the INSURV board<br>• Schedule inspections/assessments within 60 days of UMI |
| VI-8.2.2 | Miniature/Micro-miniature Electronic Repair Program | • Coordinate and manage 2M program<br>• Monitor effectiveness of 2M program<br>• Implement progressive repair procedures<br>• Coordinate logistic support, outfitting requirements and deployment priorities<br>• Monitor 2M certification status<br>• Schedule 2M certifications in conjunction with CSRR<br>• (Aircraft Carriers) Conduct MTRF in accordance with reference (e) |

| | | |
|---|---|---|
| VI-9.2.2 | Metrology and Calibration Program | • Assign a METCAL program single point of contact<br>• Submit TAMS allowance change requests to TAMS allowance manager<br>• Redistribute excess TAMS<br>• Provide properly trained personnel to authorized calibration activities<br>• Periodically perform Quality Assurance reviews of laboratories<br>• Manage calibration overflow program<br>• Ensure Regional Loan Pools are established<br>• Evaluate FMA/Regional Calibration Laboratories<br>• Coordinate for SCAT assignments and SPETERL revisions<br>• Assign Fleet Commander representatives |
| VI-11.5.1 | Maintenance, Repair and Overhaul of Service Craft, Landing Craft and Small Boats | • Coordinate all aspects of advanced planning<br>• Authorize all new industrial work items<br>• Authorize growth in existing industrial work item<br>• Provide funding for authorized work<br>• Monitor and approve changes in established milestones<br>• Direct action when quality or completeness of industrial activity work is in question |
| VI-12.3.2.1 | Degaussing (ships with installed degaussing systems) | • Monitor degaussing readiness of assigned ships<br>• Ensure ships "check range" as required |
| VI-16.2.2.1.3 | Habitability Improvement/ Self Help Responsibilities | • Develop Five Year Plan, establish priorities for attainment of standards<br>• Plan, schedule, coordinate and monitor projects<br>• Authorize, budget and fund habitability program |
| VI-19.2.1.1 | Ship Maintenance and Material Management | • Maintenance Data System<br>• Planned Maintenance System<br>• Alteration Management System<br>• (Submarines) TFBR History/Tracking Program<br>• Maintenance Resource Management System<br>• PMR Scheduling System<br>• CSMP<br>• SNAP I/II/III Organizational Maintenance Management System<br>• TRIDENT Logistical Data System/MRMS Interface<br>• Master Job Catalog |
| VI-24.7.1 | Periodic Maintenance Requirement Program | • Provide overall scheduling system for accomplishment of PMRs<br>• Perform periodic audits of ISICs and FMAs<br>• Provide guidance to ISICs when deviation is required |

| | | |
|---|---|---|
| VI-25.3.1 | Unrestricted Operations | • Perform periodic audits of ISICs and FMAs<br>• Provide guidance to ISICs when deviating from schedules due to DFS requests |
| VI-27.3.1 | Scheduled Preservation Upkeep Coordinated Effort | • Administer the SPRUCE program<br>• Maintain and distribute file of SPRUCE lessons learned |
| VI-31.3.4 | Surface Ship Maintenance Placement and Oversight Business Rules | • Establish force maintenance policies and directives<br>• Provide list of Fleet Alteration requirements for execution year as input to RMC business plan<br>• Issue spending controls to RMC and update on quarterly basis<br>• Has authority to recapture spending controls previously issued, as a last resort<br>• Funds will be provided early enough to avoid premiums<br>• If not funding an availability, must approve removal of funds before RMC initiates this action<br>• Evaluate Maintenance and Modernization Business Plan adjustment requests<br>• Evaluate RMCs end of quarter financial status report |
| VI-37.5c | Regional Maintenance Center Passive Countermeasure System Support Requirements | • Coordinate in identifying, solving and correcting PCMS deficiencies<br>• Arrange for PCMS maintenance services when required<br>• Review and authorize documents that contain procedures relative to PCMS<br>• Evaluate comments and recommendations regarding Fleet PCMS program |
| VI-38.3.1 | DSS Hull Integrity Procedures | • Perform periodic audits of ISICs and FMAs<br>• Provide guidance to ISICs for DFS request and resolution |
| VI-40.5.1 | (SUBS) Messages | • Review (SUBS) message traffic<br>• Assist and support the ISIC<br>• Track (SUBS) messages initiated by the TYCOM department generating the message<br>• Track (SUBS) messages generated by submarines under its cognizance |

**Immediate Superior in Command (ISIC)**

| Section | Area of Responsibility | Responsibility |
|---|---|---|
| II-I-3.3.6.3 | Maintenance Policies and Procedures | • Assist TYCOM and SUBMEPP in preparation of AWP<br>• Monitor corrective maintenance action taken<br>• Schedule and conduct inspections of Forces Afloat<br>• Monitor progress of CNO maintenance availabilities<br>• Ensure that a MOA is executed prior to availability start |
| II-I-3.3.6.3b (Submarines Only) | Maintenance Policies and Procedures | • Ensure timely accomplishment and reporting of PMR Maintenance<br>• Ensure industrial activities and ships maintain current copies of Maintenance Standards, PMR schedules and inventories<br>• Review Ship's Force submitted deferrals for industrial activity assistance<br>• Ensure industrial activities provide 3-M and MS feedback for analysis by SUBMEPP<br>• Request SUBMEPP assistance as necessary for assistance with PMR scheduling and software<br>• Report to SUBMEPP inability to perform PMRs<br>• Designate Availability Coordinator<br>• Provide updated Sea Trials status to COMSUBDEVRON FIVE<br>• For minor CNO maintenance availabilities issue required messages as applicable |
| II-I-4.3.5 | Maintenance Policies and Procedures for TYCOM scheduled availabilities | • Coordinate scheduling of FMAs<br>• Coordinate work loading of FMAs<br>• Initiate budgetary actions for funding FMAVs<br>• Alterations identified by priority based on material availability<br>• Identify routine packages<br>• Screen and forward prioritized work packages<br>• Review results of monitoring inspections and testing<br>• Identify support requirements<br>• Identify special evolutions<br>• Conduct WDC/PRC<br>• Conduct PAC<br>• Issue availability planning message |

| | | |
|---|---|---|
| II-I-4.10.1 | Interim Drydocking/Pre-Inactivation Restricted Availabilities (Submarines) | • Authorize new items and growth industrial work items<br>• Monitor and approve changes in established milestones<br>• Issue direction when Industrial Activity work is in question<br>• Notify TYCOM when Ship's Force work can not be completed<br>• Periodically monitor and assess shipboard conditions<br>• ISIC QA officer will conduct audit of Ship's Force Re-entry Control and Departure from Specification Records<br>• Conduct material inspection prior to Fast Cruise |
| IV-3.3.6 | Boiler Inspections | • Maintain overall cognizance of SGPI Program<br>• Schedule routine inspections<br>• Arrange for availability of SGPI during COI/CAI<br>• Monitor follow-up action<br>• Assist COs in arranging for corrective action when requested |
| IV-14.2.3 | Magazine Sprinkler Inspection Requirements | • Ensure scheduling of Shipboard Explosive Safety Inspection<br>• Follow-up on all discrepancies posted by verification activity<br>• Act as sole grantor of all magazine sprinkler systems re-certification |
| IV-18.3.1 | Submarine Salvage Inspection | • Submarine Salvage Inspection |
| IV-21.2.1 | Submarine Oxygen Generating Plants | • Ensure assigned units are in compliance with paragraph 21.1.1<br>• Conduct periodic inspections and audits<br>• Ensure PMT inspectors perform material inspections of the ship's EOGs |

| | | |
|---|---|---|
| V-I-1.4.1 | Organizational Responsibilities | • Organize and implement a QA program<br>• (Submarines) Organize and implement program to verify performance of required maintenance<br>• Organize and implement a work request screening process<br>• (Submarines) Review Ship's Force Controlled Work Packages<br>• (Submarines) Ensure ship's certification continuity report is received before ship is underway<br>• Review and sign MOA<br>• (Submarines) Administer a DFS system<br>• Monitor QA program and procedures<br>• Schedule and conduct QA program assessment<br>• Review and endorse TYCOM audit report<br>• Conduct periodic monitoring of Ship's Force work and QA program<br>• (Submarines) Perform annual SUBSAFE/SOC/FBW SCS awareness training<br>• (Submarines) Conduct oral interview with Ship's Force relieving QAO<br>• Ensure fact-finding critiques are held to establish causes of errors during maintenance |
| V-III-1.2.2 | Organizational Responsibilities | • Maintain certification on assigned DSS<br>• Ensure Sustaining Activities perform internal surveys<br>• Ensure Sustaining Activities process requests for sustaining certification<br>• Perform QA assessments associated with the DSS and host submarines<br>• Route appropriate DSS SOC DFSs for approval<br>• Conduct vertical audit of assigned DSS unit's OQE<br>• Conduct a sampling audit of the OQE<br>• Perform annual SOC awareness training |

| | | |
|---|---|---|
| VI-3.2.1 | Submarine Fleet Modernization Program | • Inform FMA of upcoming availabilities<br>• Monitor FMA modernization and availability planning<br>• Establish installation priorities<br>• Ensure no action is taken to accomplish alterations which are not authorized for accomplishment<br>• Maintain a file of alteration briefs<br>• Assist units in preparation of alteration requests<br>• Identify deficiencies and changes to hull applicability of alterations<br>• Ensure only TYCOM authorized or partially completed alterations appear on CSMP<br>• Ensure MJC contains all alterations authorized for completion<br>• Ensure appropriate reports are collected prior to end of availability and critical operations<br>• Ensure RPCCRs are distributed to ship's CO<br>• Schedule required ship checks<br>• Ensure situational alterations are accomplished<br>• Inform ships of alterations planned during an availability<br>• Review reports of alteration completions during CNO availabilities<br>• Ensure Forces Afloat alterations are completed to maximum extent prior to CNO availability<br>• For deploying units, provide to FMA a list of alterations to be completed during deployment upkeep<br>• Allocate portion of FMA ROV for procuring alteration material for installation by Forces Afloat<br>• Before installation begins, ensure MOA is in place for any alteration accomplished by industrial activity<br>• Ensure installation of TEMPALTs/OPALTs is in accordance with reference (e)<br>• Ensure alteration by AIT in accordance with reference (f)<br>• Ensure FMA obtains TYKITs RFI<br>• Ensure no action taken to obtain material for alterations designated as TYKITs<br>• Ensure category "A" A&I's completed within 12 months<br>• Maintain a current status of alterations<br>• Prepare and forward TAMs<br>• Ensure FBW SCS alterations in accordance with reference (g) |
| VI-5.6.2 | Common Assessment Program | • Submit recommendations to TYCOM to support scheduling |

| | | |
|---|---|---|
| VI-7.2.2 | Board of Inspection and Survey Material Inspections Policy | • Schedule a Navy Safety Center Safety Survey<br>• Monitor ship's preparation for UMI<br>• Ensure post inspection reporting procedures followed<br>• Attend post-INSURV inspection critiques<br>• Ensure subordinate commands are prepared for scheduled INSURV<br>• Ensure ship is prepared to discuss deficiencies not corrected and items removed from CSMP<br>• Provide ship original and three copies of AWR and CSMP<br>• Monitor reporting and correction of UMI deficiencies |
| VI-8.2.2 | Miniature/Micro-miniature Electronic Repair Program | • Coordinate and manage 2M program<br>• Monitor effectiveness of 2M program<br>• Implement progressive repair procedures<br>• Coordinate logistic support, outfitting requirements and deployment priorities<br>• Monitor 2M certification status<br>• Schedule 2M certifications in conjunction with CSRR<br>• (Aircraft Carriers) Conduct MTRF in accordance with reference (e) |
| VI-9.2.4 | Metrology and Calibration Program | • Monitor calibration readiness status within their respective organizations<br>• Monitor effectiveness of electronic and SGCP FCAs<br>• Ensure that ships with FCAs extend their service to other ships in company<br>• Ensure each ship has necessary standards, documentation and trained personnel to maintain certification<br>• Coordinate resolution of calibration problems<br>• (Submarines) ensure each activity supports PMR/Maintenance Resource Management System scheduling program<br>• (Surface and Air) Calibration Readiness Goal is 85% |
| VI-11.5.2 | Maintenance, Repair and Overhaul of Service Craft, Landing Craft and Small Boats | • Review overhaul progress reports<br>• Review Ship's Force and FMA concurrent work<br>• Ensure directives are followed concerning safety<br>• Attend Sea Trial and overhaul completion review conferences<br>• Assist in all aspects of planning and monitoring of industrial availabilities |
| VI-12.3.2.1 | Degaussing (ships with installed degaussing systems) | • Monitor degaussing readiness of assigned ships<br>• Ensure ships "check range" as required |
| VI-12.4.1.1 | Submarines Without Installed Degaussing Systems | • Ensure ships "check range" as required<br>• Schedule ships with unsat magnetic signatures for flash deperming |

| | | |
|---|---|---|
| VI-19.2.1.3 | Ship Maintenance and Material Management | • Designate 3M Officer<br>• Centralize maintenance management programs in the MDCO |
| VI-23.3.1 | Submarine Noise Reduction | • Assign a Staff Noise Reduction Officer<br>• Oversee and supervise Noise Reduction Program within Squadron<br>• Submit requests for Beartrap Acoustic Radiated Trials<br>• Schedule acoustic surveys during operating cycles of submarines<br>• Recommend and/or authorize corrective actions<br>• Review records, results, procedures and equipment during material readiness inspections<br>• Schedule divers for underwater hull and propeller surveys<br>• Report propeller replacements<br>• Ensure support personnel trained in noise reduction |
| VI-24.7.3 | Periodic Maintenance Requirement Program | • Schedule and ensure completion of PMR work within planned periodicity in the CMP<br>• Calldown all PMRs planned for accomplishment into the CSMP by availability dates<br>• Conduct periodic audits of assigned FMAs<br>• Maintain auditable records of PMR accomplishment for each submarine<br>• Maintain automated database of Logistic Data System, Planned/Refit Maintenance Management System<br>• Notify SUBMEPP representative at TYCOM of non-receipt of quarterly PMR Inventories and schedules<br>• Contact SUBMEPP if a PMR has been completed prior to receipt of inventories and schedules<br>• Keep local scheduling system correct and accurate<br>• Ensure PMRs not completed by SUBMEPP due date are replanned<br>• Ensure all "I"-level PMRs are scheduled for accomplishment by FMA prior to end of availability<br>• Review completed AWRs prior to closeout<br>• Transfer PMRs to other FMAs as necessary<br>• Non-scheduled repairs of PMR components<br>• Provide assigned ship's training in TYCOM PMR scheduling system |

| | | |
|---|---|---|
| VI-25.3.3 | Unrestricted Operations | • Maintain auditable records of URO MRC accomplishment<br>• Perform periodic audits of assigned FMAs<br>• Maintain a file of current URO MRC inventories and schedules as provided by SUBMEPP<br>• Coordinate accomplishment of URO MRCs in accordance with SUBMEPP provided PMR inventories and schedules<br>• Control input of SUBMEPP scheduling file<br>• Ensure all URO MRC requirements are in the CSMP<br>• Request approval from TYCOM for deviations from required periodicities<br>• Establish procedures to affect routing of completed AWRs<br>• Ensure accomplishing activity immediately reports conditions that would result in reduced inspection periodicity<br>• Monitor timely submission of URO MRC data reports and reports of accomplishment<br>• Review ship's certification continuity report prior to underway period<br>• Parent ISIC of deploying ships: ensure URO MRC due for accomplishment during deployment is in CSMP transfer file, provide message to applicable deployed FMA<br>• Deployed squadrons will review URO MRC status of deployed submarines at in-chop<br>• Prior to start of CNO availability: assign JCNs as necessary, reassign URO MRCs not completed<br>• During availability, URO MRCs not accomplished during depot period will be placed on guarantee list or reassigned<br>• Prior to CNO availability completion, audit URO MRCs assigned to Forces Afloat by the AWP<br>• Following availability completion ensure all MRCs were reported and subsequently updated by SUBMEPP |
| VI-27.3.2 | Scheduled Preservation Upkeep<br>Coordinated Effort | • Schedule and coordinate SPRUCE upkeeps<br>• Coordinate submarine crew training<br>• Monitor effectiveness of program<br>• Chair a debrief with Ship's Force and FMA to review effectiveness of SPRUCE |
| VI-28.6.1 | Cableway Assessment | • Ensure assigned ships are scheduled to receive cableway assessments and training |

| | | |
|---|---|---|
| VI-38.3.3 | DSS Hull Integrity Procedures | • Maintain auditable records of DSS HIP accomplishments<br>• Conduct periodic audits of assigned FMAs<br>• Maintain a file of DSS HIP inventories and schedules<br>• Assist in preparation and approve DSS HIP performance schedule<br>• Ensure review and implementation of DSS HIP procedural inventories and schedules<br>• Ensure all DSS HIP requirements are in the CSMP<br>• Request approval from TYCOM for deviations from DSS HIP requirements and periodicities<br>• Establish procedures for routing of completed DSS HIP AWRs<br>• Monitor the timely submission of DSS HIP data report forms and report of accomplishment<br>• Review vehicle's certification continuity report prior to underway period<br>• Ensure DSS HIPs due for accomplishment during deployment are in CSMP transfer file<br>• Provide message to deployed FMA/Squadron identifying DSS HIPs to be accomplished and materials required for period of deployment<br>• Audit DSS HIPs assigned to Forces Afloat by the AWP |
| VI-40.5.2 | (SUBS) Messages | • Review and take for action all (SUBS) messages<br>• Track (SUBS) messages sent or initiated by submarines under its cognizance<br>• Track (SUBS) messages initiated by the ISIC |

**Regional Maintenance Center Commander**

| Section | Area of Responsibility | Responsibility |
|---|---|---|
| II-II-1.2.1 | Surface Ship Maintenance | • Overall responsibility for efficient planning, brokering and execution of all ship maintenance and modernization for assigned ships |
| II-II-1.6.1 | Metrics | • Use metrics to evaluate Maintenance Team processes |
| V-I-1.6.1 | Quality Assurance for Maintenance, Repair and Alteration | • Designate the RMC/FMA QAO<br>• (Submarines only) Provide a written report of certification<br>• Certify the qualifications of QA personnel<br>• Ensure the RMC/FMA has an effective audit and surveillance program<br>• Initiate a semi-annual evaluation of the RMC/FMA QA Program |
| V-I-1.6.3m | RMC/FMA Responsibilities | • Ensure fact-finding critiques are held<br>• Contact the ISIC for issues that will result in a SUBSAFE critique |
| VI-2.5.2 | Technical Assistance | • Ensure sufficient capability exists to provide timely response to all requests for technical assistance<br>• Ensure RMC mission funds are used to fund all FTA efforts<br>• Ensure technical support is provided to Fleet units.<br>• Ensure the initial response to every FTA request is via Distance Support<br>• Ensure personnel responding to a request for technical assistance are thorough in their review of the specific technical problem<br>• Ensure acknowledgment and response to all FTA requests<br>• Ensure personnel providing on-site technical assistance keep the cognizant ship's department head or designated representative informed<br>• Ensure a TAVR is submitted at the completion of an on-site FTA<br>• Ensure submission of a message report if an on-site assist visit is terminated |
| VI-31.3 | Business Responsibilities | • Execute surface ship maintenance<br>• Develop a consolidated spending plan for the execution year<br>• Issue quarterly spending controls to all of the Maintenance Teams<br>• Evaluate Maintenance and Modernization Business Plan adjustment requests<br>• Redistribute controls across the surface ship Maintenance Teams<br>• Provide an impact statement to the TYCOM regarding the effect on the execution of maintenance |

| | | |
|---|---|---|
| | | • Provide a recommendation to minimize the impact on Force readiness<br>• Evaluate the financial status of each of the Maintenance Teams on a monthly basis<br>• Submit end of quarter financial summary reports to the respective surface TYCOM<br>• Use Emergency Maintenance funds to execute CNO availability or CM maintenance<br>• Determine when Emergency Maintenance funds should be used for the correction of C2 CASREPs or other non-CASREP related, but nonetheless urgent maintenance<br>• Approve any planned delay of action on a CASREP<br>• Generate monthly reports for all assigned ships planning, in or having completed Hot Wash following completion of a CNO availability |
| VI-35.5.2 | Operational Responsibilities | • Adhere to established policy, guidance and regulations regarding expenditure of government funds<br>• Comply with all applicable environmental, safety and health requirements<br>• Ensure appropriately trained personnel are available to meet mission requirements<br>• Submit budget and ensure fiscal execution information is provided as directed by higher authority<br>• Focus command on improving operations to achieve efficiencies<br>• Comply with all NAVSEA Technical Warrant requirements<br>• Comply with Federal Acquisition Regulations and NAVSEA Contracting Warrant guidance<br>• Accomplish Navy Supervising Activity responsibilities for RMC administered work<br>• Maintain quality surveillance system<br>• Accomplish maintenance, repair and modernization of ships |
| VI-37.5d. | Countermeasure System Support Requirements | • Schedule PCMS core activities prior to deployment for each unit<br>• Review and take the appropriate action to correct PCMS discrepancies for subordinate units<br>• Request NAVSEA engineering assistance when determined necessary |
| VII-6.6.2 | Maintenance Center Funding | • Develop a consolidated spending plan for the execution year<br>• Determine when Emergency Maintenance funds should be used for the correction of C2 CASREPs or other non-CASREP related, but nonetheless urgent maintenance |

**Ship's Commanding Officer**

| Section | Area of Responsibility | Responsibility |
|---|---|---|
| II-I-3.3.6.5 | Maintenance Policies and Procedures | • Review AWPs and provide comments to TYCOM, ISIC and SUBMEPP<br>• Assign a Ship's Selected Records Coordinator<br>• Publish policies concerning the ship status and crew before availability starts<br><br>(Submarines Only)<br>• Review status of PMR maintenance schedules and CSMP reports with ISIC prior to CNO availability<br>• Maintain a current SUBMEPP PMR inventory |
| II-I-3.6.8.3.11b | Availability Completion Prerequisites | • Verify satisfactory completion of all Sea Trial evolutions |
| II-I-3.6.8.4.1e | Responsibilities for trials and inspections | • Carry out responsibilities per reference (e)<br>• Develop and execute training plans and documents<br>• Supervise operation of nuclear propulsion plant<br>• Prepare ship's engineering personnel; and propulsion plant spaces for inspection<br>• Maintain PMS, SUBSAFE re-entry control, RPPMS, in accordance with applicable references<br>• Participate in at-sea periods prior to the first Sea Trials<br>• Review Sea Trial agenda and concur<br>• Undergo salvage inspection<br>• Conduct one day Ship's Force dock trials<br>• Demonstrate state of training of the crew<br>• Ensure all alongside tests, inspections, and trials are conducted<br>• Certify to designated ISIC/TYCOM representative that all salvage inspections discrepancies have been corrected<br>• Concur with Supervising Authority message<br>• Report by message to TYCOM that ship and crew are ready for Sea Trials<br>• When authorized conduct a Fast Cruise<br>• Concur with Supervising Authority message<br>• Report completion of Fast Cruise to TYCOM<br>• When requirements of this instruction are complete and permission is received proceed to sea |

| | | |
|---|---|---|
| II-I-4.3.5c | Maintenance Availabilities: Policies and Procedures | • Prioritize all deferred maintenance actions and submit to ISIC/TYCOM<br>• Ensure Ship's Force maintenance actions identified and submitted to ISIC<br>• Develop strategy for calibration<br>• Publish policies concerning the ship status and crew before availability starts<br>• Assign an Availability Coordinator |
| IV-3.3.7 | Boiler Inspections | • Request inspections and recommend desired dates to ISIC<br>• Prepare for scheduled inspections<br>• Review inspection results and initiate corrective actions<br>• Assess impact of corrective actions on operating schedules<br>• Submit reports per paragraph 3.7.2<br>• Conduct boiler inspections by appropriate PMS item |
| IV-5.3.2 | Marine Sanitation Devices | • Oversee correction of discrepancies on MSD system installations<br>• Prevent food stuffs from being stored in areas below sanitation valves, flanges, or take-down joints<br>• Log each unavoidable discharge of prohibited sewage in restricted waters |
| IV-14.2.1 | Magazine Sprinkler Inspection Requirements | • Sprinkler systems tested in accordance with PMS<br>• Magazine temperatures checked and recorded daily<br>• Magazines are properly maintained<br>• Cognizant industrial activities provide written verification that system is operational<br>• System inspection requirements in accordance with reference (a) and PMS<br>• System verification inspection prior to weapons on-load<br>• Take action to correct discrepancies noted during inspection<br>• Ensure design discrepancies reported to TYCOM and entered in CSMP |
| IV-16.4.1.1 | Aircraft Launch and Recovery Systems for Aviation Ships | • Request CAFSU technical assistance when required<br>• Provide berthing and messing for CAFSU representatives<br>• Pass to TYCOM any comments concerning performance of CAFSU representatives<br>• Upon completion of CAFSU ensure timely departure from ship |

| | | |
|---|---|---|
| IV-17.3.5 | Steam Catapult Inspections | • Request inspections and recommend dates for accomplishment<br>• Prepare for scheduled inspections<br>• Conduct Ship's Force responsible inspections<br>• Review inspection results and initiate corrective actions<br>• Assess impact of corrective action on ship's operating schedule |
| IV-18.3.2 | Submarine Salvage Inspection | • Request ISIC to conduct salvage inspection<br>• Coordinate support requirements as needed by inspection team<br>• Complete and forward a pre-inspection information letter<br>• Assemble all ship's data indicated in applicable appendix<br>• Take action to correct discrepancies found and report corrections to ISIC<br>• Submit CASREP if applicable |
| IV-20.2.9 | Diver Life Support Systems, Submarine Rescue Chamber and Dry Deck Shelter Maintenance and Certification | • Maintain certification of DLSS<br>• Ensure deficiencies identified during recertification inspection are corrected in an expeditious manner<br>• Readiness of DLSS to meet operational requirements<br>• Maintain QA program and re-entry procedures |
| IV-21.2.3 | Submarine Oxygen Generating Plants | • Report reduced status in accordance with established procedures<br>• Maintain EOG personnel qualifications<br>• Prohibit operation of EOGs if necessary<br>• Maintain EOG material maintenance log<br>• Ensure EOG material maintenance log is periodically reviewed<br>• Safety related deficiencies promptly entered into ESL<br>• Prior to availability, ensure PMT conducts material inspection of EOGs<br>• Ensure PMT conducts post-availability material inspection<br>• Ensure PMT conducts operational inspection<br>• Ensure electrolysis is secured and EOG is in safe condition prior to drills involving loss of power |

| | | |
|---|---|---|
| V-I-1.5.1 | Organizational Responsibilities | • Designate QAO in writing<br>• Approve TWD as required<br>• (Submarines) provide ISIC written report of ship's certification continuity prior to underway<br>• (Submarines) maintain material condition necessary to support URO to authorized operating depth<br>• (Submarines) approve and sign recertification RPWAR<br>• Certify QA personnel qualifications<br>• Review and sign MOA prior to start of SUBSAFE, nuclear, FBW SCS, Level I work<br>• Approve DFSs |
| VI-2.5.1 | Fleet Technical Assistance | • Ensure FTA requests are accurate, complete and timely<br>• Ensure TYCOM/ISIC are informed of technical issues<br>• Ensure distance support alternatives are exhausted before requesting on-site technical assistance<br>• Ensure qualified Ship's Force technicians are available for support<br>• Upon completion of technical assistance visit, release FTA personnel<br>• Establish secure, central e-mail account to all RMC techs who visit ship |
| VI-4.8.d | Shipboard Electromagnetic Compatibility | • Ensure EMS PMS is conducted<br>• Request EMI survey within six months of deployment or when any new indications of EMI occur<br>• Transmit EMC departure message to cognizant activities<br>• Maintain up-to-date file of EMI/EMC information |
| VI-5.6.5 | Common Assessment Program | • Ensure appropriate personnel attend pre-visit, arrival and exit briefings<br>• Ensure necessary work center personnel are present during assessment/repairs<br>• Submit OPNAV 4790/2K work requests for outside assistance |
| VI-7.2.3 | Board of Inspection and Survey Material Inspections Policy | • Ensure ship is prepared for UMI<br>• Be prepared to discuss items from previous INSURV which is still on CSMP<br>• Designate INSURV coordinator<br>• Assign senior coordinator for each INSURV departmental category |

| | | |
|---|---|---|
| VI-8.2.3 | Miniature/Micro-miniature Electronic Repair Program | • Establish 2M program under cognizance of Electronics Material Officer and Combat Systems Officer<br>• Maintain certified 2M stations and technicians<br>• Screen and repair all CCAs/Ems<br>• (Aircraft Carriers) establish MTRF with an overall coordinator<br>• (Aircraft Carriers) maintain an active MTRF |
| VI-9.2.5 | Metrology and Calibration Program | • Maintain high degree of TAMS calibration readiness<br>• Appoint a calibration coordinator<br>• Ensure only operational TAMS are submitted for calibration<br>• Perform repair of TAMS within capability of Ship's Force<br>• Maintain calibration readiness goal |
| VI-11.5.3 | Maintenance, Repair and Overhaul of Service Craft, Landing Craft and Small Boats | • Coordinate planning aspects of craft and/or boat overhauls with TYCOM/ISIC<br>• Prepare and submit overhaul progress reports<br>• Ensure enough trained personnel are assigned to on-site monitoring of crafts and boats<br>• Fulfill responsibilities for safety of craft and personnel |
| VI-12.3.2.2 | Degaussing | • Maintain ship's installed degaussing system<br>• Maintain ship's degaussing folder |
| VI-12.4.1.2 | Degaussing (Submarines without degaussing systems) | • Ensure magnetic signature minimized by periodic check ranging<br>• Inform ISIC of unsat ranging<br>• Maintain ship's degaussing folder<br>• Undergo flash deperming as directed<br>• Before flash deperming prepare ship's equipment and off-load sensitive material |
| VI-16.2.2.1.5 | Habitability Improvement | • Report deficiencies to TYCOM<br>• Assign project manager and petty officer supervision<br>• Assign labor force for removal, space preparation and installation<br>• Conduct training programs<br>• Accept delivery, store and account for materials<br>• Maintain custody of tools for removal and installation<br>• Report changes to Naval Inventory Control Point<br>• Report completion to TYCOM<br>• Ensure ship's selected records are updated |

| | | |
|---|---|---|
| VI-18.6.1 | Inflatable Life Rafts | • Submit OPNAV 4790/2K for any life raft requiring replacement or recertification<br>• Maintain log or database of all life rafts onboard<br>• Send report to NSWCCD/TYCOM if life raft is lost or transferred to another ship<br>• Ensure life raft fiberglass containers are handled with care<br>• Upon decommissioning contact designated Life Raft Regional Maintenance Activity<br>• Requisition replacement life rafts when necessary |
| VI-23.3.3 | Submarine Noise Reduction | • Establish and maintain Ship's Noise Reduction program<br>• Appoint Senior Department Head as Noise Reduction Officer |
| VI-24.7.5 | Periodic Maintenance Requirement Program | • Responsible for execution of PMR work on ship<br>• Document discovered maintenance deficiencies<br>• Maintenance deficiencies will reflect block 46 of OPNAV 4790/2K<br>• Review Depot Availability Work Packages<br>• Review status of PMR maintenance in SUBMEPP quarterly PMR schedules<br>• Deficiencies in equipment covered by PMR should be documented<br>• Ensure quarterly PMR schedules and inventories are carried onboard<br>• Ensure IMMP MRCs, MSs and TRSs are referenced and used during equipment maintenance<br>• Report repairs to PMR covered components to ISIC<br>• Ensure completed AWRs and PMRs are signed as completed by Ship's Force |
| VI-25.3.4 | Unrestricted Operations | • Ensure URO MRCs are accomplished within required periodicity<br>• For visual inspections between URO MRC 003 inspections use Volume V, Part I, paragraph 5.8.3.d<br>• Maintain auditable records of accomplishment of URO MRCs |
| VI-27.3.4 | Scheduled Preservation Upkeep Coordinated Effort | • Ensure preservation is performed using procedures in references (c) and (e)<br>• Ensure Ship's Force are relieved of all requirements except those necessary to maintain safety and security of ship<br>• Designate SPRUCE manager<br>• Ensure ship is divided into preservation zones<br>• Submit completion letter to TYCOM |

| | | |
|---|---|---|
| VI-28.6.5 | Cableway Assessment | • Assign Ship's Force personnel for FMA cableway assessment repair training<br>• Correct outstanding discrepancies<br>• Within 30 days of completion enter all unrepaired category I discrepancies in CSMP |
| VI-37.5f | Regional Maintenance Center Passive Countermeasure System Support Requirements | • (Surface) Maintain shipboard organization per Volume VI, paragraph 37.5f |
| VI-38.3.4 | DSS Hull Integrity Procedures | • Ensure DSS HIPs are accomplished within required periodicity<br>• Maintain auditable records of accomplishment of DSS HIPs |
| VI-40.5.3 | (SUBS) Messages | • Track (SUBS) messages initiated by the ship<br>• Respond to technical assistance (SUBS) messages<br>• Use guidance of Chapter VI-2 to request technical assistance<br>• Issue TEMPALT and SHIPALT (SUBS) messages |

**Quality Assurance Officer**

| Section | Area of Responsibility | Responsibility |
|---|---|---|
| V-I-FWD-App B | Loss of Traceability | • Initiate action to restore traceability or use alternate traceable material |
| V-I-1.5.12 | Ship Responsibilities | • Administer ship's QA program<br>• Review TWDs<br>• Review FWPs<br>• Verify completed test results<br>• Review and close out TWDs as required<br>• Maintain record files as required<br>• Determine suitability for use of material from another ship<br>• Provide disposition instructions for rejected material<br>• Obtain documentation for certified material<br>• Provide technical services to Supply Officer<br>• Authorize downgrading of material<br>• Review requests for DFS<br>• Maintain DFS files<br>• Verify ship's mapping plans, selected records and drawings are updated as required<br>• Submit DFS clearance reports<br>• Manage ship's internal QA surveillance program<br>• Ensure that QA training is conducted as required<br>• Implement formal qualification program<br>• Conduct oral qualification interviews<br>• Maintain master qualification list as required<br>• (Submarines only) Verify reactor plant hull integrity area maintenance<br>• (Submarines only) Verify REC is initiated for SUBSAFE boundary work as required<br>• (Submarines only) Maintain SUBSAFE REC records including log<br>• (Submarines only) Coordinate with ISIC and FMA to ensure URO MRC program is in accordance with requirements<br>• (Submarines only) Retain QA form 34 as required<br>• Review as many non-nuclear weld records as possible |
| V-I-1.6.10 | RMC/FMA Responsibilities | • Organize and implement QA program within the RMC/FMA as required<br>• Provide guidance and evaluate efforts to produce work of acceptable standards<br>• Prepare QA procedures as required<br>• Assist in QA audits as required<br>• Provide QA training as required<br>• Approve downgrading of controlled material<br>• Determine suitability for use of controlled material as required |

| | | |
|---|---|---|
| | | • Provide disposition instructions for rejected material<br>• Institute a formal qualification program for QA personnel<br>• Train and qualify work center CMPOs/CMHs<br>• Review RMC/FMA generated DFSs as required<br>• Obtain documentation for certified material<br>• Establish and coordinate procedures for material control<br>• Review, open and close out TWDs as required<br>• Review FWPs<br>• (Submarines only) Review and sign RPWAR<br>• Develop QA training program<br>• Maintain current master list of qualifications as required<br>• Establish and administer RMC/FMA QA audit and surveillance program<br>• Maintain QA records and files<br>• Ensure all testing required for completion of TWD is complete and reviewed as required<br>• Perform opening and closing reviews of CWPs as required |
| V-I-2.3.7.3 | CWP Revisions | • Concur with addition of material |
| V-I-2.3.7.8 | CWP Closeout | • Review CWP for correctness and completeness<br>• Retain closed CWP |
| V-I-3.5.1 | Maintenance Personnel Training | • Provide a list of training topics to ship's departments |
| V-I-3.5.2 | Quality Assurance Training | • Establish a separate advanced training program for personnel as required |
| V-I-5.8.5.2d | Nuclear Steam Plant Cleanliness | • Upon loss of cleanliness, approve recovery procedure |
| V-I-5.10.4b(13) | Re-Entry Control | • Establish and maintain CWP/REC log |
| V-I-8.3.1c | Departure From Specification | • Ensure repair for DFS is entered in ship's CSMP |
| V-I-10.7 | FMA QA Record Retention | • Retain material certification and CWP log for life of ship<br>• Maintain records not associated with CWPs as required<br>• Maintain records of assessments, audits, surveillance and evaluations as required<br>• Retain a copy of the last End of Fleet Maintenance Activity Availability Certification Report to tended submarines |
| V-III-6.3.3 | Receipt of SOC Material | • Certify MCD-A and MCD-B materials |
| V-III-8.2.4a | Departure From Specification | • Ensure repair for DFS is entered in ship's CSMP |
| VI-18.7 | Unserviceable/Rejected Life Rafts | • Verify the condition of the rejected life raft |
| VII-11.5.6.1c | Corrective Action Request | • Issue Method C letter when required |

**Quality Assurance Supervisor**

| Section | Area of Responsibility | Responsibility |
|---|---|---|
| V-I-1.6.12 | Organizational Responsibilities | • Ensure all testing required for completion of CWP is complete and reviewed<br>• Perform opening reviews of CWP<br>• Perform closing reviews of CWP<br>• Train and supervise QAIs, Cleanliness Inspectors/Certifiers, CMPOs/CMHs and other personnel<br>• Conduct QA audits, surveillance and coordinate corrective actions<br>• Maintain QA records and files including completed CWPs<br>• Review DFS for accuracy and technical merit and forward to QAO |
| V-I-2.3.7.1 | Formal Work Package Changes | • Make pen and ink changes to the QA forms in a CWP |
| V-I-2.3.7.3 | Formal Work Package Revisions | • For FWPs executed as a part of the CWP, the QAO/QAS will concur with the addition of material |
| V-I-2.3.7.9 | Emergent Controlled Work | • Continuously monitor the task and record all actions taken, if a FMA is involved |
| V-I-5.10.7 | Re-Entry Control | • Inspect controlled assemblies |
| V-I-6.3.5 | Material Control | • File QA form 1 with all applicable documents |
| V-III-6.3.3 | Material Control | • File QA form 1 with all applicable documents |

**Controlled Material Petty Officer**

| Section | Area of Responsibility | Responsibility |
|---|---|---|
| III-3.6.1.g.(2)(h) | Voyage Repair Policy - Surface Ship | • Provide face to face turnover of MIC Level I material to SRU Surveyor<br>• Perform joint inspection of MIC Level I material with Ship's Force QAI prior to turnover to contractor |
| V-I-1.5.16 | Ship Responsibilities | • Ensure all material under their cognizance is stored and controlled as required<br>• Receipt inspect all LI/SS stock program material, SFCC and NRP received<br>• Request disposition instructions for rejected material<br>• Control previously rejected and now accepted controlled material as required<br>• Maintain custody of controlled material in segregated stowage in accordance as required<br>• Inspect controlled material storage areas as required<br>• Ensure controlled material is properly stowed and handled<br>• Ensure nuclear material received without Ready for Issue tags is certified to the required "Level of Essentiality"<br>• Reject unsatisfactory material<br>• Send any material certification documents for material which has been provided by the ship to the RMC/FMA QA office as required<br>• Perform receipt inspection of package alteration kits that contain controlled material when ready for use<br>• Ensure controlled material markings are on all pieces when cutting a smaller piece from a larger one<br>• Ensure controlled material markings are moved to an unaffected area, if the controlled material item will lose the markings due to a fabrication process (e.g., welding, machining) prior to the fabrication process<br>• Ensure all controlled material is identified, color coded, marked and tagged as required |
| V-I-1.6.14 | RMC/FMA Responsibilities | • Receipt inspect all controlled material received<br>• Ensure all material under their cognizance is stored and controlled as required<br>• Inspect controlled material storage areas as required<br>• Ensure controlled material is properly stowed and handled<br>• Reject unsatisfactory material<br>• Send any material certification documents for material which has been provided by a ship along with the QA form 1 to the QA office |

| | | |
|---|---|---|
| | | • Receipt inspect package alteration kits that contain controlled material when ready for use<br>• Control previously rejected and now accepted controlled material as required<br>• Retain custody of controlled material when it is not in the custody of a craftsman or in a controlled material storage area<br>• Ensure controlled material markings are on all pieces when cutting a smaller piece from a large one<br>• Ensure controlled material markings are moved to an unaffected area, if the controlled material item will lose the markings due to a fabrication process (e.g., welding, machining) prior to the fabrication process |
| V-I-6.3.4 | Receipt Inspection of Controlled Material | • Receipt inspect controlled materials as required |
| V-I-6.3.5 | Receipt Inspection of Open Purchase or Locally Manufactured Material or Upgrading Supply System Material to Level I | • Receipt inspect materials as required |
| V-I-6.3.8 | Level I/SUBSAFE Stock Program Material Downgrading | • Remove markings as required |
| V-I-6.3.9 | Storage, Issue, and Handling of Level I/SUBSAFE/Submarine Flight Critical Component Stock Program Material | • Inspect controlled material storage areas as required<br>• Maintain custody of controlled material as required<br>• Verify transfer of MIC markings as required |
| V-III-6.3.1 | Control of SOC Material | • Maintain custody of SOC material as required |
| V-III-6.3.3 | Receipt of SOC Material | • Receipt inspect SOC material as required |

**JOINT FLEET MAINTENANCE MANUAL**

**VOLUME I**

**NEW CONSTRUCTION**

**LIST OF EFFECTIVE PAGES**

| Page Numbers | Change in Effect |
|---|---|
| i thru iii | Change 6 |
| iv thru viii | Change 2 |
| ix | Change 6 |
| x | Change 2 |
| xi | Change 4 |
| xii thru xv | Change 2 |
| xvi | Change 6 |
| xvii thru xviii | Change 2 |
| I-FWD-1 thru I-FWD-5 | Change 4 |
| I-FWD-6 | REV A |
| I-FWD-7 thru I-FWD-8 | Change 4 |
| I-FWD-A-1 thru I-FWD-A-2 | Change 1 |
| I-FWD-A-3 thru I-FWD-A-11 | Change 6 |
| I-FWD-A-12 | Change 3 |
| I-FWD-A-13 thru I-FWD-A-14 | REV A |
| I-FWD-A-15 | Change 3 |
| I-FWD-A-16 thru I-FWD-A-18 | Change 6 |
| I-FWD-B-1 | Change 3 |
| I-FWD-B-2 | Change 4 |
| I-FWD-B-3 thru I-FWD-B-4 | Change 6 |
| I-FWD-B-5 thru I-FWD-B-6 | Change 3 |
| I-FWD-B-7 | Change 6 |
| I-FWD-B-8 | Change 4 |
| I-FWD-B-9 thru I-FWD-B-12 | Change 6 |
| I-FWD-B-13 | Change 3 |
| I-FWD-B-14 | Change 4 |

| Page Numbers | Change in Effect |
|---|---|
| I-FWD-B-15 | Change 6 |
| I-FWD-B-16 | Change 4 |
| I-FWD-C-1 | Change 4 |
| I-FWD-C-2 | Change 6 |
| I-FWD-C-3 thru I-FWD-C-5 | Change 4 |
| I-FWD-C-6 thru I-FWD-C-9 | Change 6 |
| I-FWD-C-10 | Change 4 |
| I-FWD-C-11 | Change 5 |
| I-FWD-C-12 thru I-FWD-C-13 | Change 4 |
| I-FWD-C-14 | Change 6 |
| I-FWD-C-15 | Change 4 |
| I-FWD-C-16 | Change 6 |
| I-FWD-C-17 thru I-FWD-C-19 | Change 5 |
| I-FWD-C-20 thru I-FWD-C-24 | Change 4 |
| I-FWD-C-25 | Change 6 |
| I-FWD-C-26 | Change 4 |
| I-FWD-C-27 | Change 6 |
| I-FWD-C-28 thru I-FWD-C-30 | Change 4 |
| I-1-1 thru I-1-2 | Change 2 |
| I-1A-1 thru I-1A-6 | REV A |
| I-1B-1 | REV A |
| I-1B-2 | Change 1 |
| I-1B-3 thru I-1B-8 | REV A |
| I-1C-1 | REV A |
| I-1C-2 | Change 4 |
| I-1C-3 | Change 1 |

| Page Numbers | Change in Effect |
|---|---|
| I-1C-4 | Change 4 |
| I-1D-1 | REV A |
| I-1D-2 | Change 1 |
| I-1D-3 | Change 2 |
| I-1D-4 | REV A |
| I-2-1 | Change 3 |
| I-2-2 thru I-2-9 | Change 1 |
| I-2-10 thru I-2-12 | Change 5 |
| I-2-13 thru I-2-22 | Change 1 |
| I-2-23 | Change 3 |
| I-2-24 thru I-2-26 | Change 1 |
| I-2A-1 | REV A |
| 1-2A-2 thru I-2A-12 | Change 3 |
| I-2B-1 | REV A |
| I-2B-2 thru I-2B-10 | Change 3 |
| I-2C-1 | REV A |
| I-2C-2 thru I-2C-4 | Change 3 |
| I-2D-1 | REV A |
| I-2D-2 thru I-2D-5 | Change 3 |
| I-2D-6 | REV A |
| I-2E-1 | Change 3 |
| I-2E-2 | REV A |
| I-2F-1 | Change 3 |
| I-2F-2 | REV A |
| I-2G-1 | Change 3 |
| I-2G-2 | REV A |
| I-2H-1 | REV A |
| I-2H-2 thru I-2H-4 | Change 3 |
| I-2I-1 | Change 3 |
| I-2I-2 | REV A |
| I-2J-1 thru I-2J-2 | Change 3 |

| Page Numbers | Change in Effect |
|---|---|
| I-2K-1 | Change 3 |
| I-2K-2 | Change 1 |
| I-2L-1 | Change 3 |
| I-2L-2 | Change 1 |
| I-2M-1 | Change 3 |
| I-2M-2 | Change 1 |
| I-2N-1 | Change 3 |
| I-2N-2 | Change 1 |
| I-2O-1 | Change 3 |
| I-2O-2 | Change 1 |
| I-2P-1 | Change 3 |
| I-2P-2 | Change 1 |
| I-2Q-1 | Change 3 |
| I-2Q-2 | Change 1 |
| I-2R-1 | Change 3 |
| I-2R-2 | Change 1 |
| I-2S-1 | Change 3 |
| I-2S-2 | Change 1 |
| I-2T-1 | Change 3 |
| I-2T-2 | Change 1 |
| I-2U-1 | Change 3 |
| I-2U-2 | Change 1 |
| I-2V-1 | Change 3 |
| I-2V-2 | Change 1 |
| I-2W-1 | Change 3 |
| I-2W-2 | Change 1 |
| I-2X-1 | Change 3 |
| I-2X-2 | Change 1 |
| I-2Y-1 | Change 3 |
| I-2Y-2 | Change 1 |
| I-2Z-1 | Change 3 |

| Page Numbers | Change in Effect |
|---|---|
| I-2Z-2 | Change 1 |
| I-2AA-1 thru I-2AA-2 | Change 1 |
| I-2AB-1 thru I-2AB-4 | Change 1 |
| I-2AC-1 thru I-2AC-2 | Change 1 |
| I-2AD-1 thru I-2AD-6 | Change 1 |
| I-2AE-1 thru I-2AE-2 | Change 3 |
| I-2AF-1 | Change 3 |
| I-2AF-2 | Change 1 |
| I-2AG-1 | Change 3 |
| I-2AG-2 | Change 1 |
| I-3-1 | REV A |
| I-3-2 | Change 2 |
| I-3-3 thru I-3-5 | REV A |
| I-3-6 thru I-3-7 | Change 1 |
| I-3-8 thru I-3-9 | REV A |
| I-3-10 | Change 1 |
| I-3-11 | Change 3 |
| I-3-12 thru I-3-16 | REV A |
| I-3A-1 | REV A |
| I-3A-2 | Change 5 |
| I-3A-3 thru I-3A-4 | REV A |
| I-3B-1 thru I-3B-2 | REV A |
| I-3C-1 thru I-3C-20 | REV A |
| I-3D-1 thru I-3D-2 | REV A |
| I-3E-1 thru I-3E-18 | REV A |
| I-4-1 | Change 6 |
| I-4-2 thru I-4-3 | Change 2 |
| I-4-4 | REV A |
| I-4-5 | Change 6 |
| I-4-6 | REV A |
| I-4-7 | Change 6 |

| Page Numbers | Change in Effect |
|---|---|
| I-4-8 thru I-4-10 | REV A |
| I-4A-1 thru I-4A-8 | REV A |
| I-4B-1 thru I-4B-2 | REV A |
| I-4B-3 thru I-4B-4 | Change 4 |
| I-4C-1 thru I-4C-4 | REV A |
| I-4D-1 | Change 5 |
| I-4D-2 | Change 6 |
| I-4D-3 thru I-4D-4 | Change 5 |
| I-4E-1 | Change 3 |
| I-4E-2 | REV A |
| I-4F-1 | Change 1 |
| I-4F-2 thru I-4F-4 | Change 5 |
| I-4F-5 | Change 1 |
| I-4F-6 thru I-4F-7 | Change 5 |
| I-4F-8 | REV A |
| I-4G-1 thru I-4G-2 | Change 6 |
| I-5-1 thru I-5-2 | Change 2 |
| I-5-3 thru I-5-6 | REV A |
| I-5A-1 thru I-5A-2 | REV A |
| I-5B-1 thru I-5B-4 | REV A |
| I-5C-1 thru I-5C-2 | REV A |
| I-6-1 | Change 2 |
| I-6-2 thru I-6-4 | Change 1 |
| I-6A-1 thru I-6A-2 | REV A |
| I-6B-1 thru I-6B-2 | Change 1 |
| I-6B-3 thru I-6B-4 | REV A |
| I-6C-1 thru I-6C-2 | Change 1 |
| I-6D-1 thru I-6D-2 | Change 1 |
| I-6D-3 | Change 3 |
| I-6D-4 | REV A |

(This Page Intentionally Left Blank)

**JOINT FLEET MAINTENANCE MANUAL**

**VOLUME I**

**NEW CONSTRUCTION**

**RECORD OF CHANGES**

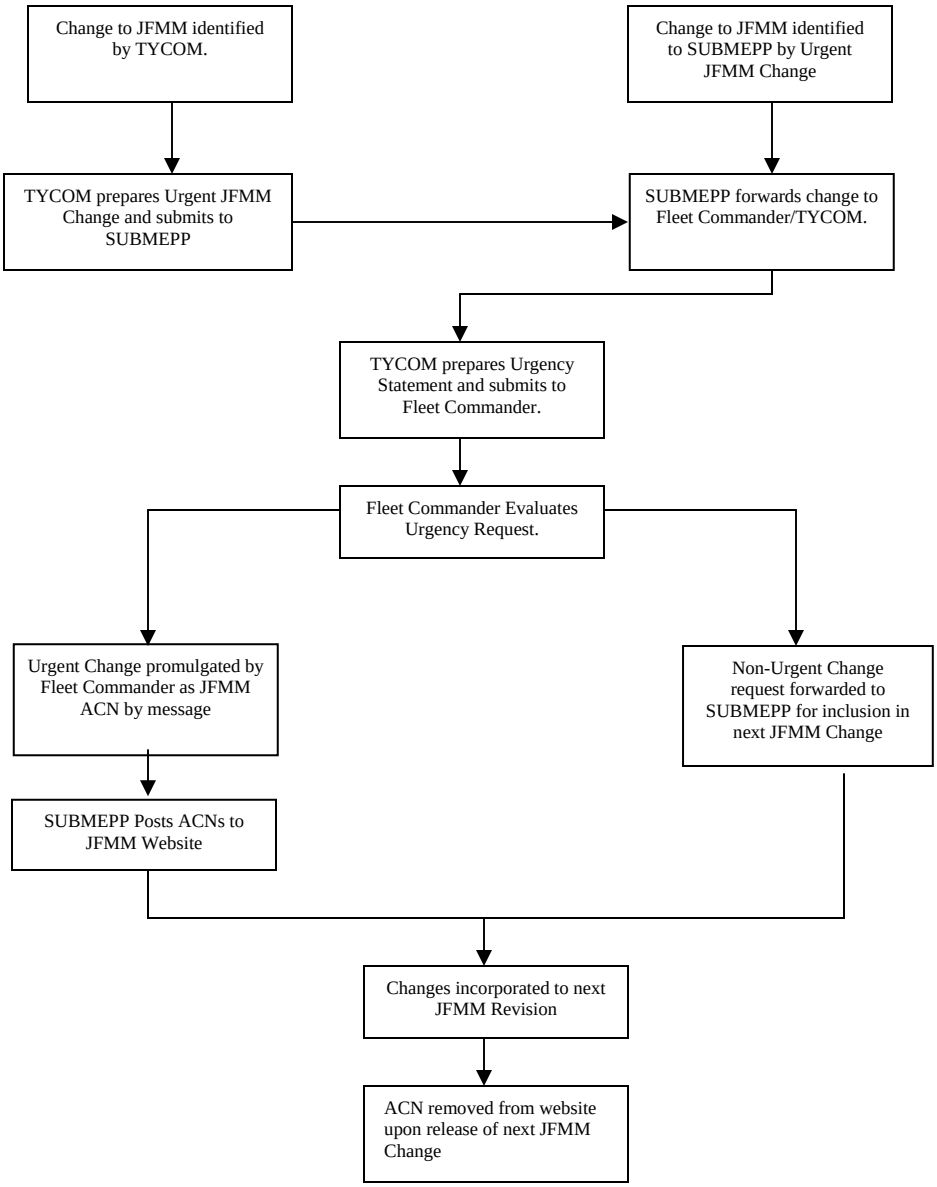
| CHANGE NO. | DATE | TITLE OR BRIEF DESCRIPTION | ENTERED BY (INITIALS) |
|---|---|---|---|
| | | | |

(This Page Intentionally Left Blank)

**URGENT JOINT FLEET MAINTENANCE MANUAL CHANGE PROCESS**

Purpose: To promulgate the process to be followed in the event that a requirement of the JFMM must be modified, cancelled or implemented prior to the next regularly scheduled change.

Process: The following process will be used to promulgate urgent changes to the JFMM



(This Page Intentionally Left Blank)

JOINT FLEET MAINTENANCE MANUAL CHANGE REQUEST FORM

FROM:
ACTIVITY/SHIP _____ E-MAIL ADDRESS _____

CODE/DEPT/SHOP _____ DATE _____

ORIGINATOR _____ TEL EXT _(___)_____

VOL-PART-PARA NO. _____ FIGURE _____ TABLE _____

PROCESSING NORMAL _____ PRIORITY*_____

* (Justify in rationale below if priority is marked)

PROBLEM DESCRIPTION:

RECOMMENDED CHANGE:

RATIONALE:

(Fold on dotted line on reverse side, staple or tape, and mail to Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) Activity, send facsimile to (207) 438-6250, or E-mail to PTNH.SUBMEPP.JFMMMGR@Navy.Mil)

FOLD

---

Commanding Officer

OFFICIAL BUSINESS

Commanding Officer
Submarine Maintenance Engineering,
Planning and Procurement (SUBMEPP) Activity
Attn: Code 1832
P.O. Box 2500
Portsmouth Naval Shipyard
Portsmouth, NH 03804-2500

---

FOLD

**JOINT FLEET MAINTENANCE MANUAL**

**VOLUME I**

**NEW CONSTRUCTION**

**TABLE OF CONTENTS**

Page No.

FOREWORD

1 Manual Development ..... I-FWD-1

2 Volume Topics ..... I-FWD-1

3 Purpose ..... I-FWD-1

4 Cancellation ..... I-FWD-1

5 Discussion ..... I-FWD-2

5.1 Platform Considerations ..... I-FWD-2

5.2 Maintenance Considerations ..... I-FWD-2

5.3 Terminology Considerations ..... I-FWD-2

5.4 Administrative Considerations ..... I-FWD-2
5.4.1 Master Locator Guide ..... I-FWD-2
5.4.2 Master List of References ..... I-FWD-2
5.4.3 Table of Responsibilities ..... I-FWD-3
5.4.4 Acronyms ..... I-FWD-3
5.4.5 Appendices ..... I-FWD-3
5.4.6 Volume Structure ..... I-FWD-3

6 Changes to the Manual ..... I-FWD-3

7 Life Cycle Maintenance Process for the Joint Fleet Maintenance Manual ..... I-FWD-3

7.1 Purpose ..... I-FWD-3

7.2 Background ..... I-FWD-3

7.3 Responsibilities and Requirements ..... I-FWD-4
7.3.1 Fleet Commanders ..... I-FWD-4
7.3.2 Type Commander ..... I-FWD-4
7.3.3 Joint Fleet Maintenance Manual Board of Directors ..... I-FWD-5
7.3.4 Submarine Maintenance Engineering, Planning and Procurement ..... I-FWD-5
7.3.5 Systems Command ..... I-FWD-5
7.3.6 User Activities ..... I-FWD-6

7.4 Change Process ..... I-FWD-6

Appendices
A Master Locator Guide ..... I-FWD-A-1
B Master List of References ..... I-FWD-B-1
C Responsibilities ..... I-FWD-C-1

LIST OF EFFECTIVE PAGES ..... i

RECORD OF CHANGES ..... v

URGENT JOINT FLEET MAINTENANCE MANUAL CHANGE PROCESS ..... vii

JOINT FLEET MAINTENANCE MANUAL CHANGE REQUEST FORM ..... ix

CHAPTER 1 - INTRODUCTION

1.1 Purpose ..... I-1-1

1.2 Scope ..... I-1-1

1.3 Changes and Corrections ..... I-1-2

1.4 Request for Copies of the Manual ..... I-1-2

Appendices

$A_1$ Summary of Typical New Construction Major Milestones and Message Reporting Requirements for Submarines ..... I-1A-1

$A_2$ Summary of Typical New Construction Major Milestones and Message Reporting Requirements for Aircraft Carriers ..... I-1A-3

$A_3$ Summary of Typical New Construction Major Milestones and Message Reporting Requirements for Surface Forces ..... I-1A-5

$B_1$ AOE General Time Line of Key Events ..... I-1B-1

$B_2$ CVN General Time Line of Key Events ..... I-1B-2

$B_3$ DDG General Time Line of Key Events ..... I-1B-3

$B_4$ LHD General Time Line of Key Events ..... I-1B-4

$B_5$ LSD General Time Line of Key Events ..... I-1B-5

$B_6$ MHC General Time Line of Key Events ..... I-1B-6

$B_7$ USS VIRGINIA (SSN 774) General Time Line of Key Events ..... I-1B-7

C List of Acronyms ..... I-1C-1

D Glossary of Terms ..... I-1D-1

CHAPTER 2 - POLICIES AND RESPONSIBILITIES

2.1 Ship Program Managers ..... I-2-3

2.1.1 Pre-Commissioning ..... I-2-3

2.1.2 Post Shakedown Availability (Submarines only) ..... I-2-3

2.2 Naval Sea Systems Command Nuclear Propulsion Directorate (Nuclear Powered Ships only) ..... I-2-4

2.2.1 Pre-Commissioning ..... I-2-4

2.2.2 Reactor Safeguard Examination ..... I-2-4

2.2.3 Criticality/Power Range Testing ..... I-2-4

2.2.4 Post Shakedown Availability ..... I-2-4

2.3 Type Commander ..... I-2-4

2.3.1 Pre-Commissioning ..... I-2-4

2.3.2 Combined Trials/Acceptance Trials/Final Contract Trials/Guarantee Material Inspection ..... I-2-6

2.3.3 Post Shakedown Availability ..... I-2-6

2.4 Supervising Authority ..... I-2-7

2.4.1 Pre-Commissioning ..... I-2-7

2.4.2 Acceptance Trials/Combined Trials ..... I-2-10

2.4.3 Post Shakedown Availability ..... I-2-10

2.4.4 Deficiencies ..... I-2-11

2.5 Immediate Superior in Command ..... I-2-11
2.5.1 Pre-Commissioning ..... I-2-11
2.5.2 Post Shakedown Availability ..... I-2-12

2.6 Building Yard ..... I-2-13

2.7 Design Yard/Planning Yard ..... I-2-14

2.8 Commanding Officer, Prospective Commanding Officer, Officer In Charge ..... I-2-14
2.8.1 General ..... I-2-14
2.8.2 Pre-Commissioning ..... I-2-14
2.8.3 Trials and Inspections ..... I-2-17
2.8.4 Post Shakedown Availability ..... I-2-17

2.9 Pre-Commissioning Unit ..... I-2-19
2.9.1 Initial Man-up ..... I-2-19
2.9.2 Training ..... I-2-19
2.9.2.1 Shipboard Training ..... I-2-19
2.9.2.2 Industrial Activity Training ..... I-2-21
2.9.2.3 Fleet Training Center ..... I-2-21
2.9.3 Ship's Qualification Program ..... I-2-21
2.9.4 Deficiency Identification and Correction ..... I-2-21
2.9.5 Establishment of Engineering/Reactor Department ..... I-2-21
2.9.5.1 Requirements ..... I-2-21
2.9.5.2 Shipboard Inspections ..... I-2-21
2.9.5.3 Personnel Qualification Standards ..... I-2-22
2.9.5.4 Outfitting Support (as applicable) ..... I-2-22
2.9.5.5 Operational Sequencing System (Surface Ships only) ..... I-2-22
2.9.5.6 Engineering/Reactor Department Organization and Regulations Manual ..... I-2-23

2.10 Support Activities ..... I-2-23
2.10.1 Technical Support ..... I-2-23
2.10.1.1 Regional Maintenance Centers ..... I-2-23
2.10.2 Submarine Maintenance Engineering, Planning and Procurement Activity ..... I-2-23
2.10.3 Navy Management Systems Support Office ..... I-2-23
2.10.4 Fleet Introduction Team (Surface Forces only) ..... I-2-24
2.10.5 Engineering Training Group (Surface Ships only) ..... I-2-24
2.10.6 Surface Nuclear Propulsion Mobile Training Team (Nuclear Powered Aircraft Carriers only) ..... I-2-24
2.10.7 Fitting Out and Supply Support Assistance Center (Surface Ships only) ..... I-2-24
2.11 Naval Sea Systems Command (Submarines only) ..... I-2-26
2.11.1 Pre-Commissioning ..... I-2-26

Appendices
A Message Scenario and Sample Messages/Letters for Habitability Inspections and In-Service ..... I-2A-1
$A_1$ Sample Supervising Authority Letter to Ship Program Manager Recommending Habitability Inspection and In-Service ..... I-2A-2
$A_2$ Sample Ship Program Manager Letter Requesting TYCOM to Authorize ISIC to Conduct Habitability Inspection ..... I-2A-3
$A_3$ Sample TYCOM Message Directing ISIC to Conduct Habitability Inspection ..... I-2A-4
$A_4$ Sample ISIC Message Reporting Completion of Habitability Inspection and Recommending Ship Be Placed "In-Service" ..... I-2A-5
$A_5$ Sample Ship Program Manager to CNO Message Recommending Ship Be Placed In-Service ..... I-2A-7
$A_6$ Sample TYCOM Message Recommending Ship Be Placed "In-Service Active" ..... I-2A-8
$A_7$ Sample CNO to Ship Program Manager Message Directing the Ship Be Placed In-Service ..... I-2A-9
$A_8$ Sample Supervising Authority to Ship Program Manager Message Recommending Ship Be Placed In-Service ..... I-2A-10
$A_9$ Sample Ship Program Manager to Ship Message Directing Ship Be Placed In-Service ..... I-2A-11
$A_{10}$ Sample CO Pre-Commissioning Unit Message Reporting "In-Service Active" ..... I-2A-12

B Message Scenario and Sample Messages for Fast Cruise and Alpha Sea Trial (Nuclear Powered Ships) ..... I-2B-1
$B_1$ Sample ISIC Certification of New Construction Readiness for Fast Cruise and Sea Trials Message (Submarines) ..... I-2B-2
$B_2$ Sample Pre-Commissioning Unit Message to TYCOM Concerning Crew Certification (CVN) ..... I-2B-3
$B_3$ Sample TYCOM Certification of Crew Readiness for Underway Trials Message (Submarines) ..... I-2B-4
$B_4$ Sample Supervising Authority to Ship Program Manager Message Concerning Fast Cruise/Alpha Sea Trial Readiness (Submarines) ..... I-2B-5
$B_5$ Sample Supervising Authority Message to Ship Program Manager Concerning Fast Cruise/Sea Trial Readiness (CVN) ..... I-2B-6
$B_6$ Sample Supervising Authority to Ship Program Manager 24 Hour Message Concerning Fast Cruise Readiness (Submarines) ..... I-2B-7
$B_7$ Sample Supervising Authority to Ship Program Manager and TYCOM Message Concerning Fast Cruise Completion (Submarines) ..... I-2B-8
$B_8$ Sample NAVSEA to TYCOM Message Concerning Material Condition and Authorized Depth for Alpha Sea Trial (Submarines) ..... I-2B-9
$B_9$ Sample TYCOM to Pre-Commissioning Unit Message Concerning Alpha Sea Trial Authorized Test and Operating Depth (Submarines) ..... I-2B-10
C Message Scenario and Sample Messages for Bravo, Charlie, and Combined Trials (Submarines) ..... I-2C-1
$C_1$ Sample Supervising Authority to Ship Program Manager Message Concerning Design Test Depth Dive Readiness ..... I-2C-2
$C_2$ Sample NAVSEA to TYCOM Message Concerning Design Test Depth Dive Authorization ..... I-2C-3
$C_3$ Sample TYCOM to Pre-Commissioning Unit Message Concerning Design Test Depth Dive Authorization ..... I-2C-4
D Message Scenario and Sample Messages for URO Certification (Submarines) ..... I-2D-1
$D_1$ Sample Supervising Authority to Ship Program Manager Message Concerning URO ..... I-2D-2
$D_2$ Sample NAVSEA to TYCOM Message Concerning URO ..... I-2D-4
$D_3$ Sample TYCOM to Pre-Commissioning Unit Message Concerning URO ..... I-2D-5
E Sample Supervising Authority Message to Ship Program Manager and TYCOM Concerning PSA Fast Cruise/Sea Trial Readiness (Submarines) ..... I-2E-1
F Sample Ship Program Manager Message to TYCOM Concerning PSA Sea Trial Authorization (Submarines) ..... I-2F-1
G Sample NAVSEA Message to TYCOM Recommending Unrestricted Operations Be Authorized Following the Completion of PSA (Submarines) ..... I-2G-1
H Pre-RSE/RSE/Criticality/Power Range Testing Logic Table (All Nuclear Powered Ships) ..... I-2H-1
$H_1$ Sample Supervising Authority to NAVSEA Message Requesting Authorization for Criticality ..... I-2H-2
$H_2$ Sample Supervising Authority to NAVSEA Request for Initial Criticality ..... I-2H-3
$H_3$ Sample NAVSEA to Supervising Authority Message Authorizing Criticality ..... I-2H-4
I Sample TYCOM Message Concerning Sea Trial Agenda (Submarines) ..... I-2I-1
J Sample TYCOM DSRS Support Services Message (Submarines) ..... I-2J-1
K Sample TYCOM Message to PCU Concerning Use of the FBW SCS in Support of Alpha Sea Trials (Submarines) ..... I-2K-1
L Sample TYCOM Message to PCU Concerning FBW SCS Material Condition Initial Certification (Submarines) ..... I-2L-1
M Sample TYCOM Message Concerning DSRS Support Services (Submarines) ..... I-2M-1
N Sample TYCOM Message to Ship Program Manager Concerning PSA Fast Cruise (Submarines) ..... I-2N-1
O Sample ISIC Crew Certification Message Following PSA (Submarines) ..... I-2O-1
P Sample TYCOM Message to Ship Concerning PSA Sea Trial Authorization (Submarines) ..... I-2P-1
Q Sample Supervising Authority Message to NAVSEA and TYCOM Concerning PSA Fast Cruise Completion (Submarines) ..... I-2Q-1
R Sample Ship Message to TYCOM Concerning Material Certification Upon Completion of PSA (Submarines) ..... I-2R-1
S Sample TYCOM Message to Ship Authorizing Unrestricted Operations Following Completion of PSA (Submarines) ..... I-2S-1
T Sample Ship Message to TYCOM Concerning Material Certification (Submarines) ..... I-2T-1

U Sample Supervising Authority Message to NAVSEA Concerning Material Condition for Unrestricted Operation Following PSA (Submarines) ..... I-2U-1
V Sample TYCOM Message to the Ship Concerning FBW SCS Certification (Submarines) ..... I-2V-1
W Sample Supervising Authority Message to NAVSEA Concerning PCU FBW SCS Material Condition Readiness for Fast Cruise and Alpha Trials (Submarines) ..... I-2W-1
X Sample Supervising Authority Message to TYCOM and NAVSEA Concerning PCU Fast Cruise Completion and Readiness of FBW SCS Material Condition for Alpha Sea Trials (Submarines) ..... I-2X-1
Y Sample Supervising Authority Message to NAVSEA Concerning PCU FBW SCS Material Condition Readiness Upon Completion of Alpha Sea Trials and Readiness of the FBW SCS for Use During Bravo and Subsequent Sea Trials (Submarines) ..... I-2Y-1
Z Sample Supervising Authority Message to NAVSEA Concerning PCU FBW SCS Material Condition Initial Certification (Submarines) ..... I-2Z-1
AA Pre Man-Up Checklist for TYCOM/ISIC ..... I-2AA-1
AB Basic Requirements for Initial Man-Up Personnel of the PCU (Detachment Concept) (CVN, DDG, LHD, LPD, AOE, LSD) ..... I-2AB-1
AC Basic Requirements for Initial Man-Up Personnel of the PCU (CVN, DDG, LHD, LPD, AOE, LSD, Submarines) ..... I-2AC-1
AD Generic Base Line of Fleet Introduction Team Functions and Responsibilities ..... I-2AD-1
AE Sample NAVSEA Message to TYCOM Concerning PCU FBW SCS Material Condition Readiness for Alpha Sea Trials (Submarines) ..... I-2AE-1
AF Sample NAVSEA Message to TYCOM Concerning PCU FBW SCS Material Condition Initial Certification (Submarines) ..... I-2AF-1
AG Sample NAVSEA Message to TYCOM Concerning PCU Recommendation for Fly-By-Wire Ship Control System Certification ..... I-2AG-1

CHAPTER 3 - PRE DELIVERY

3.1 Purpose ..... I-3-2

3.2 Shipbuilder's Test Program ..... I-3-2

3.3 Inspections/Certifications/Assists ..... I-3-2
3.3.1 Arrival Assist ..... I-3-2
3.3.2 Periodic Monitoring/Inspections/Visits ..... I-3-3
3.3.3 Pre-Reactor Safeguard Examination (Nuclear Powered Ships only) ..... I-3-3
3.3.4 Crew Certification ..... I-3-4
3.3.5 Sonar Certification (DDG/MHC/SSN only) ..... I-3-5
3.3.6 Aviation Facility Certification (Air Capable Ships only) ..... I-3-5
3.3.7 Salvage Inspection (Submarines only) ..... I-3-6
3.3.8 Field Calibration Activity/Aircraft Intermediate Maintenance Department Calibration Laboratory Certification (AOE/CVN/LSD/LHD/SSN only) ..... I-3-6
3.3.9 National Policy on the Control of Compromising Emanations Inspection ..... I-3-7
3.3.10 Diesel Inspection ..... I-3-7
3.3.11 Habitability Inspection ..... I-3-7
3.3.12 Requirements for In-Service ..... I-3-8
3.3.13 Degaussing/Deperming ..... I-3-8
3.3.14 Light-Off Assessment (Non-Nuclear Powered Ships only) ..... I-3-9
3.3.15 Shipboard Crane Certification Program (CVN/MHC/LHD/LPD/LSD only) ..... I-3-10

3.4 Maintenance and Material Management Program ..... I-3-10
3.4.1 Planned Maintenance System ..... I-3-10
3.4.2 Technical Feedback Reports ..... I-3-11
3.4.3 Establishment of Current Ship's Maintenance Project ..... I-3-12
3.4.4 Shipboard Nontactical Automated Data Processing Program ..... I-3-12

3.5 Equipment Load Out ..... I-3-12
3.5.1 Test Equipment ..... I-3-12
3.5.2 Hand Tools and Weight Handling Equipment ..... I-3-12

3.6 Logistic Support ..... I-3-12
3.6.1 Technical Manuals and Drawings ..... I-3-12
3.6.2 Unrestricted Operations Maintenance Requirement Cards (Submarines only) ..... I-3-15

3.7 Operational Control Transfer ..... I-3-15
3.7.1 Sound Silencing Programs Unique to New Construction (MHC/SSN only) ..... I-3-16

Appendices
A Areas to Be Evaluated During Arrival Assists ..... I-3A-1
B Areas to Be Evaluated During Monitoring Inspections ..... I-3B-1
C Sample Pre-Reactor Safeguard Examination Notice ..... I-3C-1
D In-Service Compartment Surveillance Guide ..... I-3D-1
E Sample Pre-Commissioning Habitability Inspection Checklist for New Construction Ships ..... I-3E-1

CHAPTER 4 - TRIALS

4.1 Purpose ..... I-4-1

4.2 Dock Trials ..... I-4-2
4.2.1 Purpose ..... I-4-2
4.2.2 Conduct ..... I-4-2
4.2.3 Scheduling ..... I-4-2
4.2.4 Specific Test Areas ..... I-4-2

4.3 Fast Cruise ..... I-4-2
4.3.1 Purpose ..... I-4-2
4.3.2 Conduct ..... I-4-2
4.3.3 Scheduling ..... I-4-3
4.3.4 Specific Test Areas ..... I-4-3
4.3.5 Reports (Nuclear Powered Ships only) ..... I-4-3

4.4 Sea Trials ..... I-4-3
4.4.1 General ..... I-4-3
4.4.2 Builder's Trials ..... I-4-5
4.4.3 Alpha Sea Trial (Submarines only) ..... I-4-5
4.4.4 Bravo Sea Trial (Submarines only) ..... I-4-7
4.4.5 Charlie Sea Trial (Submarines only) ..... I-4-8
4.4.6 Acoustic Trials (Platform and Radiated) (Submarines only) ..... I-4-8
4.4.7 Shock Trials ..... I-4-8
4.4.8 Acceptance Trials/Combined Trials/Final Contract Trials/Guarantee Material Inspection ..... I-4-8

Appendices
A Specific Dock Trial Test Areas ..... I-4A-1
B Minimum Fast Cruise Requirements ..... I-4B-1
C Listing of Tests to Be Performed During Nuclear Powered Aircraft Carrier Builder's Trials ..... I-4C-1
D Listing of Tests to Be Performed During Initial Tightness Dive ..... I-4D-1
E Escort Ship Capabilities for Submarine Sea Trials ..... I-4E-1
F Listing of Tests to Be Performed Prior to, During and Following First Dive to Test Depth ..... I-4F-1
G Submarine Sea Trial Situation Report (SITREP) ..... I-4G-1

CHAPTER 5 - POST DELIVERY DEFICIENCIES

5.1 Purpose ..... I-5-1

5.2 Deficiency Correction ..... I-5-2
5.2.1 Government Responsible Items ..... I-5-2
5.2.2 Shipbuilder Responsible Items ..... I-5-2
5.2.3 Recommended Changes in Characteristics, Design Specifications, or Plans ..... I-5-2

5.3 Required Reports ..... I-5-2

5.4 Combined Trials/Acceptance Trials ..... I-5-4

5.5 Guarantee Material Inspection/Final Contract Trials ..... I-5-5

5.6 Post Delivery Deficiency Items ..... I-5-5

Appendices
A Sample Page of 4760-1 Report with Representative Data ..... I-5A-1
B Legend and Explanation of Symbols Used in Report 4760-1 ..... I-5B-1
C Preparation for Guarantee Material Inspection/Final Contract Trials ..... I-5C-1

CHAPTER 6 - POST SHAKEDOWN AVAILABILITY

6.1 Purpose ..... I-6-1

6.2 Planning and Execution ..... I-6-2

6.3 Trials, Inspections and Crew Certification ..... I-6-2

6.4 Sea Trials ..... I-6-2
6.4.1 General ..... I-6-2
6.4.2 Assignment of Escort Ship (Submarines only) ..... I-6-3
6.4.3 Assignment of Deep Submergence Rescue System Services (Submarines only) ..... I-6-3

6.5 Deficiency Correction Period ..... I-6-3

6.6 Period Following Post Shakedown Availability ..... I-6-3

Appendices
A Major Funding Milestones During Construction/Conversion ..... I-6A-1
B Post Shakedown Availability Planning Events Milestone Schedule ..... I-6B-1
C Summary of Major Milestones for Post Shakedown Availability ..... I-6C-1
D Minimum Post Shakedown Availability Sea Trial Requirements for a Submarine Deep Dive ..... I-6D-1

(This Page Intentionally Left Blank)

# VOLUME I

## CHAPTER 1

## INTRODUCTION

REFERENCES.

(a) NAVSEA S9086-C4-STM-000 - NSTM Chapter 094 (Trials)
(b) OPNAVINST 9080.3 - Procedures for Tests and Trials of Navy Nuclear Powered Ships Under Construction, Modernization, Conversion, Refueling and Overhaul
(c) OPNAVINST 4700.8 - Trials, Acceptance, Commissioning, Fitting-Out, Shakedown, and Post Shakedown Availability of U.S. Naval Ships Undergoing Construction or Conversion
(d) NAVSEAINST 4790.8/OPNAVINST 4790.4 - Ships' Maintenance and Material Management (3-M) Manual

LISTING OF APPENDICES.

A Summary of Typical New Construction Major Milestones and Message Reporting Requirements
B General Time Lines of Key Events
C List of Acronyms
D Glossary of Terms

1.1 PURPOSE. Volume I of this manual summarizes maintenance related information for all units of the Fleet during Ship construction and through the completion of Post Shakedown Availability (PSA). The time span is from initial crew man-up to departure from the PSA facility.

1.2 SCOPE.

a. New Construction ships require a succession of inspections and tests followed by a series of underway trials. The philosophy and sequencing of these inspections, tests, and trials are set forth in references (a), (b), and (c) and are graphically represented in Appendices A and B of this chapter. This Volume provides information, guidance, policies and procedures for maintenance related topics during the Ship's construction period. Reference (d) shall be used in conjunction with the Joint Fleet Maintenance Manual (JFMM) to establish an effective maintenance program. The requirements of this manual do not supersede or take precedence over directives issued by higher authority. Where conflicts exist with previously issued Type Commander (TYCOM) letters and transmittals, this manual takes precedence. Conflicts should be reported to the applicable TYCOM.

b. The development of this and subsequent volumes to the JFMM has required the study of numerous reference documents, many of which are referenced as source or governing documents in specific chapters. The Foreword of this Manual contains a Master Listing of all the references called out in the JFMM. These references are arranged in an alpha/numeric sequence to facilitate the ordering of documentation to support the use of the JFMM. References used in specific chapters are called out at the beginning of that chapter.

c. Appendices C and D of this chapter contain a list of acronyms and a glossary of terms used throughout Volume I of the JFMM.

d. Equipment under the cognizance of the Strategic Systems Programs and Naval Sea Systems Command (NAVSEA) Nuclear Propulsion Directorate (08) are maintained in accordance with Strategic Systems Programs and NAVSEA 08 directives, respectively.

1.3 CHANGES AND CORRECTIONS. Changes and corrections will be issued as required. Comments and suggestions for improving or changing this volume are invited. Address comments, recommendations, and requested changes to Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) Activity utilizing the change request form located in the front of this manual. If changes are submitted in electronic format, facsimile or E-mail, each change request shall contain the information required on the change request form.

1.4 REQUEST FOR COPIES OF THE MANUAL. Activities on distribution for the JFMM that require additional copies or activities wanting to be added to distribution should submit a letter to their applicable TYCOM, identifying CD-ROM requirements along with justification for the request. To the maximum extent possible, technical publications libraries at each activity will receive all copies of the manual for that activity and coordinate local distribution and updates.

## APPENDIX $A_1$

## SUMMARY OF TYPICAL NEW CONSTRUCTION MAJOR MILESTONES AND MESSAGE REPORTING REQUIREMENTS FOR SUBMARINES

| Event | Cognizance | Approximate Schedule (see Note) |
|---|---|---|
| A. Arrival Assist | Immediate Superior in Command (ISIC) | Crew Arrival +2 months |
| B. Periodic Monitoring Inspections | ISIC | Start to completion |
| C. Pre-Reactor Safeguard Examination (RSE) | ISIC (TYCOM Assist) | Criticality -6 to -8 weeks |
| D. RSE per OPNAVINST 3540.3 | Naval Sea Systems Command (NAVSEA) Nuclear Propulsion Directorate (08) | Criticality -4 to -6 weeks |
| E. Criticality | Prospective Commanding Officer (PCO) | |
| F. Escort Recommendation Message | ISIC/Supervising Authority | -60 days |
| G. Phase I Crew Certification | ISIC | -35 days |
| H. Salvage Inspection | ISIC | -30 days |
| I. Habitability Inspection for In-Service per OPNAVINST 9080.3 | ISIC | -30 days |
| J. Approve Sea Trial Agendas *<br><br>* Only Alpha Trial Agenda is approved 30 days before trial date | NAVSEA for Propulsion Trials; Director, Strategic Systems Programs for Ballistic Missile Trials; Board of Inspection and Survey (INSURV) for Acceptance Trial (AT); TYCOM for Operational Aspects all Trials | -30 days |
| K. In-Service per OPNAVINST 4700.8 and OPNAVINST 9080.3 | Supervising Authority<br><br>NAVSEA, ISIC and TYCOM | -28 days |
| L. Dock Trial | Officer in Charge (OIC) | -21 days |
| M. Phase II Crew Certification Message (Volume I, Chapter 2, Appendix $B_1$) | ISIC | -9 days |
| N. Crew Certification Message<br><br>(Volume I, Chapter 2, Appendix $B_3$) | TYCOM | -8 days |
| O. Readiness for Fast Cruise/Sea Trial Message (Volume I, Chapter 2, Appendix $B_4$) | Supervising Authority/OIC concurrence | -7 days |
| P. Certify Material Condition for Alpha Sea Trial Message (Volume I, Chapter 2, Appendix $B_8$) | NAVSEA | -7 days |
| Q. Authorize Commencement of Sea Trial Message | TYCOM to ISIC to Ship | -7 days |

| Event | Cognizance | Approximate Schedule (see Note) |
|---|---|---|
| R. Fast Cruise | OIC | -6 days (2 days on, 1 day off, 2 days on) |
| S. Report Completion of Fast Cruise and Readiness for Sea Trial Message (Volume I, Chapter 2, Appendix $B_7$) | Supervising Authority (with OIC concurrence) to TYCOM | -1 day |
| T. Depth Authorization Message (Volume I, Chapter 2, Appendix $B_9$) | TYCOM | -1 day |
| U. Alpha Sea Trial | OIC | 0 |
| V. Readiness for Bravo Sea Trial Message (Volume I, Chapter 2, Appendix $C_1$) | Supervising Authority | Bravo Sea Trial -1 day |
| W. Readiness for Bravo Sea Trial Message (Volume I, Chapter 2, Appendix $C_2$) | NAVSEA | Bravo Sea Trial -1 day |
| X. Bravo Sea Trial Authorization Message (Volume I, Chapter 2, Appendix $C_3$) | TYCOM | Bravo Sea Trial -1 day |
| Y. Bravo Sea Trial | OIC | +3 days |
| Z. Readiness for Charlie Sea Trial Message (Volume I, Chapter 2, Appendix $C_1$) | Supervising Authority | Charlie Sea Trial -1 day |
| AA. Readiness for Charlie Sea Trial Message (Volume I, Chapter 2, Appendix $C_2$) | NAVSEA | Charlie Sea Trial -1 day |
| AB. Charlie Sea Trial Authorization Message (Volume I, Chapter 2, Appendix $C_3$) | TYCOM | Charlie Sea Trial -1 day |
| AC. Charlie Sea Trial | OIC | +45 days |
| AD. Readiness for INSURV Sea Trial Message (Volume I, Chapter 2, Appendix $C_1$) | Supervising Authority | INSURV Sea Trial -1 day |
| AE. Readiness for INSURV Sea Trial Message (Volume I, Chapter 2, Appendix $C_2$) | NAVSEA | INSURV Sea Trial -1 day |
| AF. INSURV Sea Trial Authorization Message (Volume I, Chapter 2, Appendix $C_3$) | TYCOM | INSURV Sea Trial -1 day |
| AG. INSURV | Supervising Authority and OIC | +60 days |
| AH. Recommendation for Unrestricted Operations Certification Message (Volume I, Chapter 2, Appendix $D_1$) | Supervising Authority | |
| AI. Unrestricted Operations Certification Message (Volume I, Chapter 2, Appendix $D_2$) | NAVSEA | |
| AJ. Unrestricted Operation Authorization Message (Volume I, Chapter 2, Appendix $D_3$) | TYCOM | |

Note: Unless otherwise indicated, scheduled dates are referenced to the Alpha Sea Trial underway date.

## APPENDIX $A_2$

## SUMMARY OF TYPICAL NEW CONSTRUCTION MAJOR MILESTONES AND MESSAGE REPORTING REQUIREMENTS FOR AIRCRAFT CARRIERS

| Event | Cognizance | Approximate Schedule (see Note) |
|---|---|---|
| A. Periodic Monitoring Inspections | TYCOM | Start to Completion |
| B. Pre-RSE | TYCOM | |
| C. Habitability Inspection for In-Service per OPNAVINST 9080.3 | TYCOM | -180 days |
| D. Phase I Crew Certification | ISIC | -120 days |
| E. RSE per OPNAVINST 3540.3 | NAVSEA 08 | |
| F. Criticality | PCO | -90 and -60 days |
| G. Approve Sea Trial Agenda | NAVSEA (for Builder's Trials (BT))<br>INSURV (for AT) | -70 days |
| H. In-Service per OPNAVINST 4700.8 and OPNAVINST 9080.3 | Supervising Authority, NAVSEA, TYCOM | -65 days |
| I. Dock Trial | PCO | -60 days |
| J. Phase II Crew Certification Message | ISIC | -55 days |
| K. Crew Certification Message | ISIC | -50 days |
| L. Readiness for Fast Cruise/Sea Trial Message | Supervising Authority, w/PCO concurrence | -50 days |
| M. Authorize Commencement of Sea Trial Message | TYCOM | -46 days |
| N. Fast Cruise | PCO | -45 days |
| O. Report Completion of Fast Cruise and Ready for Sea Trial Message | Supervising Authority, w/PCO concurrence | -40 days |
| P. Builder's Trials | PCO | -30 days |
| Q. Acceptance Trials | PCO | -21 days |
| R. Readiness for Final Contract Trials (FCT) Message | NAVSEA | +59 days |
| S. Final Contract Trials | CO | +60 days |
| T. Operational Reactor Safeguard Examination (ORSE) | NAVSEA 08 | |

Note: Unless otherwise indicated, scheduled dates are referenced to the Delivery date.

(This Page Intentionally Left Blank)

## APPENDIX $A_3$

## SUMMARY OF TYPICAL NEW CONSTRUCTION MAJOR MILESTONES AND MESSAGE REPORTING REQUIREMENTS FOR SURFACE FORCES

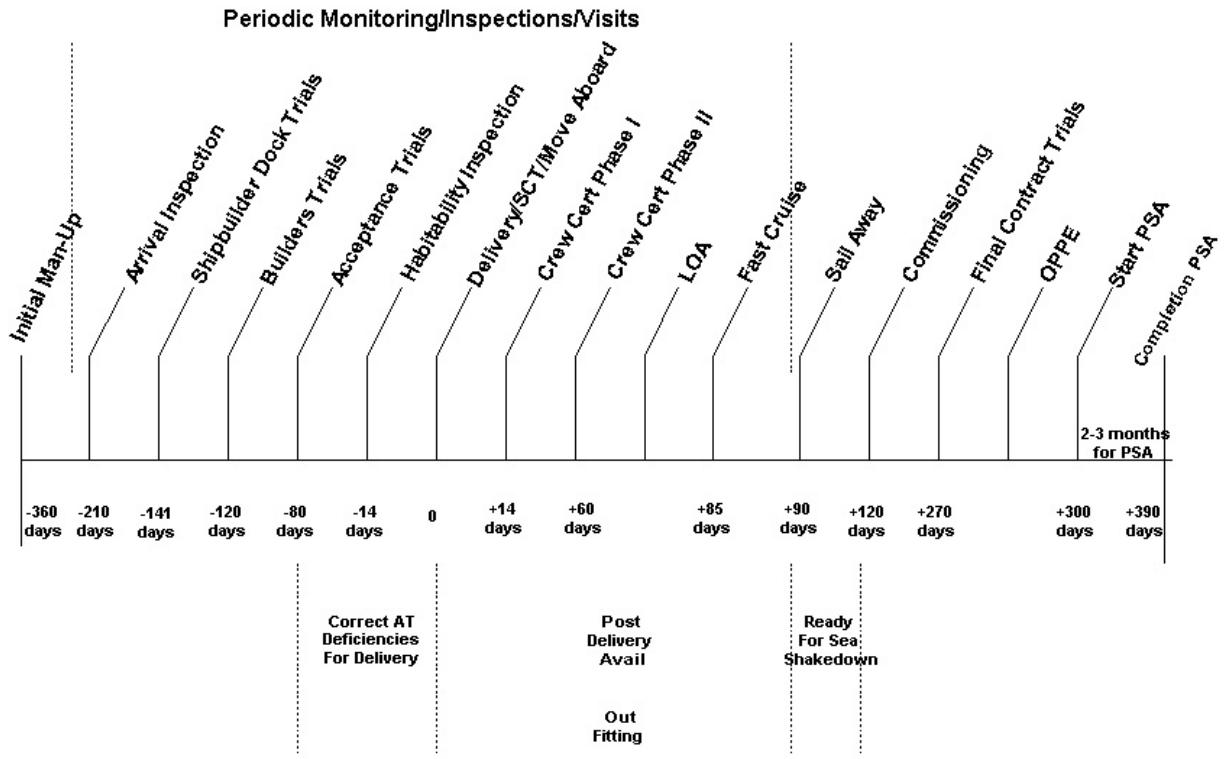
| Event | | Cognizance | Approximate Schedule (see Note) | | | | |
|---|---|---|---|---|---|---|---|
| | | | AOE | DDG | LHD | LPD/LSD | MHC |
| A. | Arrival Inspection | ISIC/TYCOM | Crew Arrival | | | | |
| B. | Periodic Monitoring Inspections | ISIC/TYCOM | Start To Completion | | | | |
| C. | AEGIS Light-Off (If applicable) | NAVSEA/Supervising Authority | | -300 days | | | |
| D. | Main Engine Light-Off | NAVSEA/Supervising Authority | | -210 days | | | |
| E. | Builder's Dock Trial | Supervising Authority | -141 days | -210 days | | | -180 days |
| F. | Builder's Trial (Alpha) | Supervising Authority | -120 days | -120 days | -130 days | | -90 days |
| G. | Builder's Trial (Bravo) "Combat Systems" | Supervising Authority | | -60 days | | | |
| H. | Builder's Trial (Charlie) "Acceptance" | Supervising Authority | -60 days | -30 days | -60 days | -90 days | -30 days |
| I. | Habitability Inspection for In-Service per OPNAVINST 9080.3 | ISIC | -14 days | -14 days | -3 days | -14 days | -14 days |
| J. | Phase I Crew Certification | ISIC | +14 days | | | -120 days | +10 days |
| K. | Phase II Crew Certification | ISIC | +60 days | +60 days | +80 days | +8 days | +65 days |
| L. | Light-Off Assessment (LOA) | ISIC/TYCOM | +70 days | -15 days | +70 days | +45 days | +60 days |
| M. | In-Service per OPNAVINST 4700.8 "Delivery" | NAVSEA/Supervising Authority/TYCOM | 0 | 0 | 0 | 0 | 0 |
| N. | Dock Trial | PCO | | | | | |
| O. | Fast Cruise | PCO | | | | | |
| P. | Commissioning | CO | +120 days | +14 days | +90 days | +60 days | +70 days |
| Q. | Sailaway | CO | +90 days | | +95 days | +90 days | +80 days |
| R. | Final Contract Trials | Supervising Authority | +330 days | +120 days | +270 days | +210 days | +90 days |
| S. | Operational Propulsion Plant Examination (OPPE) | ISIC/TYCOM | +345 days | +180 days | +345 days | +225 days | +105 days |
| T. | Commence PSA | Supervising Authority | +360 days | | +420 days | +240 days | +120 days |

Note: Unless otherwise indicated, scheduled dates are referenced to the Delivery date.

(This Page Intentionally Left Blank)

# APPENDIX $B_1$

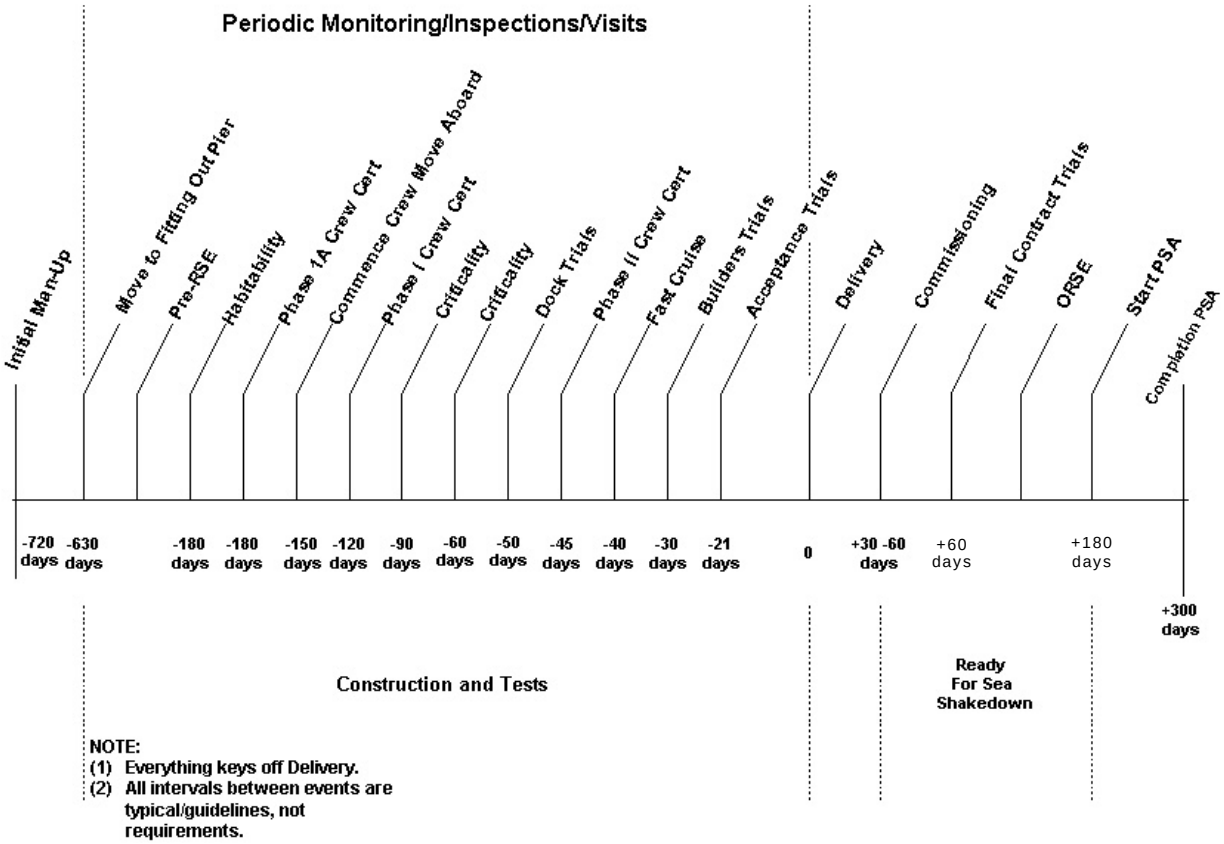
## AOE
## GENERAL TIME LINE OF KEY EVENTS




NOTE:
(1) Everything keys off Delivery.
(2) Move Aboard and Ship Custody Transfer happen at Delivery.
(3) All intervals between events are typical/guidelines, not requirements.

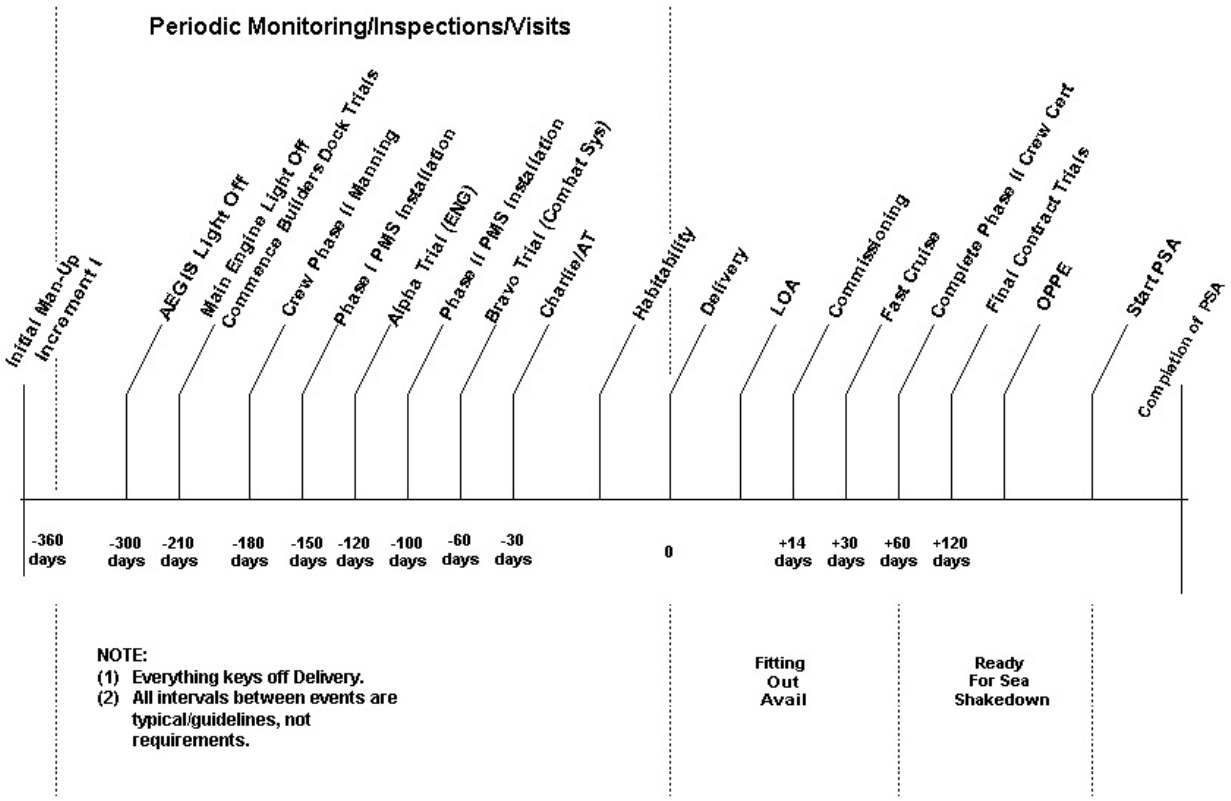
# APPENDIX $B_2$

## CVN
## GENERAL TIME LINE OF KEY EVENTS



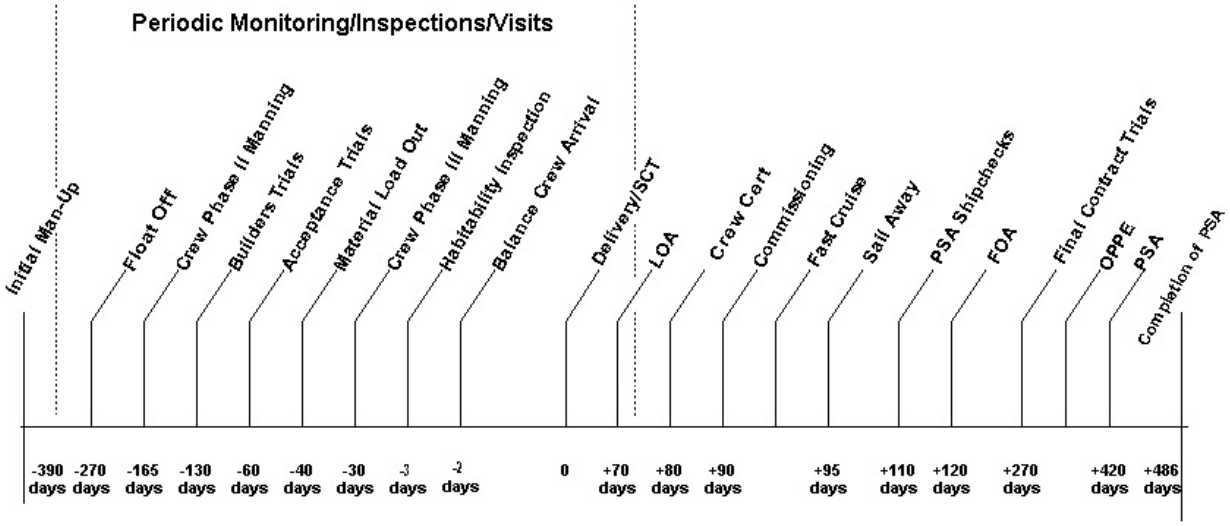
# APPENDIX $B_3$

## DDG
## GENERAL TIME LINE OF KEY EVENTS



# APPENDIX $B_4$

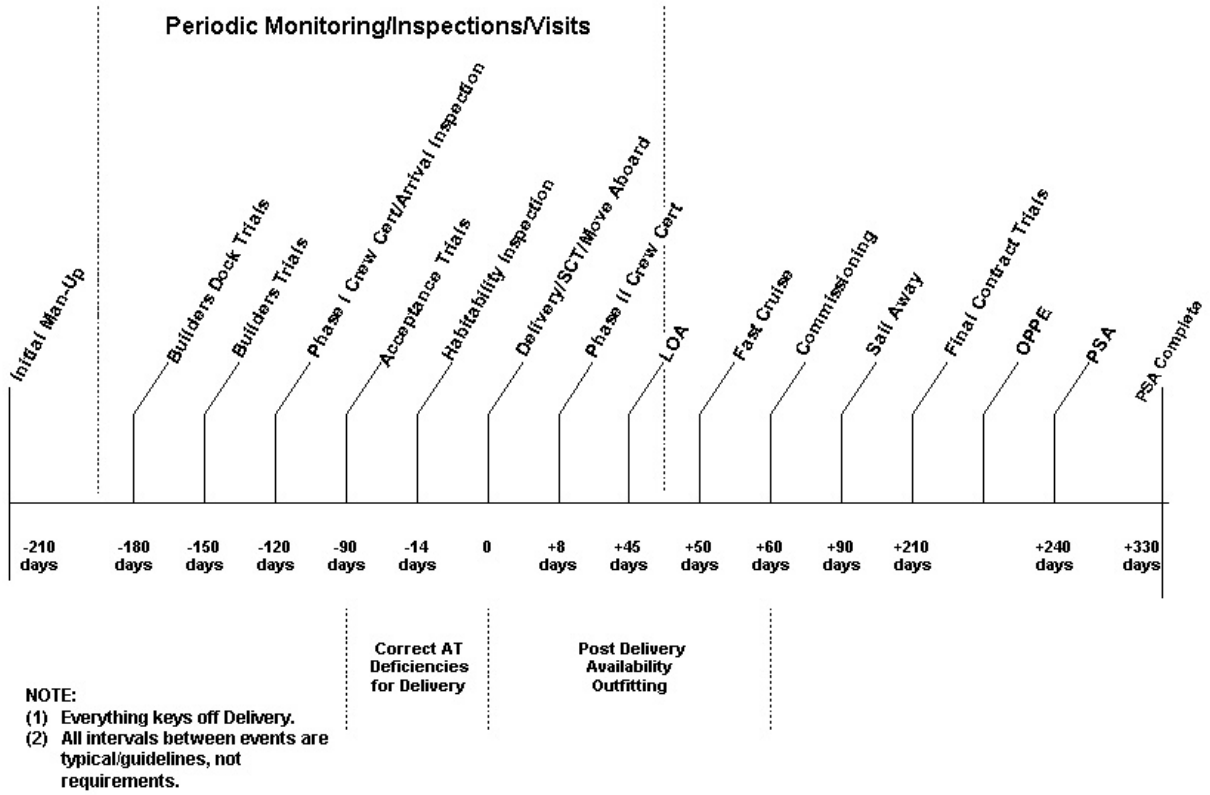
## LHD
## GENERAL TIME LINE OF KEY EVENTS




NOTE:
(1) Everything keys off Delivery.
(2) All intervals between events are typical/guidelines, not requirements.

# APPENDIX $B_5$

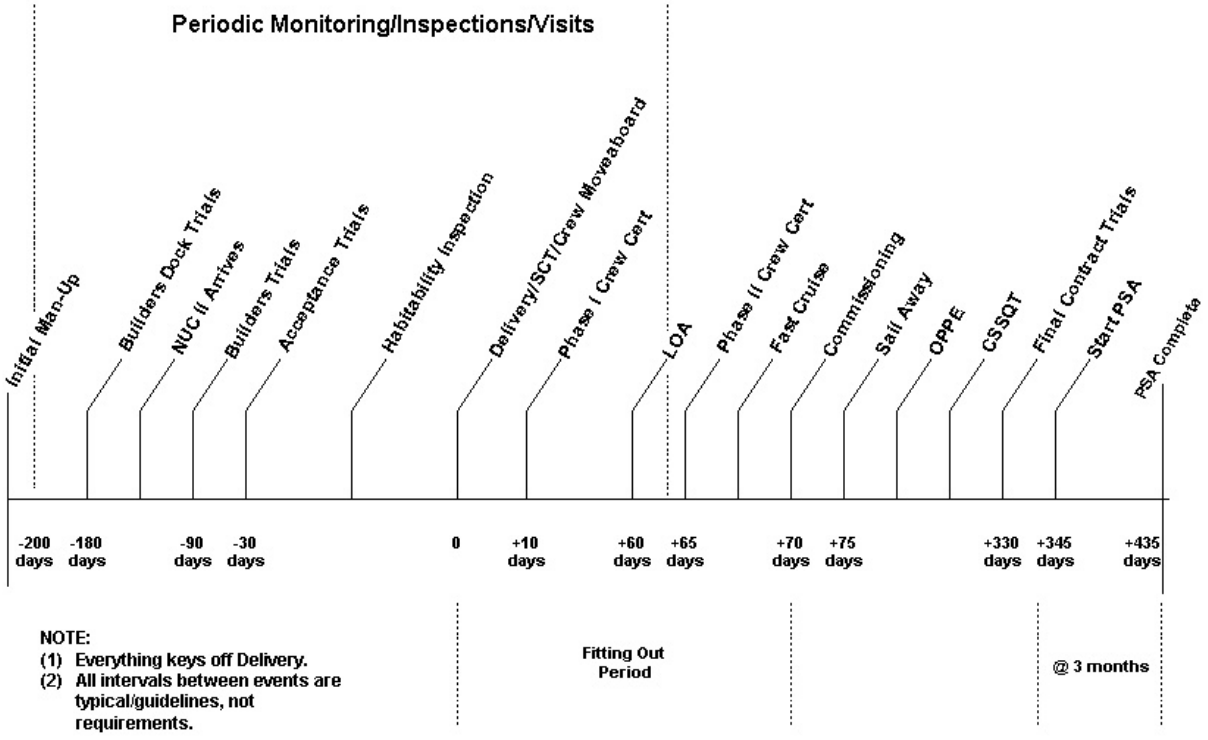
## LSD
## GENERAL TIME LINE OF KEY EVENTS




NOTE:
(1) Everything keys off Delivery.
(2) All intervals between events are typical/guidelines, not requirements.

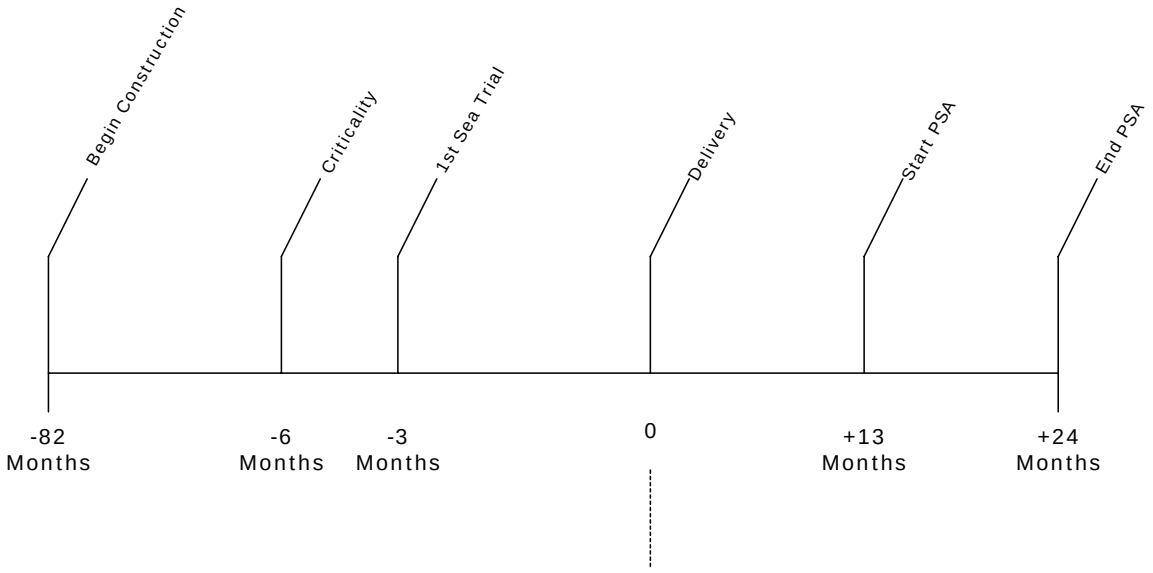
# APPENDIX $B_6$

## MHC
## GENERAL TIME LINE OF KEY EVENTS



# APPENDIX $B_7$

## USS VIRGINIA (SSN 774)
## GENERAL TIME LINE OF KEY EVENTS




NOTE:
(1) Everything keys off Delivery.
(2) All intervals between events are typical/guidelines, not requirements.

(This Page Intentionally Left Blank)

## APPENDIX C

## LIST OF ACRONYMS

| | |
|---|---|
| 2M | Miniature/Microminiature |
| 3-M | Maintenance and Material Management |
| | |
| A&I | Alteration and Improvement |
| ACN | Advanced Change Notice |
| AEL | Allowance Equipage List |
| AOE | Fast Combat Support Ship |
| APL | Allowance Parts List |
| AT | Acceptance Trial |
| | |
| BDT | Builder's Dock Trial |
| BST | Builder's Sea Trial |
| BT | Builder's Trial |
| BUPERS | Bureau of Personnel |
| | |
| CAGE | Commercial and Government Entity |
| CASREP | Casualty Report |
| CD-ROM | Compact Disc Read Only Memory |
| CFE | Contractor Furnished Equipment |
| CHT | Collection, Holding and Transfer |
| CNO | Chief of Naval Operations |
| CO | Commanding Officer |
| COMFLTFORCOM | Commander, Fleet Forces Command |
| COMLANTFLT | Commander, Atlantic Fleet |
| COMNAVSEASYSCOM | Commander, Naval Sea Systems Command |
| COMNAVSURFLANT | Commander Naval Surface Force Atlantic |
| COMPACFLT | Commander, Pacific Fleet |
| COMSUBDEVRON | Commander Submarine Development Squadron |
| COSAL | Coordinated Shipboard Allowance List |
| CS/CCS | Command and Control Systems |
| CSCT | Combat Systems Certification Trial |
| CSMP | Current Ship's Maintenance Project |
| CSSQT | Combat System Ship Qualification Trials |
| CT | Combined Trial |
| CVN | Nuclear-Powered Aircraft Carrier |
| CW | Continuous Wave |
| | |
| DDG | Guided Missile Destroyer |
| DIRSSP | Director, Strategic Systems Programs |
| DRA | Dead Reckoning Analyzer |
| DRAI | Dead Reckoning Analyzer Indicator |
| DRT | Dead Reckoning Tracer |
| DSRS | Deep Submergence Rescue System |
| DSRV | Deep Submergence Rescue Vehicle |

| | |
|---|---|
| EAB | Emergency Air Breathing |
| EDORM | Engineering Department Organization and Regulations Manual |
| EEBD | Emergency Escape Breathing Device |
| EGL | Equipment Guide List |
| EMBT | Emergency Main Ballast Tank |
| EOSS | Engineering Operational Sequencing System |
| EPM | Emergency Propulsion Motor |
| ESM | Electronic Warfare Support Measures |
| ETG | Engineering Training Group |
| FBW SCS | Fly-By-Wire Ship Control System |
| FCT | Final Contract Trial |
| FFC | Fleet Forces Command |
| FIT | Fleet Introduction Team |
| FMA | Fleet Maintenance Activity |
| FMR | Field Modification Request |
| FOSAT | Fitting Out Supply Assistance Team |
| FOSSAC | Fitting Out and Supply Support Assistance Center |
| FTC | Fleet Training Center |
| GFE | Government Furnished Equipment |
| GFI | Government Furnished Information |
| GMI | Guarantee Material Inspection |
| GPETE | General Purpose Electronic Test Equipment |
| HF | High Frequency |
| HMR | Headquarters Modification Request |
| IEM | Inactive Equipment Maintenance |
| IFF | Identification Friend or Foe |
| INSURV | Inspection and Survey |
| ISE | Independent Ship Exercise |
| ISEA | In-Service Engineering Activity |
| ISIC | Immediate Superior in Command |
| JFMM | Joint Fleet Maintenance Manual |
| JFMMBOD | Joint Fleet Maintenance Manual Board of Directors |
| JSN | Job Sequence Number |
| LHD | Amphibious Assault Ship |
| LOA | Light-Off Assessment |
| LOEP | List of Effective Pages |
| LSD | Dock Landing Ship |

| | |
|---|---|
| MACHALT | Machinery Alteration |
| MBT | Main Ballast Tank |
| METCAL | Metrology and Calibration |
| MHC | Coastal Minehunter |
| MIP | Maintenance Index Page |
| MRC | Maintenance Requirement Card |
| MRMS | Maintenance Resources Management System |
| MSW | Main Seawater |
| MT | Magnetic Particle Testing |
| MTR | Metrology and Calibration Technical Representative |
| | |
| NAVAIR | Naval Air Systems Command |
| NAVMASSO | Navy Management Systems Support Office |
| NAVSEA | Naval Sea Systems Command |
| NAVSEA 08 | Naval Sea Systems Command Nuclear Propulsion Directorate |
| NAVSUP | Naval Supply Systems Command |
| NAWC | Naval Air Warfare Center |
| NJP | Non-judicial Punishment |
| NSTM | Naval Ships' Technical Manual |
| NSWC | Naval Surface Warfare Center |
| NSWCCD | Naval Surface Warfare Center Carderock Division |
| NTP | Naval Telecommunication Procedures |
| | |
| O&MN | Operations and Maintenance, Navy |
| OCT | Operational Control Transfer |
| OIC | Officer In Charge |
| OPNAV | Office of Chief of Naval Operations |
| OPPE | Operational Propulsion Plant Examination |
| ORDALT | Ordnance Alteration |
| ORSE | Operational Reactor Safeguard Examination |
| OSI | Operating Space Item |
| OSS | Operational Sequencing System |
| | |
| PCO | Prospective Commanding Officer |
| PCU | Pre-Commissioning Unit |
| PDDI | Post Delivery Deficiency Item |
| PLAD | Plain Language Address Directory |
| PMS | Planned Maintenance System |
| POAM | Plan of Action and Milestones |
| PQS | Personnel Qualification Standard |
| PSA | Post Shakedown Availability |
| | |
| QA | Quality Assurance |
| | |
| RDORM | Reactor Department Organization and Regulations Manual |
| RMC | Regional Maintenance Center |
| RSE | Reactor Safeguard Examination |
| RT | Radiographic Testing |

| | |
|---|---|
| SCN | Shipbuilding and Conversion, Navy |
| SDI | Ship Drawing Index |
| SDOSS | Sewage Disposal Operational Sequencing System |
| SHIPALT | Ship Alteration |
| SIB | Ship Information Book |
| SITREP | Situation Report |
| SME | Subject Matter Expert |
| SMMSO | Submarine Systems Monitoring Maintenance and Support Office |
| SNAP | Shipboard Nontactical Automated Data Processing Program |
| SOE | Submerged Operating Envelope |
| SORM | Ship Organization and Regulation Manual |
| SOSMRC | Senior Officer Ship Maintenance and Repair Course |
| SPALT | Strategic System Programs Alteration |
| SRD | Selected Record Drawing |
| SSBN | Nuclear-Powered Ballistic Missile Submarine |
| SSGN | Nuclear-Powered Guided Missile Submarine |
| SSM | Ship Systems Manual |
| SSN | Nuclear-Powered Attack Submarine |
| SUBMEPP | Submarine Maintenance Engineering, Planning and Procurement Activity |
| SUBSAFE | Submarine Safety |
| SUPSHIP NN | Supervisor of Shipbuilding Newport News |
| SWOS | Surface Officer Warfare School |
| SYSCOM | Systems Command |
| | |
| TD | Test Depth |
| TDU | Trash Disposal Unit |
| TEMPEST | National Policy on the Control of Compromising Emanations (unclassified code name) |
| TFBR | Technical Feedback Report |
| TVD | Technical Variance Documentation |
| TYCOM | Type Commander |
| | |
| UHF | Ultrahigh Frequency |
| URO | Unrestricted Operations |
| | |
| VLS | Vertical Launch System |
| VTI | Visual TEMPEST Inspection |

## APPENDIX D

## GLOSSARY OF TERMS

| TERM | DEFINITION |
|---|---|
| Alpha Trial | Builder's Propulsion Trial; Acceptance Trial for SSN Propulsion Plant; Initial Tightness Dive (SSN); Dive to Maximum Authorized Depth (Selected SSN platforms). |
| Acceptance Trials (AT) | Trials and material inspections conducted underway by the INSURV Board for ships constructed in a private industrial activity to determine suitability for acceptance of a ship by the Navy. |
| Accepting Authority | The officer designated by the Chief of Naval Operations (CNO) to accept a vessel for the Navy, normally NAVSEA. |
| Bravo Trial | Normally the initial Dive to Test Depth; Noise Trial (SSN); Weapons testing (Surface Combatants). |
| Builder's Trials (BT) | Evaluation trials and inspections conducted underway by the builder to assure the builder and the Navy that the ship is, or will be, ready for Acceptance Trials. These trials should be a comprehensive test of all ship's equipment and be similar in scope to Acceptance Trials. For nuclear powered surface ships this is the Acceptance Trial for the Nuclear Propulsion plant. |
| Charlie Trial | Combat Systems and retesting (SSN); Acceptance Trials (DDG). |
| Combined Trials (CT) | Combined Trials are a combination of an Acceptance Trial with a Final Contract Trial. The INSURV Board normally conducts Combined Trials for nuclear powered submarines. |
| Deep Dive | The first dive to maximum operating depth. This depth will not necessarily coincide with the design test depth of the hull. See definition of Maximum Operating Depth. |
| Delivery | The date the Navy accepts the ship from the shipbuilder. This requires a recommendation from the INSURV Board to accept/deliver the ship. Delivery of the ship is based on Acceptance Trials and satisfactory correction or resolution of deficiencies. |
| Dock Trial | Dock Trials are those ship trials conducted at the Industrial Activity to determine the ability of the ship, from a material standpoint, to conduct Sea Trials safely. |
| Fast Cruise | A period immediately prior to underway trials during which Ship's Force operates the ship for dockside training. Fast Cruise shall, as far as is practical, simulate at-sea operating conditions. |

| | |
|---|---|
| Final Contract Trials (FCT) | Trials that are conducted prior to the end of the guarantee period to determine if there are any defects, failures, or deterioration other than that due to normal wear and tear. |
| Fleet Introduction Team (FIT) | A team of personnel assembled to support a pre-commissioning crew by monitoring progress of construction and coordinating training and facilities. They provide administrative support in all facets of new construction. |
| Fleet Week | Top Management Attention (TMA) O-6 level panel meeting to discuss the Technical Ticklers, review action items, close issues where action is complete and refer issues to Top Management Issues that require Flag level action. Fleet Week is held twice a year, generally in October and April. |
| Guarantee Material Inspection (GMI) | A material inspection, conducted inport prior to Post Shakedown Availability (PSA) by a Trial Board prior to the end of the guarantee period when CNO has authorized a Combined Trial to determine if contractor responsible equipment has operated satisfactorily during the guarantee period. It shall include the opening and inspection of equipment designated by the Board together with the operation and visual inspection of equipment and the review of material maintenance records. |
| Guarantee Period (New Construction) | The period of time immediately following preliminary acceptance (delivery), normally eight or nine months (six months for nuclear powered ships), for which the industrial activity is responsible for the correction of deficiencies. |
| Guarantee Period (PSA) | The guarantee period following PSA varies with the type of contract. Historically, a "cost plus" type contract has had a guarantee period of six months and a "fixed price" type contract a period of 90 days. The Supervising Authority will advise at the time of PSA the guarantee that applies. |
| In-Service | Nuclear powered ships are assigned an active status of In-Service approximately two to four weeks (two to four months for Nuclear Powered Aircraft Carriers) prior to the commencement of Sea Trials and maintain this status until commissioning. |
| Industrial Activity | The activity responsible for accomplishing construction or repair of ships whether private or public. This includes Naval shipyards, private shipyards, shipbuilders, vendors, Naval Aviation Depots, Naval Ship Repair Facilities, and other Naval Repair/Technical Activities (i.e., Naval Underwater Weapons Center, Naval Ships Weapons Center, etc.). |
| Initial Dive | For purposes of seawater valve and system testing, as defined in NAVSEAINST C9094.2, the first dive to a depth not previously reached during the trials. |
| Initial Tightness Dive | First submergence (a submarine's Alpha Trial). |
| INSURV | Prior to the acceptance and delivery of a new ship, whether built by a private or a naval industrial activity, all machinery, electronics and weapons systems installed shall be subjected to acceptance trials to determine that the installations are capable of meeting performance specifications. Depending upon your platform these trials are referred to as either Acceptance Trials, Combined Trials or INSURV. This independent verification of the ship's readiness for acceptance and recommendation for fleet introduction is the responsibility of the President, Board of Inspection and Survey. |

| | |
|---|---|
| Lead Maintenance Activity | The single activity responsible for integrating all maintenance and modernization on U.S. Naval ships during any type of availability. |
| Maximum Operating Depth (Also Maximum Authorized Operating Depth) | The depth to the keel for a particular submarine which is authorized by Commander Submarine Forces Atlantic/Commander Submarine Forces Pacific upon the recommendation of NAVSEA, as the depth not to be exceeded in operations. This depth is normally the Test Depth but may be reduced in specific cases. The depth authorized may be less than, but in no case exceed, the depth recommended by NAVSEA. |
| Mid-Cycle | Intermediate meeting held between Fleet Weeks to discuss a limited number of Technical Ticklers and pending action items. |
| Moderate Speed | The range of speed that allows the submarine optimum recovery (as shown on applicable submerged operating envelope curves) if loss of stern plane control and/or flooding occurs. Normally 8-15 knots. |
| Naval Supervising Authority/Supervising Authority | The officer designated to represent the Navy Department at an industrial activity; normally a Supervisor of Shipbuilding (new construction), Regional Maintenance Center (Conversion and Repair), or the Commander of a Naval Shipyard. |
| Post Shakedown Availability (PSA) | An industrial activity availability following Final Contract Trials/Guarantee Material Inspection assigned to correct deficiencies found during the shakedown period or to accomplish other authorized improvements. |
| Technical Tickler | A "living document" submitted by the Commander, Fleet Forces Command Maintenance Officer to present the Fleet's top material readiness issues to COMNAVSEASYSCOM and Office of the Chief of Naval Operations Resource Sponsors and used subsequently to record and track their planned corrective action. |
| Test Depth (TD) | The depth defined by OPNAVINST 9110.1 which is the depth to the axis of the hull prescribed by the detailed and special specifications for building the particular submarine, to which the ship is tested by actual submergence when so authorized. Test Depth equals keel depth plus zero (0) feet, minus twenty (20) feet (TD = Keel depth + 0/-20 feet). |
| Top Management Issues (TMI) | Top Management Issues, flag level panel meeting to discuss those issues requiring identification or realignment of resources (funding or manpower), or flag level participation to resolve. |
| Valve Repair/Restoration/ Overhaul | a. Repair. Any work done to improve the material condition or operation of the valve correcting deficient conditions such that the component may be returned to service, but which, in total does not meet the full intent of the applicable restoration/overhaul technical standard, is considered a repair.<br><br>b. Restoration/Overhaul. All valve parts replaced or restored to the requirements of the applicable technical standard (e.g., the full intent of the restoration/overhaul technical standard is invoked). |

(This Page Intentionally Left Blank)

# VOLUME I

## CHAPTER 2

## POLICIES AND RESPONSIBILITIES

REFERENCES.

(a) OPNAVINST 4700.8 - Trials, Acceptance, Commissioning, Fitting Out, Shakedown, and Post Shakedown Availability of U.S. Naval Ships Undergoing Construction or Conversion
(b) OPNAVINST 9080.3 - Procedures for Tests and Trials of Navy Nuclear Powered Ships Under Construction, Modernization, Conversion, Refueling and Overhaul
(c) NAVSEA 0924-LP-062-0010 - Submarine Safety (SUBSAFE) Requirements Manual
(d) NAVSEA T9044-AD-MAN-010 - Requirements Manual for Submarine Fly-By-Wire Ship Control Systems
(e) INSURVINST 4730.1 - Trials and Inspections of Surface Ships
(f) INSURVINST 4730.2 - Trials and Material Inspections of Submarines
(g) NAVSEA S0300-B2-MAN-010 - Supervisor of Shipbuilding, Conversion and Repair Operations Manual
(h) NAVSEAINST 4790.8/OPNAVINST 4790.4 - Ship's Maintenance and Material Management (3-M) Manual
(i) NAVSEAINST 4734.1 - NAVSEA Test, Measurement, and Diagnostic Equipment (TMDE) and Calibration Programs
(j) NAVSEA ST700-AM-PRO-010 - Test and Monitoring Systems (TAMS) Program Operations and Procedures
(k) NAVSEA ST700-AM-GYD-010 - Metrology and Calibration (METCAL) Laboratory Requirements and Certification Guide
(l) NAVAIR 17-35MTL-1/NAVSEA OD 45845 - Metrology Requirements List (METRL)
(m) NAVSEAINST C9210.30 - Procedures for Administration of Nuclear Reactor Plant Preventive Maintenance and Tender Nuclear Support Facilities Preventive Maintenance on Ships
(n) OPNAVINST C3000.5 - Operation of Naval Nuclear Powered Ships
(o) COMNAVSUBFOR OPORD 2000
(p) SSPINST 5600.11 - Preventive Maintenance Management Program for Strategic Weapon Systems Equipments and Associated Material
(q) COMSUBLANT/COMSUBPACINST C3500.1 - Submarine Force Training Manual
(r) COMNAVSURFLANT/COMNAVSURFPACINST 3502.2 - Surface Force Training Manual
(s) COMNAVAIRLANT/COMNAVAIRPACINST 3500.20 - Aircraft Carrier Training and Readiness Manual
(t) OPNAVINST C9210.2 - Engineering Department Manual for Naval Nuclear Propulsion Plants
(u) OPNAVINST 4790.15 - Aircraft Launch and Recovery Equipment Maintenance Program (ALREMP)
(v) COMNAVSURFLANTINST 3540.18/COMNAVSURFPACINST 3540.13 - Engineering Department Organization and Regulations Manual (EDORM)
(w) COMSUBLANT/COMSUBPACINST C5400.30 - Engineering Department Organization Manual
(x) COMNAVSURFLANTINST 4700.4 - Fleet Introduction Handbook

LISTING OF APPENDICES.


| | |
|---|---|
| A | Message Scenario and Sample Messages/Letters for Habitability Inspections and In-Service |
| B | Message Scenario and Sample Messages for Fast Cruise and Alpha Sea Trial (Nuclear Powered Ships) |
| C | Message Scenario and Sample Messages for Bravo, Charlie and Combined Trials (Submarines) |
| D | Message Scenario and Sample Messages for URO Certification (Submarines) |
| E | Sample Supervising Authority Message to Ship Program Manager and TYCOM Concerning PSA Fast Cruise/Sea Trial Readiness (Submarines) |
| F | Sample Ship Program Manager Message to TYCOM Concerning PSA Sea Trial Authorization (Submarines) |
| G | Sample NAVSEA Message to TYCOM Recommending Unrestricted Operations Be Authorized Following the Completion of PSA (Submarines) |
| H | Pre-RSE/RSE/Criticality/Power Range Testing Logic Table (All Nuclear Powered Ships) |
| I | Sample TYCOM Message Concerning Sea Trial Agenda (Submarines) |
| J | Sample TYCOM DSRS Support Services Message (Submarines) |
| K | Sample TYCOM Message to PCU Concerning Use of the FBW SCS In Support of Alpha Sea Trials (Submarines) |
| L | Sample TYCOM Message to PCU Concerning FBW SCS Material Condition Initial Certification (Submarines) |
| M | Sample TYCOM Message Concerning DSRS Support Services (Submarines) |
| N | Sample TYCOM Message to Ship Program Manager Concerning PSA Fast Cruise (Submarines) |
| O | Sample ISIC Crew Certification Message Following PSA (Submarines) |
| P | Sample TYCOM Message to Ship Concerning PSA Sea Trial Authorization (Submarines) |
| Q | Sample Supervising Authority Message to NAVSEA and TYCOM Concerning PSA Fast Cruise Completion (Submarines) |
| R | Sample Ship Message to TYCOM Concerning Material Certification Upon Completion of PSA (Submarines) |
| S | Sample TYCOM Message to Ship Authorizing Unrestricted Operations Following Completion of PSA (Submarines) |
| T | Sample Ship Message to TYCOM Concerning Material Certification (Submarines) |
| U | Sample Supervising Authority Message to NAVSEA Concerning Material Condition for Unrestricted Operation Following PSA (Submarines) |
| V | Sample TYCOM Message to the Ship Concerning FBW SCS Certification (Submarines) |
| W | Sample Supervising Authority Message to NAVSEA Concerning PCU FBW SCS Material Condition Readiness for Fast Cruise and Alpha Sea Trials (Submarines) |
| X | Sample Supervising Authority Message to TYCOM and NAVSEA Concerning PCU Fast Cruise Completion and Readiness of FBW SCS Material Condition for Alpha Sea Trials (Submarines) |
| Y | Sample Supervising Authority Message to NAVSEA Concerning PCU FBW SCS Material Condition Readiness Upon Completion of Alpha Sea Trials and Readiness of the FBW SCS for Use During Bravo and Subsequent Sea Trials (Submarines) |
| Z | Sample Supervising Authority Message to NAVSEA Concerning PCU FBW SCS Material Condition Initial Certification (Submarines) |
| AA | Pre Man-Up Checklist for TYCOM/ISIC |
| AB | Basic Requirements for Initial Man-up Personnel of the PCU (Detachment Concept) (CVN, DDG, LHD, LPD, AOE, LSD) |
| AC | Basic Requirements for Initial Man-up Personnel of the PCU (CVN, DDG, LHD, LPD, AOE, LSD, Submarines) |
| AD | Generic Base Line of Fleet Introduction Team (FIT) Functions and Responsibilities |
| AE | Sample NAVSEA Message to TYCOM Concerning PCU FBW SCS Material Condition Readiness for Alpha Sea Trials (Submarines) |
| AF | Sample NAVSEA Message to TYCOM Concerning PCU FBW SCS Material Condition Initial Certification (Submarines) |
| AG | Sample NAVSEA Message to TYCOM Concerning PCU Recommendation for Fly-By-Wire Ship Control System Certification |

2.1 SHIP PROGRAM MANAGERS. The various Naval Sea Systems Command (NAVSEA)/Program Executive Office for Carriers, Littoral Warfare and Auxiliary codes designated as Ship Program Managers provide the specifications for the building and testing of all ships. These codes are initially established to get the shipbuilding program and development of logistic support programs up and running.

2.1.1 Pre-Commissioning. Ship Program Manager responsibilities during the Pre-Commissioning phase of New Construction are delineated in references (a) and (b). The following is a summation of those responsibilities and is intended to be used as a guide, not to be considered all inclusive. Questions concerning a Ship Program Manager's specific functions should be directed to the applicable NAVSEA code.

a. Provide supervision and direction concerning all non-nuclear aspects of ship construction.

b. Provide written instructions to the Supervising Authority regarding the conduct and scheduling of all non-nuclear ship testing.

c. Generate the correspondence (message or letter traffic) as indicated in Appendix A of this chapter recommending the Habitability Inspection and In-Service dates.

d. The assignment of deficiency responsibility and ensuring the correction of those deficiencies identified during Combined Trials (CT), Acceptance Trials (AT), Final Contract Trials (FCT) and Guarantee Material Inspections (GMI).

e. (Submarines only) Report to the Type Commander (TYCOM), with information copies to Chief of Naval Operations (CNO) and Fleet Commander, that the material condition of the ship is certified satisfactory for Alpha Sea Trials and recommend authorization to dive the ship be granted under deliberate and controlled conditions to a specified depth for accomplishment of the approved Sea Trials agenda. Appendix B of this chapter provides a sample message.

f. (Submarines only) Report to the TYCOM that the material condition of the ship is certified satisfactory for Bravo, Charlie, and CTs. Appendix C of this chapter provides a sample message.

g. (Submarines only) After completion of all Sea Trials, report to the TYCOM that the material condition of the ship is certified for Unrestricted Operations (URO). Appendix D of this chapter provides a sample message.

2.1.2 Post Shakedown Availability (Submarines only). Ship Program Manager responsibilities during Post Shakedown Availability (PSA) are as follows:

a. Following receipt of the Supervising Authority message (Appendix E of this chapter) concerning Fast Cruise/Sea Trial readiness, report to the TYCOM via letter or message (Appendix F of this chapter), with information copies to the CNO and Fleet Commander, that the material condition of those parts of the ship installed, repaired and/or tested by the industrial activity are certified satisfactory for Sea Trials. Recommend authorization to dive the ship be granted under deliberate and controlled conditions to a specified depth for accomplishment of the approved Sea Trial Agenda pending TYCOM confirmation that the certification requirements of the remainder of the Submarine Safety (SUBSAFE) certification boundary have been sustained. Reference (c) applies.

b. For PSAs in excess of 6 months, report to the TYCOM via letter or message (Appendix G of this chapter) that those parts of the ship installed, repaired, and/or tested by the industrial activity are certified for URO and that no depth limiting discrepancies exist. Recommend authorization for URO to test depth per the requirements of references (a) and (b), pending confirmation by the TYCOM that the certification requirements for the remainder of the SUBSAFE boundary have been sustained.

2.2 NAVAL SEA SYSTEMS COMMAND NUCLEAR PROPULSION DIRECTORATE (NUCLEAR POWERED SHIPS ONLY).

2.2.1 Pre-Commissioning. NAVSEA Nuclear Propulsion Directorate (08) responsibilities for the Pre-Commissioning period are as follows:

a. Provide specifications for the building and testing of the nuclear propulsion plant.

b. Provide supervision and direction of nuclear propulsion plant testing and trials.

c. Approve the sequencing and scheduling of nuclear propulsion plant tests and trials.

d. Arrange for technical assistance from the U.S. Department of Energy, including the Pre-Critical Examination by the Director, Division of Naval Reactors.

e. Provide written instructions to the Supervising Authority regarding the conduct and scheduling of all dockside tests and underway trials involving operation of the nuclear propulsion plant.

f. Authorize critical operation of the reactor.

g. Authorize commencement of Fast Cruise after receiving notification from the Supervising Authority that the ship has demonstrated a satisfactory state of training.

2.2.2 Reactor Safeguard Examination. A Pre-critical Reactor Safeguard Examination (RSE) will be conducted by NAVSEA 08 prior to initial reactor criticality. NAVSEA 08 will approve operation of the Nuclear Propulsion Plant during dockside testing and underway trials. Volume I, Chapter 3, Appendix C of this manual provides information on Pre-RSE preparations.

2.2.3 Criticality/Power Range Testing. Upon receiving the request for initial criticality from the Supervising Authority, NAVSEA 08 will authorize critical operation of the reactor, with subsequent power range testing. Appendix H of this chapter provides a listing of the events leading up to the authorization for critical operation of Naval Nuclear Propulsion plants, with sample request messages and/or letters.

2.2.4 Post Shakedown Availability. NAVSEA 08 responsibilities for the PSA period are as follows:

a. Provide approved test procedures for the verification of reactor plant repairs and alterations accomplished in the availability.

b. Arrange for technical assistance by the U.S. Department of Energy as required.

2.3 TYPE COMMANDER. Reference (a) states the TYCOM is responsible for monitoring the construction and acceptance process to ensure "customer" input is provided. Reference (d) describes the TYCOM's responsibilities during new construction for Submarine Fly-By-Wire Ship Control Systems (FBW SCS). The following summarizes major TYCOM responsibilities during the Pre-Commissioning, FCT/GMI and PSA periods.

2.3.1 Pre-Commissioning. During the construction phase, major TYCOM responsibilities include but are not limited to:

a. (Surface Ships and Submarines only) Designating an Immediate Superior in Command (ISIC) for all units being built within the TYCOM's geographical area of responsibility.

b. Ensuring that the Pre-Commissioning Unit (PCU) is placed on distribution for all message traffic applicable to the platform and platform's operational environment.

c. Reviewing all incoming correspondence for PCU applicability and forwarding platform related documentation as required.

d. Conducting the Habitability Inspection when requested by the Accepting Authority (may be delegated to the ISIC). Sample messages relating to Habitability and In-Service are contained in Appendix A of this chapter.

e. Recommending to the CNO that the ship be placed "In-Service Active" upon receiving satisfactory results of the Habitability Inspection. Appendix A of this chapter provides sample messages.

f. (Nuclear Powered Ships only) Conducting or assisting the ISIC with the Pre-RSE.

g. (Non-Nuclear Powered Ships only) Establishing Light-Off Assessment (LOA) dates via liaison with the ISIC, the Ship and the Propulsion Examining Board.

h. Conducting or directing the conduct of the arrival assist and periodic monitoring inspections as defined in Volume I, Chapter 3, paragraph 3.3.1 and 3.3.2 of this manual.

i. (Nuclear Powered Ships only) Conducting an inspection to certify crew training per the requirements of reference (b).

j. (Nuclear Powered Ships only) Exercising operational control during underway trials either directly or through the designated ISIC.

k. (Submarines only) Reviewing the schedule and sequence of Sea Trial Agendas and concurring by message to the Supervising Authority concerning the operational aspects of the specific trial. Appendix I of this chapter provides a sample message.

l. (Submarines only) Providing escorts as may be required. Send Sea Trial support services message to specify Deep Submergence Rescue System (DSRS) "modified alert" requirements. Appendix J of this chapter provides a sample message.

m. (Submarines only) Assigning an unrestricted Line Officer (a former Commanding Officer (CO) senior to the Officer In Charge (OIC)) as the TYCOM Embarked Representative who has authority to act for the TYCOM, making on-the-spot changes to approved Sea Trial Agendas.

n. (Submarines only) If desired, assigning an officer to act as the TYCOM material representative on selected trials. The material representative's duties include:

(1) Serving as a technical advisor to the TYCOM Embarked Representative on matters pertaining to Sea Trial Agenda modifications, compliance with this instruction and disposition of emergent material problems.

(2) Acting for the TYCOM in making on-the-spot changes to approved Sea Trial Agendas in the absence of the TYCOM Embarked Representative.

o. (Submarines only) Reporting to the CNO and the Ship Program Manager that the crew is ready for underway trials, prior to Fast Cruise and upon receipt of the ISIC message certifying the operational readiness of the submarine crew. Appendix B of this chapter reflects the message scenario and contains sample messages for Fast Cruise/Alpha Trials.

p. (Submarines only) Promulgating of the Alpha Sea Trial Depth Authorization upon receipt of the Supervising Authority message reporting completion of Fast Cruise and the Ship Program Manager message promulgating the authorized depth for the Alpha Trial. Appendix B of this chapter provides sample messages.

**NOTE: SUBSEQUENT TO THE SHIP PROGRAM MANAGER AND SUPERVISING AUTHORITY MESSAGES PROMULGATING DEPTH AUTHORIZATION AND REPORTING THE SHIP'S MATERIAL READINESS TO COMMENCE FAST CRUISE AND SEA TRIALS, ANY DEFICIENCY DISCOVERED OR CORRECTIVE ACTION TAKEN WHICH AFFECTS THE WATERTIGHT INTEGRITY, THE RECOVERABILITY OF THE SHIP, THE OPERATIONS OF THE SHIP'S CONTROL SURFACES OR THE SHIP'S SALVAGE CAPABILITY SHALL BE REPORTED TO THE SHIP PROGRAM MANAGER, THE TYCOM AND FLEET COMMANDER BY THE SUPERVISING AUTHORITY/ISIC/TYCOM REPRESENTATIVE AND PCU BY MESSAGE. PREVIOUS CERTIFICATION MESSAGES SHALL BE SUSPENDED. WHEN THE SHIP PROGRAM MANAGER'S REVIEW OF THE MESSAGE IS COMPLETED, THE SHIP PROGRAM MANAGER WILL CERTIFY TO THE TYCOM THAT THE MATERIAL CONDITION OF THE SHIP IS SATISFACTORY FOR SEA TRIALS TO A SPECIFIED DEPTH.**

q. (Submarines only) Promulgating by message the Bravo, Charlie and Combined Trials Depth Authorization after receipt of the Supervising Authority message confirming readiness for the test depth dive and the Ship Program Manager message promulgating Sea Trial Depth Authorization. Appendix C of this chapter provides sample messages.

r. (Submarines only) Promulgating by message to the PCU the final URO Material Certification upon receipt of the Supervising Authority message concerning material condition for URO and the Ship Program Manager message recommending URO. Appendix D of this chapter provides sample messages.

s. (Applicable Submarines only) Prior to Alpha Sea Trials and following NAVSEA certification that the submarine FBW SCS is satisfactory for sea trials and Supervising Authority report that the FBW SCS is satisfactory for commencement of Alpha Sea Trials, report by message to ship authorizing conduct of sea trials in accordance with the approved Sea Trial Agenda and specifically identify any operating restrictions of the ship and/or system. Repeat the routine for each subsequent sea trial. Appendix K of this chapter provides a sample message.

t. (Applicable Submarines only) After all builder's sea trials, and following NAVSEA certification that the submarine FBW SCS is satisfactory for unrestricted use, report by message to ship authorizing FBW SCS unrestricted use in support of submarine unrestricted operations or specifically identify any operating restrictions of the ship and/or system. Appendix L of this chapter provides a sample message.

2.3.2 Combined Trials/Acceptance Trials/Final Contract Trials/Guarantee Material Inspection. The TYCOM's responsibilities for these trials are documented in references (a), (e), and (f). The most significant action from the ship's perspective is the TYCOM's presenting of the ship for GMI or FCT.

2.3.3 Post Shakedown Availability. The TYCOM's responsibilities as related to PSA are as follows:

a. (Non-Nuclear Powered Ships only) Assist with LOA as shown in Volume I, Chapter 6, Appendix C.

b. (Nuclear Powered Ships only) Conduct or assist the ISIC in conducting the Pre-Critical Inspection (only required when reactor has been shutdown greater than 16 weeks). Schedule the Fleet Commander Post-Overhaul RSE as recommended by the Industrial Activity in the Key Events Schedule and confirmed by the parent ISIC/TYCOM representative (required if the availability is scheduled for more than six months) upon completion of the ISIC's Pre-Critical Inspection.

c. (Submarines only) Provide escorts as required. In support of submarine trials send a Sea Trials Support Services message (Appendix M of this chapter) to specify DSRS "modified alert" requirements.

d. (Submarines only) Authorize the ship to commence Fast Cruise by message (Appendix N of this chapter), after the Supervising Authority reports Fast Cruise/Sea Trial Readiness by message to NAVSEA (Appendix E of this chapter) and upon receipt of the Ship Program Manager or Supervising Authority SUBSAFE material certification message (Appendix F of this chapter) and the ISIC's Crew/Material Certification message (Appendix O of this chapter).

**NOTE: SUBSEQUENT TO THE MESSAGES (APPENDICES F AND O OF THIS CHAPTER), ANY DEFICIENCY DISCOVERED AND THE CORRECTIVE ACTION TAKEN WHICH AFFECTS WATERTIGHT INTEGRITY, RECOVERABILITY OF THE SHIP, OPERATIONS OF THE SHIP'S CONTROL SURFACES OR THE SHIP'S SALVAGE CAPABILITY SHALL BE REPORTED TO THE SHIP PROGRAM MANAGER, TYCOM AND FLEET COMMANDER BY THE SUPERVISING AUTHORITY/ISIC/TYCOM REPRESENTATIVE BY MESSAGE. PREVIOUS CERTIFICATION MESSAGES SHALL BE SUSPENDED. WHEN A REVIEW OF THE MESSAGE IS COMPLETED BY THE SHIP PROGRAM MANAGER FOR DEPOT ITEMS AND THE TYCOM FOR SHIP'S FORCE ITEMS, THE SHIP PROGRAM MANAGER WILL CERTIFY TO THE TYCOM THAT THE MATERIAL CONDITION OF THE PARTS OF THE SHIP COVERED BY THE DEPOT WORK PACKAGE IS SATISFACTORY FOR SEA TRIALS TO A SPECIFIED DEPTH. THE TYCOM IN TURN CERTIFIES THAT THE SHIP'S SUBSAFE CERTIFICATION BOUNDARY IS SATISFACTORY FOR SEA TRIALS TO THE SAME DEPTH.**

e. (Submarines only) Promulgate by message (Appendix P of this chapter) the Sea Trial depth authorization and any applicable operational restrictions for the affected submarine, upon receipt of the Supervising Authority message (Appendix Q of this chapter) reporting Fast Cruise completion and the ship's material certification message (Appendix R of this chapter).

f. (Submarines only) Authorize the ISIC to sail the ship for Sea Trials, after the Sea Trial depth authorization has been promulgated.

g. (Submarines only) Promulgate by message to the ship (Appendix S of this chapter) the final SUBSAFE certification authorization, upon receipt of the ship's Material Certification Message (Appendix T of this chapter) and the Ship Program Manager or Supervising Authority material certification message (Appendix U of this chapter).

h. (Applicable Submarines only) For the first ship of a class or when directed by NAVSEA, ship control trials are planned and conducted under the direction of NAVSEA 05 to support verification that the FBW SCS automatic control algorithms performance is in accordance with Section 4 of reference (d). Upon successful completion of these trials, the Submarine Program Manager issues to TYCOM, the ship's final FBW SCS certification message with NAVSEA 07 concurrence and in support of the submarine class FBW SCS design. TYCOM issues to the ship a final FBW SCS certification message. When required, by message or letter, the NAVSEA Submarine Program Manager via separate correspondence shall identify impact to the FBW SCS Certification of other ships in the submarine class. Appendix V of this chapter provides a sample message.

2.4 SUPERVISING AUTHORITY. References (a), (b), (d) and (g) describe the Supervising Authority's responsibilities during new construction. The following is a synopsis of those functions with additional amplification. Platform unique functions are identified by indicating the applicable class (if any) or group covered (i.e., Nuclear Powered Ships).

2.4.1 Pre-Commissioning. The Supervising Authority's responsibilities as related to Pre-Commissioning are as follows:

a. Provide crew support as directed by the Ship Program Manager. This support may include facility support requirements such as berthing, administration, officer and crew training spaces, vehicles for transportation, computers for development of training programs and ship's directives.

b. Ensure PCU office spaces have been certified to the appropriate classification for storage of classified documentation.

c. Provide the required safety training and gear to the crew for working in an industrial area.

d. Provide initial briefing to Prospective Commanding Officer (PCO)/crew to provide an overview of the Supervisor's role during construction.

e. Provide to the PCO/crew the planning documents necessary for establishing goals during New Construction, such as a Master Construction Schedule, an Operational Control Transfer (OCT) schedule, Testing schedules, and all other schedules that would require crew support and coordination.

f. Act as liaison for the ship in resolving conflicts in construction schedules.

g. Ensure that at least ten copies of reference (h) are available to support Phase 1 and Phase 2 of the Planned Maintenance System (PMS) installation.

h. Provide the PCU with at least one set of all the technical manuals required to support the equipment installed on the particular platform.

i. Provide the PCU with, or access to a complete set of ship's drawings and contract specifications.

j. Monitor the ship's familiarization training conducted by the Industrial Activity or Fleet Introduction Team (FIT) for fulfillment of the contract. For familiarization training conducted using computer-aided instruction, the Supervising Authority is responsible only for ensuring sufficient resources are available to the PCU to utilize the training. Provide feedback to the Ship Program Manager and the Industrial Activity concerning content and value of this training.

k. Recommend to the Ship Program Manager the commencement date for the Habitability Inspection. Appendix A of this chapter provides sample documentation.

l. Recommend to the Ship Program Manager the date for placing the ship "In-Service." In-Service for Submarines should occur approximately two to four weeks prior to underway trials and for Nuclear Powered Aircraft Carriers two to four months prior to underway trials. Appendix A of this chapter provides sample documentation.

m. Recommend to the Accepting Authority the date for placing the ship "In Commission". The In Commission date is normally on or about the date of delivery.

n. Request necessary services for each trial from the Fleet Commander in accordance with reference (a), with an information copy to the TYCOM.

o. (Nuclear Powered Ships only) Accept custody of special nuclear material upon delivery from the U.S. Department of Energy.

p. (Nuclear Powered Ships only) Transfer custody of, and responsibility for, special nuclear material to the OIC when the ship is placed "In-Service".

q. (Nuclear Powered Ships only) Coordinate the schedule for dockside and underway tests and trials in accordance with the requirements of the Ship Program Manager and the Builder.

r. (Nuclear Powered Ships only) Provide sufficient time for crew training and Fast Cruise during the building period to permit Ship's Force to attain a state of training adequate to ensure proper operation and safety of the ship and its personnel during Sea Trials. Provide sufficient time for the correction of deficiencies after the completion of the final Dock Trials and before the start of the operational training period.

s. (Nuclear Powered Ships only) Submit for approval the schedule and sequence of any dockside tests or Sea Trials involving operation of the nuclear propulsion plant to NAVSEA 08, except where such tests and trials have been approved in the written instructions provided by NAVSEA 08.

t. (Submarines only) Coordinate with ISIC for support personnel to perform salvage inspection.

u. (Nuclear Powered Ships only) Submit the schedule and sequence of all Sea Trials to the ISIC for approval and to the TYCOM for concurrence with the operational aspects of the trial.

v. (Nuclear Powered Ships only) Report to the Ship Program Manager when the ship is ready for Fast Cruise and Alpha Sea Trial (Builder's Trials for Nuclear Powered Aircraft Carriers). Appendix B of this chapter provides a sample message.

w. (Nuclear Powered Ships only) Report the successful completion of Fast Cruise and readiness for Alpha Sea Trial (Builder's Trials for Nuclear Powered Aircraft Carriers), with the concurrence of the OIC, to the TYCOM, with an information copy to the Ship Program Manager, the Fleet Commander and the ISIC. Appendix B of this chapter provides a sample message for submarines.

x. (Nuclear Powered Ships only) Report to the Ship Program Manager the satisfactory completion of Alpha Sea Trials (Builder's Trials for Nuclear Powered Aircraft Carriers). For Submarines, the material status of the ship is certified to support operations to test depth. Appendix C of this chapter provides a sample message.

y. (Submarines only) Certify to the Ship Program Manager the completion of all Sea Trials, reporting the status of all Sea Trial deficiencies and all CAT 1A Audit Items. Certify the material condition of the ship is satisfactory for URO to test depth. Appendix D of this chapter provides a sample message.

z. Retain responsibility for the material condition of the ship until it reports for duty in the fleet.

aa. Maintain "Lessons Learned Logs" from the CO of previously built ship for delivery to the next PCO/OIC.

ab. (Applicable Submarines only) Report by message to NAVSEA Submarine Program Manager, in advance of the scheduled start of Fast Cruise, that all FBW SCS work necessary for Alpha Sea Trials, including resolution of NAVSEA FBW SCS Certification Audit Category I recommendations, has been completed, provide the status of all incomplete NAVSEA FBW SCS Certification Audit Category IA recommendations, and that the FBW SCS is ready for commencement of Fast Cruise. The message shall also state that there are no conditional FBW SCS Deviations or Waivers which have not been satisfied or cite those that exist, identify any operating restrictions of the ship and/or system, and that, subject to satisfactory completion of Fast Cruise and resolution of mandatory FBW SCS deficiencies, the submarine FBW SCS is satisfactory for commencement of sea trials. Make a similar report prior to each subsequent sea trial. Appendix W of this chapter provides a sample message.

ac. (Applicable Submarines only) Report by message to the NAVSEA Submarine Program Manager and TYCOM, with the concurrence of the ship's Commanding Officer, successful completion of Fast Cruise as a prerequisite for the start of sea trials. Appendix X of this chapter provides a sample message.

ad. (Applicable Submarines only) Report by message to the NAVSEA Submarine Program Manager the satisfactory completion of Alpha Sea Trials and report the status of all incomplete NAVSEA FBW SCS Certification Audit Category IA recommendations. Appendix Y of this chapter provides a sample message.

ae. (Applicable Submarines only) Report by message to the NAVSEA Submarine Program Manager the satisfactory completion of all shipbuilder's sea trials, correction of all mandatory sea trial deficiencies, and resolution of all NAVSEA FBW SCS Certification Audit Category IA recommendations. Report that the submarine FBW SCS is satisfactory for unrestricted use in support of submarine unrestricted operations. Identify all deferred FBW SCS work and/or conditionally approved deviations and waivers to date which have not had the condition satisfied and specifically identify any operating restrictions of the ship and/or system. Appendix Z of this chapter provides a sample message.

af. Prior to Ship's Force assuming operational control, ensure that assigned New Construction units operate and maintain installed diesel engines in accordance with established procedures. Specifically, the Supervisor shall:

(1) Schedule a routine diesel inspection prior to initial start up by Ship's Force.

(2) Observe diesel engine operations during shipboard visits in accordance with Volume IV, Chapter 4 of this manual.

(3) Ensure that the Automated Diesel Engine Trend Analysis Program addressed by reference (h) and TYCOM directive is in place.

2.4.2 Acceptance Trials/Combined Trials. The Supervising Authority is responsible for presenting the ship for AT/CTs. References (e), (f), and (g) delineate the Supervising Authority's responsibilities concerning these trials. Several of the more significant issues are:

a. Submit for approval the schedule and sequence of AT/CT to the President, Board of Inspection and Survey (INSURV).

b. Request necessary services for each trial from the Fleet Commander in accordance with reference (a), with an information copy to the TYCOM.

c. Provide riders to assist and provide system/historical expertise.

2.4.3 Post Shakedown Availability. During PSA the Supervising Authority is responsible for the following:

a. Determining, in conjunction with the CO, the type and extent of post-repair dockside and at-sea tests/trials, in addition to those described in Volume I, Chapter 6, section 6.4 of this manual. Submit the following for approval:

(1) The schedule and sequence of post-repair nuclear propulsion plant trials to NAVSEA for concurrence and the ISIC/TYCOM Representative for approval.

(2) The schedule and sequence of post-repair trials subsequent to the nuclear propulsion plant trials to the ISIC for approval. Include the TYCOM as a Copy To addressee.

b. Providing sufficient time for crew training to support Fast Cruise and to ensure the proper operation and safety of the ship.

c. Coordinating the schedule for Fast Cruise and post repair trials with the ISIC/TYCOM representative. Submit the Sea Trials Agenda to the Ship Program Manager for approval.

d. (Submarines only) Making available sufficient documentation of quality assurance for all Industrial Activity work and testing to allow the TYCOM representatives to assess the material readiness of the ship. Provide the CO a written statement per reference (c) certifying work within the SUBSAFE boundaries has been satisfactorily completed.

e. (Submarines only) Reporting to the TYCOM and the Ship Program Manager, with an information copy to the CNO, the Fleet Commander, the ISIC and the CO of the ship that the material condition of those parts of the ship repaired and/or tested by the Industrial Activity are certified satisfactory for Fast Cruise and Sea Trials. The CO of the ship must concur. Appendix E of this chapter provides a sample message.

f. Reporting to the TYCOM the completion of Fast Cruise and the correction of all mandatory deficiencies. Recommend commencement of Sea Trials with the CO's concurrence. Appendix Q of this chapter provides a sample message.

g. Reporting to the Ship Program Manager or the TYCOM (PSA less than six months) that Sea Trials have been completed, and for submarines, that the material condition of those parts of the ship installed, prepared and/or tested by the Industrial Activity is satisfactory for URO to design test depth. Appendix U of this chapter provides a sample message.

2.4.4 Deficiencies. The Supervising Authority's primary functions involve the building of ships and the correction/resolution of deficiencies discovered during the building and trials portion of construction. Reference (g) and locally generated Supervising Authority Instructions provide specific and detailed information pertaining to deficiencies, their identification, tracking and resolution. Contact the Supervising Authority for more information. Volume I, Chapter 5 of this manual also provides additional guidance.

2.5 IMMEDIATE SUPERIOR IN COMMAND. The ISIC is the TYCOM's delegate.

2.5.1 Pre-Commissioning. During the Pre-Commissioning period, the ISIC is responsible for the following:

a. Providing crew support prior to initial man-up. Personnel arriving prior to initial manning will be tasked with coordinating with the Supervising Authority to start the necessary preparations for initial man-up. Appendix AA of this chapter provides a checklist of areas that need to be addressed several months before personnel start arriving.

b. Conducting an inspection approximately two months following the arrival of the first increment of the crew at the building yard, using Volume I, Chapter 3, paragraph 3.3.1 of this manual as a guide.

c. Conducting periodic monitoring of ships per Volume I, Chapter 3, paragraph 3.3.2 of this manual to include:

(1) Technical and/or administrative/training assistance visits (Tech Assists) directed toward improvements in the management and conduct of maintenance and training tasks.

(2) Evaluation visits (Work-ups) to determine the state of administration and training.

(3) Spot checks (Monitor Visits) to monitor the progress and effectiveness in specific material, training and administrative areas.

d. Coordinating with the Bureau of Personnel (BUPERS) to ensure personnel arrive in support of initial crew man-up.

e. Conducting a Habitability Inspection when directed by the TYCOM. Volume I, Chapter 3, Appendix D of this manual provides information concerning the Habitability Inspection and a sample Compartment Surveillance Guide. Volume I, Chapter 3, Appendix E of this manual provides a sample check list.

f. Making recommendations to the TYCOM for placing the ship "In-Service". Appendix A of this chapter provides a sample message.

g. Conducting a review of units to be established as Field Calibration Activities prior to certification by the Naval Sea Systems Command (NAVSEA)/Naval Air Systems Command (NAVAIR) designated Metrology and Calibration Technical Representative. The review will evaluate the Field Calibration Activity in accordance with the requirements delineated with references (i), (j) and (k), or for Nuclear Powered Aircraft Carriers, reference (l).

h. When Ship's Force has assumed operational control, ensuring that assigned New Construction units operate and maintain installed diesel engines in accordance with established procedures. Specifically, the ISICs shall conduct follow-up action to ensure that any unsatisfactory conditions found are corrected at an early date.

i. (Nuclear Powered Ships only) Conducting a Pre-RSE of the Engineering/Reactor Department to determine the ship's readiness for the Naval Reactors Pre-Critical RSE. The TYCOM will assist in this examination. Volume I, Chapter 3, Appendix C of this manual provides administrative guidelines for the conduct of the Pre-RSE.

j. (Nuclear Powered Ships only) Reviewing Pre-RSE findings, the CO's training plan, and progress evaluations, and direct follow-up reviews and/or inspections necessary to verify the ship's readiness for the RSE.

k. (Submarines only) Prior to Fast Cruise, reporting ship's preparations to assume responsibility for Re-entry Control in the Crew/Material Certification message. Appendix B of this chapter provides a sample message.

l. (Submarines only) Scheduling salvage inspections per Volume IV, Chapter 18 of this manual.

m. (Submarines only) Designating the salvage inspection team using the guidance provided in Volume IV, Chapter 18 of this manual.

2.5.2 Post Shakedown Availability. During PSA, the ISIC is responsible for the following:

a. Conducting periodic monitoring similar to that described in paragraph 2.5.1.c of this chapter, placing the emphasis on the management and conduct of PSA.

b. (Nuclear Powered Ships only) Conducting a Pre-Critical Inspection of the Engineering/Reactor Department per Volume I, Chapter 6, paragraph 6.3.4 of this manual. Review inspection findings, the CO's training plan and progress evaluations, and direct follow-up reviews and/or inspections as necessary to verify ship's readiness for criticality.

c. Witnessing and certifying to the TYCOM that the state of crew training is satisfactory for at-sea operations per the Force Training Manual. Appendix O of this chapter provides a sample message.

d. (Nuclear Powered Ships only) Receiving from the CO/Supervising Authority the scope, schedule and agenda of the tests for Sea Trials for review and approval. When approved, forward copies of the agenda to the TYCOM.

e. Arranging for the embarkation of technical personnel who may be assigned by the Ship Program Manager to observe tests or trials.

f. Arranging for the assignment of operating areas and communications frequencies.

g. (Submarines only) Scheduling a salvage inspection in time to have discrepancies corrected prior to Fast Cruise.

h. (Submarines only) Prior to Fast Cruise, auditing Ship's Force Re-entry Control and Departure from Specification Records. Using the Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) Activity URO Maintenance Requirement Card (MRC) scheduling reports and current Industrial Activity/Ship's Force updates to the latest report, ensure URO MRC accomplishment is current.

i. (Submarines only) Conducting a material inspection consisting of a vertical audit of Ship's Force and Fleet Maintenance Activity SUBSAFE work and URO completion status per Volume V, Part I, Chapter 9 of this manual.

j. (Submarines only) Reporting satisfactory completion of the inspections of paragraphs 2.5.2.c, 2.5.2.h and 2.5.2.i of this chapter to the TYCOM in one "priority," crew certification message per the sample message (Appendix O of this chapter), paralleled by a telephone call to the TYCOM Watch Officer reporting the date-time group of the message.

k. (Submarines only) Advising the TYCOM by message of escort requirements and ensuring that an escort is provided during the initial tightness dive, the deep dive and emergency blow tests as required by Volume I, Chapter 6, section 6.4 of this manual.

l. (Submarines only) Providing updated Sea Trials status by telephone to Commander Submarine Development Squadron (COMSUBDEVRON) Five if Deep Submergence Rescue Vehicle (DSRV) Modified Alert support services are in use per Volume I, Chapter 4, paragraph 4.4.3.c of this manual.

m. (Submarines only) Providing an operations order, copy to the TYCOM and, where appropriate, the local ISIC, with an information copy to the CNO and the Fleet Commander. Include within the operations order instructions to send specific messages announcing the commencement and completion of the initial deep dive with the TYCOM as an information addressee.

n. If deficiencies exist and/or it appears that extension of time is required to correct training/material deficiencies, the TYCOM shall be immediately advised by telephone and message. The Supervising Authority will be included as an information addressee. The TYCOM retains the prerogative to authorize corrective action by the Industrial Activity in the case of material deficiencies.

o. When authorized by the TYCOM, direct the ship to get underway for Sea Trials.

2.6 BUILDING YARD. The Building yard is an industrial activity responsible for construction of the ship, correction of shipbuilder responsible deficiencies and additional logistic support products as delineated in the contract. The following is a sample listing of the shipbuilder's products and responsibilities.

a. Technical Manuals for Contractor Furnished Equipment (CFE).

b. Ship Information Book (SIB)/Ship Systems Manual (SSM).

c. PMS for new systems when tasked by Ship Program Managers or cognizant NAVSEA code.

d. Selected Familiarization Training.

e. Ship Drawings.

f. Advising the Accepting Authority and the TYCOM of the date of initial criticality.

g. Builder's Trials (non-nuclear) to include:

(1) Taking the ship to sea.

(2) The testing of all equipments and systems with the exception of weapons.

2.7 DESIGN YARD/PLANNING YARD. The Design Yard/Planning Yard, which may also be the Building Yard, is an industrial activity responsible for maintaining the Ship's Drawing Index current with configuration. The Planning Yard is responsible for updating ship's drawings to reflect PSA changes.

2.8 COMMANDING OFFICER, PROSPECTIVE COMMANDING OFFICER, OFFICER IN CHARGE.

2.8.1 General.

a. The responsibilities of a PCO for a new construction ship are set forth in U.S. Navy Regulations. In the case of a nuclear powered ship under construction, the PCO has additional responsibilities associated with the operation of the nuclear propulsion plant as specified in references (a) and (b). In order to provide him with authority commensurate with this responsibility the PCO will be designated in his orders as CO of the PCU, a separate and detached command, with responsibilities as specified in references (a) and (b) and U.S. Navy Regulations.

b. Following completion of the required training and material readiness certification, the CO/PCO/OIC must keep the ISIC fully informed of any changes in personnel, training and/or material status which could affect the validity of certification. Prompt notification is required to permit revision of Operational Orders and services required.

2.8.2 Pre-Commissioning. Specific responsibilities of the PCO during the primary construction phase are as follows:

a. The preparation and execution of training plans, operational and emergency bills, procedures and organization manuals in support of his responsibilities.

b. The demonstration of his crews operational and administrative readiness in accordance with the inspections required by Volume I, Chapter 3, paragraph 3.3.4 of this manual.

c. Verifying that all required Navy Enlisted Classification Codes or other skill requirements are met by BUPERS or by the ship's training programs.

d. The presentation of the crew for the platform applicable inspections described within this volume.

e. The designation of a Miniature/Microminiature (2M) Repair or Module Test and Repair Manager.

f. The designation in writing of a Calibration Coordinator.

g. Ensuring that at least two NAVSEA/NAVAIR certified Field Calibration Activity/Aircraft Intermediate Maintenance Department technicians are available to support certification.

h. Verifying that all pertinent alongside tests, inspections and trials are completed.

i. The establishment of "Lessons Learned Files". These files are to be turned over to the incoming PCO of the next ship of the class to be built. DDG 51 Class Destroyers should pass their files to the PMS 400 tasked contractor. MHC Class ships can provide this data to the FIT while all others should pass Lessons Learned to the Supervising Authority if the next PCO has not yet arrived.

j. The establishment of PMS in accordance with reference (h) and Volume I, Chapter 3, paragraph 3.4.1 of this manual.

k. Concurring with the Ship Program Manager's request to the TYCOM for the conduct of a Habitability Inspection.

l. The designation of system/space experts to assist the ISIC with the Habitability Inspection.

m. The establishment of early liaison with the Engineering Training Group (ETG) team OIC to define training needs and the agenda for assist visits in preparation for LOA and Initial Light-Off.

n. (Nuclear Powered Ships only) The development and execution of training plans and documents in support of his responsibilities for inspection and operation of the nuclear propulsion plant. These plans and documents shall be in conformance with the instructions and procedures approved by NAVSEA.

o. (Nuclear Powered Ships only) The preparation of ship's engineering/reactor personnel for examination by the Nuclear Propulsion Directorate (NAVSEA 08).

p. (Nuclear Powered Ships only) Review the findings of the ISIC's Pre-RSE Inspection Team and make necessary adjustments to the ship's training program to ensure the crew's readiness for the RSE. Keep the ISIC advised of the ship's training plan and provide an assessment of the crew's progress.

q. (Nuclear Powered Ships only) Maintain the Reactor Plant in accordance with reference (m). Ensure records are ready for the ISIC's audit prior to Fast Cruise.

r. (Nuclear Powered Ships only) Review test and trial schedules and agendas and signify concurrence to the TYCOM and the designated ISIC. Copies of detailed schedules and agendas for underway trials will be forwarded to the designated ISIC, the escort ship (Submarines) and the TYCOM Embarked Representative.

s. (Nuclear Powered Ships only) Assume duty as the OIC and accept custody and responsibility for special nuclear material, after the ship is placed "In-Service". Report to the Fleet Commander In-Service status. Appendix A of this chapter provides a sample message.

t. (Nuclear Powered Ships only) The preparation of Ship's Force Dock Trial Agenda.

u. (Nuclear Powered Ships only) In accordance with the specifications and information in this volume, the conduct of dockside and underway trials. Critical operation of the reactor will be conducted in accordance with reference (n).

v. (Nuclear Powered Aircraft Carriers only) Prior to Fast Cruise, report to the TYCOM the successful completion of Crew Certification and recommend commencement of Fast Cruise and Builder's Trials via message. Appendix B of this chapter provides a sample message.

w. (Nuclear Powered Ships only) When authorized by the Ship Program Manager, conduct Fast Cruise in accordance with Volume I, Chapter 4, section 4.3 of this manual.

x. (Nuclear Powered Ships only) During Sea Trials, assume the duties of Officer In Tactical Command unless otherwise designated by the ISIC. For submarines, ISICs must comply with direction found in Annex C of reference (o).

y. (Nuclear Powered Ships only) Provision for adequate crew rest time during Sea Trials. Six uninterrupted hours in each twenty-four hour period is a minimum for each crew member.

z. (Nuclear Powered Ships only) In the absence of a TYCOM and ISIC representative, act for the TYCOM in approving on-the-spot changes to approved Sea Trial Agendas.

aa. (Nuclear Powered Ships only) When all platform applicable requirements of this instruction are completed to the OIC's satisfaction and when permission has been received from the ISIC, proceed to sea in accordance with the operations order and carry out the approved Sea Trial Agenda.

ab. (Submarines only) If possible, participate in two at sea periods prior to initial Sea Trials as follows:

(1) Accompany the preceding ship of the class on the first Sea Trial to learn how the propulsion trial is run (except first ship of class).

(2) Participate in an underway period of at least five days duration approximately six months prior to the final phase of Crew Certification. The purpose of this ride is to refamiliarize the PCO with those functions unique to being underway so as to ensure the safe conduct of his own initial Sea Trials and shakedown. This underway period also allows him to validate his crew's training program. This underway period should be on a ship, preferably of the same class, which is concentrating on basic ship/submarine operations, such as Selected Refresher Training or Independent Ship Exercise (ISE), so he can witness such evolutions as: coming to periscope depth, snorkeling, ventilating, casualty training, etc. If the new construction schedule has 10-12 weeks between Power Range testing and the final phase of Crew Certification, the PCO should go to sea approximately two months before initial criticality. The intent is for the PCO to go to sea after having been in the Industrial Activity for a fair amount of time (normally one year or more), but with sufficient time remaining to improve his own training program if necessary. During these underway periods, the PCO should spend time on the bridge and also observe piloting and navigation.

**NOTE: IF NOT POSSIBLE TO PARTICIPATE IN TWO AT-SEA PERIODS AS DESCRIBED ABOVE, THE ISIC AND TYCOM WILL COORDINATE REQUIRED TRAINING.**

ac. (Submarines only) Request that the ISIC conduct a salvage inspection in accordance with the policies set forth in Volume IV, Chapter 18 of this manual.

(1) Coordinate salvage inspection support requirements as may be needed by the inspecting team to fulfill the requirements of Volume IV, Chapter 18, Appendix A of this manual.

(2) Ensure Volume IV, Chapter 18, Appendix B of this manual is completed and furnished to the Senior Inspecting Officer prior to the commencement of the Salvage Inspection.

(3) Ensure all ship's data called out in Volume IV, Chapter 18, Appendix A of this manual is assembled and staged prior to the inspection for ease of reference by the inspecting team.

(4) Take corrective action on all discrepancies found during the Salvage Inspection. Inform the ISIC of corrective action prior to commencement of Fast Cruise.

ad. (Submarines only) Ensure a copy of the salvage plan has been provided to the escort ship designated for Sea Trials. Coordinate communications and operational procedures with the escort ship to ensure the escort is fully informed of the submarine's condition and intentions.

ae. (Submarines only) Concur with the Supervising Authority message that the material condition of the ship is satisfactory to commence Fast Cruise.

af. (Submarines only) Upon successfully completing Fast Cruise and after having exercised his crew thoroughly and operated all machinery, equipment and systems to his satisfaction, concur in the Supervising Authority's message recommending commencement of Alpha Trials. Appendix B of this chapter provides an example of this message.

ag. (Submarines only) Maintain Planned Maintenance Management Plan in accordance with reference (p). Ensure records are ready for the ISIC's audit conducted prior to Fast Cruise.

2.8.3 Trials and Inspections. PCO responsibilities are delineated in references (e) and (f).

2.8.4 Post Shakedown Availability. Specific responsibilities of the PCO during PSA are as follows:

a. Determine, in conjunction with the Supervising Authority, the nature and extent of PSA Sea Trials. Prepare, in conjunction with the Supervising Authority, the Sea Trial Agenda, including the sequence and duration of each test. The Supervising Authority will submit it to the Ship Program Manager and the ISIC/TYCOM representative for approval as described herein. Provide copies of the approved detailed schedule and agenda for underway trials to the local ISIC and, if appropriate, the escort ship and the TYCOM Embarked Representative. This schedule and agenda shall include:

(1) The minimum requirements shown in Volume I, Chapter 6, section 6.4 of this manual.

(2) A firm time scheduled for conducting all tests and trials showing their sequence and duration.

(3) General prerequisites for conducting each test. Detailed prerequisites should be itemized as part of individual test requirements.

(4) Responsibility for conducting each test (Industrial Activity or Ship's Force).

(5) Ship's Force support required for conducting each test.

(6) Provision for adequate crew rest time during Sea Trials. Six uninterrupted hours in each twenty-four hour period is a minimum for each crew member.

(7) (Submarines only) Provision for a minimum of six hours of uninterrupted ISE for crew training following the initial tightness dive and prior to the deep dive.

(8) Underway tests may be run during ISE and rest periods on a not-to-interfere basis. Specifically, tests which can be conducted underway under normal operating conditions without manning special watch stations that require extra military personnel may be scheduled during rest periods. Tests which will not interfere with Ship's Force drills and training exercises may be conducted during ISE periods.

b. Prepare Dock Trial Agenda.

c. Conduct one day Ship's Force Dock Trials in accordance with Volume I, Chapter 6, paragraph 6.3.5 of this manual.

d. Demonstrate the crew's state of training.

e. Ensure that all pertinent alongside tests, inspections and trials are conducted.

f. (Nuclear Powered Ships only) Supervise operation of the nuclear propulsion plant. Conduct critical operations as set forth in reference (n).

g. (Nuclear Powered Ships only) When authorized by the TYCOM, conduct Fast Cruise in accordance with Volume I, Chapter 6, paragraph 6.3.6 of this manual.

h. (Nuclear Powered Ships only) Review the findings of the Pre-Critical Inspection (if performed) and adjust the training plan to ensure the crew's readiness for criticality. Advise the ISIC of training plan adjustments and provide an assessment of the crew's progress.

i. (Nuclear Powered Ships only) Maintain Reactor Plant Maintenance in accordance with reference (m). Ensure records are ready for an ISIC audit conducted prior to Fast Cruise.

j. (Submarines only) Undergo a salvage inspection in accordance with Volume IV, Chapter 18 of this manual.

k. (Submarines only) Maintain Planned Maintenance Management Plan in accordance with reference (p) and SUBSAFE Re-entry Control in accordance with Volume V, Part I, Chapter 5 of this manual. Ensure records are ready for an ISIC audit prior to Fast Cruise.

l. (Submarines only) Concur with the Supervising Authority message (Appendix E of this chapter) concerning Fast Cruise/Sea Trial readiness.

**NOTE: SUBSEQUENT TO THE MESSAGES (APPENDICES F AND O OF THIS CHAPTER), ANY DEFICIENCY DISCOVERED AND THE CORRECTIVE ACTION TAKEN WHICH AFFECTS WATERTIGHT INTEGRITY, RECOVERABILITY OF THE SHIP, OPERATIONS OF THE SHIP'S CONTROL SURFACES OR THE SHIP'S SALVAGE CAPABILITY SHALL BE REPORTED TO THE SHIP PROGRAM MANAGER, TYCOM AND FLEET COMMANDER BY THE SUPERVISING AUTHORITY/ISIC/TYCOM REPRESENTATIVE BY MESSAGE. PREVIOUS CERTIFICATION MESSAGES SHALL BE SUSPENDED. WHEN A REVIEW OF THE MESSAGE IS COMPLETED BY THE SHIP PROGRAM MANAGER FOR DEPOT ITEMS AND TYCOM FOR SHIP'S FORCE ITEMS, THE SHIP PROGRAM MANAGER WILL CERTIFY TO THE TYCOM THAT THE MATERIAL CONDITION OF THE PARTS OF THE SHIP COVERED BY THE DEPOT WORK PACKAGE IS SATISFACTORY FOR SEA TRIALS TO A SPECIFIED DEPTH. THE TYCOM IN TURN CERTIFIES THAT THE SHIP'S SUBSAFE CERTIFICATION BOUNDARY IS SATISFACTORY FOR SEA TRIALS TO THE SAME DEPTH.**

m. (Submarines only) Concur with the Supervising Authority message (Appendix Q of this chapter) that Fast Cruise was successfully completed, all mandatory deficiencies for Sea Trials have been corrected and recommend commencement of Sea Trials.

n. (Submarines only) Prior to Sea Trials, report the material certification of the ship to the TYCOM by message (Appendix R of this chapter).

o. (Submarines only) Upon completion of Sea Trials, report the status of any work performed by Forces Afloat within the SUBSAFE boundary, the status of Departures from Specification and the status of URO MRCs to the TYCOM by message (Appendix T of this chapter).

2.9 PRE-COMMISSIONING UNIT. The PCO and crew will monitor the ship's construction, prepare ship's directives, regulations and administrative programs, and observe and/or demonstrate the operation of installed systems to ensure the ship is safe and habitable prior to commissioning. The shipyard period is an opportunity for the crew to familiarize themselves with the ship. The ship will be required to complete various certifications leading up to introduction into the fleet. This section provides some insight into the administrative requirements and personnel related issues associated with the initial man-up.

2.9.1 Initial Man-up. New construction ships are manned based on a Crew Scheduling and Phasing Plan. Dependent upon the platform type, crew manning is accomplished in two, three, four or as many as eight increments. The quantitative and qualitative requirements of these increments are based on the platform type, test and construction schedule. The objectives of the Crew Scheduling and Phasing Plan are to:

a. Ensure adequacy of schooling for personnel assigned.

b. Ensure appropriate course convening dates.

c. Ensure there are no conflicts/redundancies between Navy and contractor courses.

d. Ensure sufficient training for anticipated maintenance and operating skill requirements.

e. Ensure the optimization of training opportunities for personnel in the pipeline en route to the ship. A senior crew member from the first increment shall be assigned with the responsibility of tracking and reviewing manning issues. For some ships, the Ship Program Manager has provided support contractors to assist either partially or entirely in the management of the Crew Scheduling and Phasing Plan. Regardless of the class or type of ship, the initial increment of personnel must quickly organize. If a detachment concept is used, Appendix AB of this chapter provides a basic listing of requirements that the first increment of personnel should be pursuing. Appendix AC of this chapter provides similar information for the non-detachment approach.

2.9.2 Training.

2.9.2.1 Shipboard Training. The Industrial Activity presents a unique environment with special circumstances not routinely encountered by operating forces. The incremental assignment of personnel to PCUs and the pace of new construction demands a comprehensive training strategy. A well established training program is the key to the ship being ready for introduction into the Fleet. Consistent with the objectives of a shipboard training program, the TYCOM training manuals and references (q), (r) and (s), a new construction training program will ensure that:

a. (Nuclear Powered Ships only) The qualification of all Engineering/Reactor Department personnel in strict accordance with reference (t). Included is the CO's responsibility to personally conduct an RSE of each key propulsion plant watchstander.

b. Personnel are trained in any special Quality Assurance (QA) procedures that may be used during the construction period.

c. Personnel assigned are knowledgeable of the platform, system and equipment installations and operation of installed equipment.

d. Watchstander qualifications support a watch section of fully or provisionally qualified personnel for all scheduled events.

e. Training designated for assigned personnel supports the platform/equipment configuration.

f. Intensified special training is provided to support:

(1) Cold Operations.

(2) Hot Operations.

(3) RSE.

(4) LOA.

(5) Criticality/Power Range Testing.

(6) Combat Systems Installation Certification.

(7) Crew Certification.

(8) Fast Cruise and Sea Trials.

(9) Piloting Party/Navigation Detail.

(10) Damage Control Team.

(11) Fire Fighting Team.

(12) Tactical Team.

(13) Special details.

g. All billets requiring specific Navy Enlisted Classifications are filled.

h. Established Naval Schools and Trainers are used to the maximum extent possible.

i. Factory training on systems/equipments for which Naval Schools are not established is provided.

j. Special training in accordance with TYCOM directives is provided for provisional certification to load, handle, stow and maintain a weapons load-out specific to the class of ship.

k. Weapons/Combat Systems training is sufficient to enable the Weapons/Combat Systems Department to operate its systems while complying with existing safety rules, technical directives and governing operating procedures promulgated by the CNO, the Defense Nuclear Agency, NAVSEA, Space and Naval Warfare Systems Command, the TYCOM or other commands as applicable.

l. Industrial Activity/contractor familiarization training courses are monitored for content and value. Provide supplemental instruction where necessary and inform the Supervising Authority and Ship Program Manager of significant problems or shortfalls.

m. The enlisted training program is started as soon as the Leading Petty Officers for the major divisions arrive. The Officers and senior enlisted personnel will develop the content and scope of the training programs for implementation with the arrival of the first large increment of enlisted personnel.

n. Aircraft Launch and Recovery Equipment Maintenance Program training shall be conducted in accordance with reference (u).

2.9.2.2 Industrial Activity Training. The Industrial Activity/FIT will provide familiarization training in accordance with the shipbuilding contract on ship's characteristics and systems. This training generally is not sufficient for "System Expert" qualification, but will provide an excellent opportunity for School of the Boat/Ship, and at the same time provide an opportunity for Divisional Training Petty Officers to develop a more detailed and in depth training program. In most cases the Industrial Activity will allow the ship to control the scheduling of topics.

2.9.2.3 Fleet Training Center. Surface ships utilizing the Pre-Commissioning Detachment Concept at a Fleet Training Center (FTC), either in Norfolk, VA or San Diego, CA, are provided with an outstanding opportunity to ensure pipeline training is obtained. This concept also provides for the easy access to many of the basic courses such as firefighting, damage control, Repair Parts Petty Officer training, Drug and Alcohol Program Advisors, Component Change Control, etc., which are needed to ensure assigned personnel can effectively function as a ship's crew upon delivery. For ships not utilizing the FTC Detachment Concept, such as submarines, an individual should be assigned to monitor and track training and manning issues as they develop.

2.9.3 Ship's Qualification Program. The implementation and operation of the Ship's Qualification/Personnel Qualification Standard (PQS) should ensure a logical process for training Ship's Force for watchstanding and ship's qualification. TYCOM instructions that cover Ship's Qualification/PQS requirements are found in references (q), (r) and (s). The department organization manual should establish prerequisites for watchstander qualification. Qualification goals should be established and the program should support completion of goals within each division. Fleet wide training and qualification goals are:

a. Underway Watchbills; 3 Section Enlisted, 4 Section Officer/Chief Petty Officer.

b. Inport Watchbills; 4 Section Enlisted, 5 Section Officer/Chief Petty Officer (6 Section for all personnel on Aircraft Carriers).

2.9.4 Deficiency Identification and Correction. The establishment of procedures by which Ship's Force reports and tracks the correction of deficiencies cannot be overstressed. The Supervising Authority relies heavily upon PCU involvement to augment their efforts. Inspections of systems, equipments and spaces by PCU personnel are extremely important in the identification of unsatisfactory work and/or material deficiencies. Each shipbuilder and associated Supervising Authority have their own established system for tracking shipbuilder responsible deficiencies. Those deficiencies which are not corrected during the construction cycle will be submitted to the INSURV Board just prior to FCT, AT or CT (the type of trial dependent on platform). These deficiencies, depending on their seriousness, may impact a ship's delivery to the Navy. Deficiencies cited must either be resolved/corrected or waived by the Ship Program Manager.

2.9.5 Establishment of Engineering/Reactor Department. This paragraph addresses the Engineering/Reactor Department establishment and tasks which are to be accomplished during the pre-commissioning phase of new construction. The tasks defined in this section incorporate experience gained and lessons learned from previously completed ships. The objective is to provide guidance which will assist in the ship's readiness, from an Engineering/Reactor Department standpoint, to successfully complete contract milestones and to prepare for fleet introduction.

2.9.5.1 Requirements. The PCU should monitor and report on the ship's construction progress to the PCO, and dependent upon platform, conduct and/or witness and participate in the ship's dockside and at-sea testing, attend periodic documentation reviews, assessments, and validations, and provide recommendations regarding manpower, training, watchstanding and related shipboard engineering requirements. Tasks and responsibilities include items discussed in the following paragraphs.

2.9.5.2 Shipboard Inspections. Shipboard inspections by the ship's Engineering/Reactor Department and cognizant Supervising Authority personnel are necessary during the ship construction phase. There is no precise pattern or timetable for these inspections, but they should be thorough and conducted frequently. Ship's Force personnel need to become familiar with the contract specifications and system drawings. This will ensure the prompt identification, and documenting, of discrepancies discovered when comparing "as built" conditions to the actual specification.

2.9.5.3 Personnel Qualification Standards. Theoretical portions of PQS should be implemented during the training pipeline at the specific Training Centers and at the FTCs using available technical manuals and training material. Ship-wide PQS should be implemented prior to the arrival of the final crew increment at the shipbuilder's yard. The ship's Engineer Officer should establish interim watch qualifications to set the training goals for Engineering/Reactor Department personnel as they arrive at the Industrial Activity. Additionally, PQS sign-off authority should be specified in writing by the ship's Engineer Officer, in order to ensure that the provisional qualifications and sign-off procedures function smoothly.

2.9.5.4 Outfitting Support (as applicable). The PCU must ensure that engineering spaces are completely outfitted. Routine progress inspections must be made in this area, and the PCU will participate in completing Compartment Completion Inspection Reports. It is important that personnel involved with Compartment Completion Inspection Reports are fully aware of all implemented Engineering Change Proposals and Engineering Change Notices to ascertain that outfitting materials and Operating Space Items (OSI) support the ship as revised by Engineering Change Proposals and Engineering Change Notices. Configuration Change Requests must be drafted with full recognition of the guidance contained in both the General Specifications for Building Naval Vessels and the specific Class Building Specifications.

2.9.5.5 Operational Sequencing System (Surface Ships only). The Operational Sequencing Systems (OSS) (Engineering Operational Sequencing System (EOSS), Sewage Disposal Operational Sequencing System, etc.) establish the operational procedures for various shipboard equipment, including applicable Casualty Control procedures. Validation of Engineering Department OSS manuals is the responsibility of the ship's Engineering Department personnel, with assistance provided by the Ship Program Manager and contractor support personnel (if available). This validation will ensure that procedural requirements are current, well-defined and correct. OSS validation is a Key Event that must be accomplished by the PCU prior to arrival of the final crew increment. EOSS installation (under the cognizance of Naval Surface Warfare Center Carderock Division (NSWCCD)) involves the following sequence of events, which may be modified for other OSS installations:

a. Develop the preliminary EOSS package.

b. Submit the preliminary EOSS to the PCU, the Supervising Authority and the Ship Program Manager.

c. The PCU, the Supervising Authority and the Ship Program Manager review the preliminary EOSS.

d. Conduct cold plant check to validate equipments for correct system operation.

e. Revise EOSS to pre-hot check package and submit EOSS to the PCU, the Supervising Authority and the Ship Program Manager.

f. Conduct pre-hot check.

g. Conduct hot system ship check.

h. Submit final EOSS to the PCU, the Supervising Authority and the Ship Program Manager for review/comment.

i. Deliver camera-ready copy of EOSS to Ship Program Manager.

j. Print, laminate, assemble EOSS.

k. Install final EOSS.

2.9.5.6 Engineering/Reactor Department Organization and Regulations Manual. The Engineering/Reactor Department Organization and Regulations Manual (EDORM/RDORM) is the responsibility of the ship's Engineer/Reactor Officer, however, basic EDORM/RDORMs have been established as guidelines. Reference (v) provides EDORM development guidance for Surface Forces, reference (w) provides guidance for Submarines, and reference (t) provides EDORM/RDORM development guidance for Nuclear Powered Aircraft Carriers.

2.10 SUPPORT ACTIVITIES.

2.10.1 Technical Support. The Regional Maintenance Centers (RMC) have numerous functions and responsibilities, some of which will further be discussed in Volume I, Chapter 3 of this manual, but for the purpose of this section only those functions and responsibilities related to new construction will be discussed.

2.10.1.1 Regional Maintenance Centers. RMC locations are listed in Volume VI, Chapter 2, Appendix A of this manual. Personnel from the RMCs are responsible for the loading of PMS on every new construction ship to be manned by naval personnel. Their primary functions with respect to new construction is to install PMS in a phased sequence in coordination with Ship's Force. Additional information concerning PMS installations can be found in Volume I, Chapter 3, paragraph 3.4.1 of this manual.

2.10.2 Submarine Maintenance Engineering, Planning and Procurement Activity. The SUBMEPP Activity is located in Portsmouth, NH. SUBMEPP functions are related to submarines and selected submarine support activities. As was the case with the RMCs, SUBMEPP's functions are numerous and deal with a submarine's maintenance at all levels of accomplishment (Organizational, Intermediate, Depot) from construction to inactivation. For the purpose of this section SUBMEPP's responsibilities and functions include:

a. Tracking the configuration of ships under construction.

b. Assisting local RMC with the PMS installation on all new construction submarines.

c. Assisting the Supervisor of Shipbuilding, Groton with the resolution of INSURV deficiencies concerning PMS related issues.

d. Providing Ship's Force with a Master Equipment Guide List (EGL) for all non-nuclear/non-missile related equipment (component to MRC).

e. Providing Ship's Force with their URO and Maintenance Standard documentation at PMS installation.

f. Providing Maintenance and Material Management Coordinator Training at SUBMEPP concerning VIRGINIA and SEAWOLF Maintenance philosophy.

g. Processing all shipbuilder developed Submarine PMS to the In-Service Engineering Activity (ISEA) for review and approval.

2.10.3 Navy Management Systems Support Office.

a. Navy Management Systems Support Office (NAVMASSO) designs, develops, implements and provides life cycle support for standard fleet non-tactical automated information systems, afloat and ashore. NAVMASSO, also known as the Fleet Central Design Activity, is the software development and support command for tactical support applications automated under the Shipboard Nontactical Automated Data Processing Program (SNAP), the Naval Aviation Logistics Command Management Information System and their successor program, the Naval Tactical Command Support System.

Through these programs, NAVMASSO automates supply, inventory, finance, ship/submarine/aviation maintenance and configuration management, medical, dental, food services, retail operations, manpower administration, watch, quarter, station bills, for fleet and fleet-like activities. In all, NAVMASSO customers number over 1200 separate activities, many of which operate with multiple functional systems.

b. All software development takes place at NAVMASSO's headquarters in Chesapeake, VA, along with Atlantic Fleet implementation and support. NAVMASSO DET PAC in San Diego, CA is responsible for Pacific Fleet implementation and support. Small detachments in Sigonella, Italy and Yokosuka, Japan provide on-site assistance for overseas commands and units deployed to the Sixth and Seventh Fleets.

2.10.4 Fleet Introduction Team (Surface Forces only). Reference (x) states that for newly commissioned Commander Naval Surface Force Atlantic (COMNAVSURFLANT) ships, COMNAVSURFLANT assumes the responsibility of instituting and managing a fleet introduction program. FITs provide support to pre-commissioning crews by monitoring the progress of construction, coordinating training, providing continuity in the management and administration of facilities at the building site and providing administrative support. For the DDG 51 and to a lesser degree the LHD 1 programs, the Ship Program Manager provides this support in the form of support contractors. The specific responsibilities of individual FITs will vary dependent upon the platform and the requirements peculiar to that platform. Appendix AD of this chapter provides a generic base line of services available if a FIT is established.

2.10.5 Engineering Training Group (Surface Ships only). The ETG is chartered by reference (v) to assist ships in tailoring a training program for the conduct of pre-light-off cold checks and evaluations, program management and fire fighting. This assistance is rendered through formal visits, scheduled at the request of the ship's ISIC via the quarterly scheduling process. ETG teams will conduct tailored training, defined in consonance with the CO, the ISIC and the team OIC which best meets the needs of the ship.

2.10.6 Surface Nuclear Propulsion Mobile Training Team (Nuclear Powered Aircraft Carriers only). The Surface Nuclear Propulsion Mobile Training Team will conduct training and assessment of Reactor Departments (to include Engineering department on CVN 65) for ships undergoing extended availabilities and for PCUs. These assessments shall include Reactor Department administration, qualifications, operations, cleanliness, preservation, material condition, radiological controls, chemistry controls and damage control. The Maintenance Training Group will conduct preavailability training with Reactor Department personnel, conduct in process quality assurance assessments and training visits, and train the crew in life cycle management.

2.10.7 Fitting Out and Supply Support Assistance Center (Surface Ships only).

a. Fitting Out and Supply Support Assistance Center (FOSSAC) is a world wide supply support organization dealing with logistics engineering and management, acquisition and information systems training, cost and manpower analysis, and occupational health and safety issues. FOSSAC major service operations are:

(1) Code 02 - Intra-Fleet Supply Support Operations Program.

(2) Code 03 - Fitting Out Supply Assistance Team (FOSAT).

(3) Code 05 - Naval Supply Systems Command Occupational Safety and Health Office.

(4) Code 06 - Logistics Engineering Department.

(5) Code 07 - Systems Training Department.

(6) Code 08 - Price Fighters Department.

(7) Code 09 - Shipboard Uniform Automatic Data Processing System Support Group.

(8) Code OM - Manpower Management Analysis.

As the subject of this volume is new construction the following provides a brief description of Code 03, the FOSAT.

b. FOSAT assists PCOs and their Prospective Supply Officers in establishing the Supply Department for U.S. Navy, Military Sealift Command, and Foreign Military Sales ships during their new construction, conversion, activation and modernization periods. This mission also extends into Integrated Logistics Overhaul/Integrated Logistics Review for Military Sealift Command ships. FOSAT also assists INSURV inspectors. FOSAT evaluates the progress and effectiveness of:

(1) Ship's equipment validation.

(2) Provisioning of ship's equipment.

(3) Allowance products development.

(4) Material ordering (via Automated Coordinated Shipboard Allowance List (COSAL) Tracking System).

(5) Material receipt and identification.

(6) Stowage, both mock-up and shipboard.

c. Additional services provided by FOSAT includes:

(1) Serve as the focal point to assist the PCU.

(2) Establishment and maintenance of S-1 records.

(3) Establishment and training of the food service, retail sales and services divisions and the disbursing function aboard new construction ships.

(4) Conduct the pre-acceptance bin validity inspection and recommend acceptance or rejection of storerooms based on the results.

(5) Chair Automated COSAL Tracking System Conference and User's Meeting.

(6) Chair Incremental Stock Number Sequence List and Load COSAL quality reviews for Naval Inventory Control Point allowance products.

(7) Chair Start of Overhaul and End of Overhaul COSALs or Integrated Allowance Document for Military Sealift Command ships undergoing Integrated Logistics Overhaul or Integrated Logistics Review.

(8) Report on the effectiveness of supply support to the Systems Commands (NAVSEA and NAVSUP), the TYCOMs, Commander Military Sealift Command and Ship Masters, as appropriate.

2.11 NAVAL SEA SYSTEMS COMMAND (SUBMARINES ONLY). Reference (d) describes NAVSEA's responsibilities during new construction for Submarine FBW SCS. The following is a synopsis of those functions with additional amplification:

2.11.1 Pre-Commissioning. NAVSEA's responsibilities for the Pre-Commissioning period are as follows:

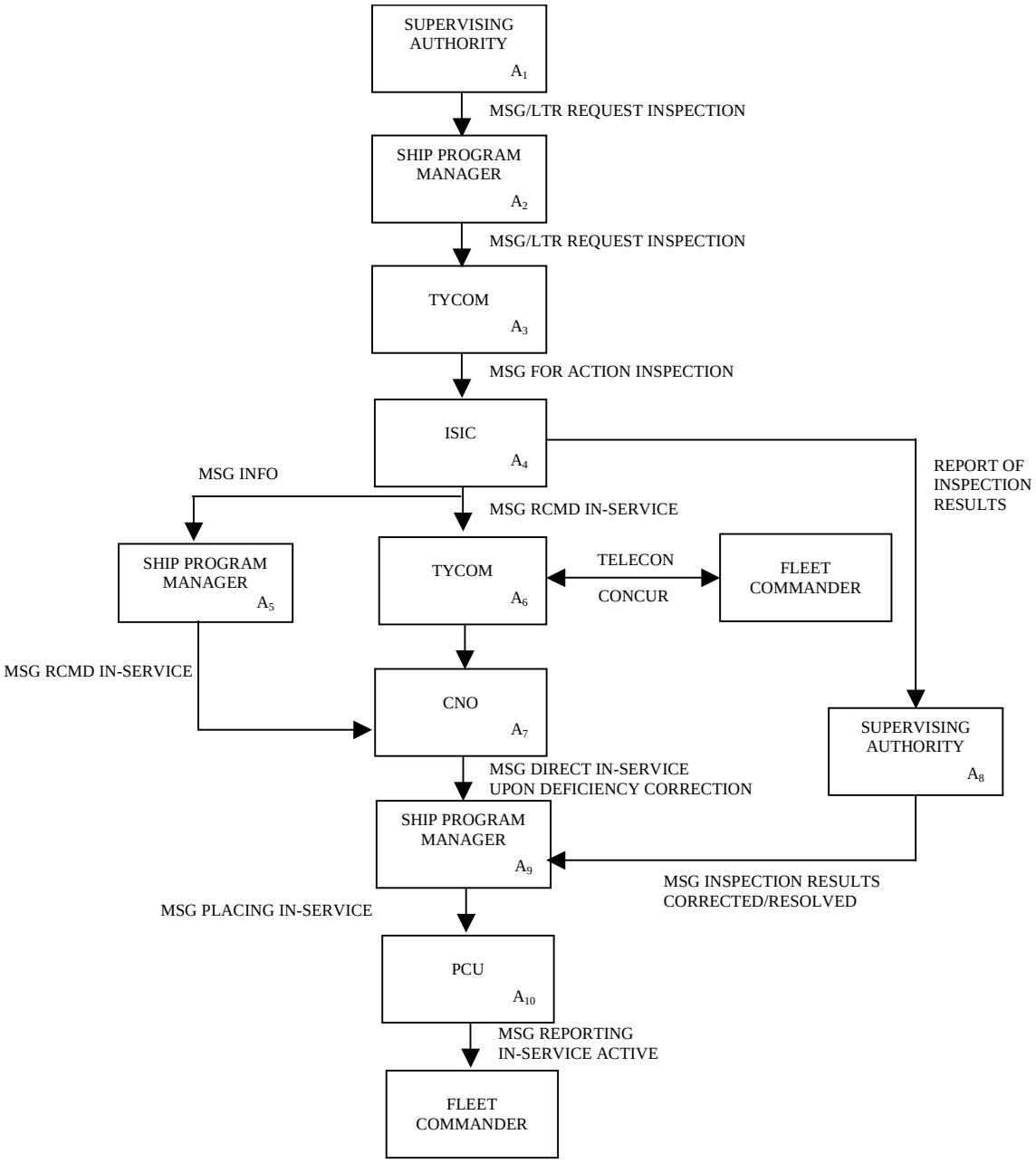
a. (Applicable Submarines only) Supervising Authority sends message to NAVSEA in advance of the scheduled start of Fast Cruise stating the status of all incomplete NAVSEA FBW SCS Certification Audit Category IA recommendations, that all FBW SCS work necessary for sea trials, including resolution of all NAVSEA FBW SCS Certification Audit Category I recommendations, has been completed and that the FBW SCS is ready for commencement of Fast Cruise. The message shall also state that there are no conditional FBW SCS Deviations or Waivers which have not been satisfied or cite those that exist, identify any operating restrictions of the ship and/or system, and that, subject to satisfactory completion of Fast Cruise and resolution of mandatory deficiencies, the FBW SCS is satisfactory for commencement of Alpha Sea Trials. Appendix AE of this chapter provides a sample message.

b. (Applicable Submarines only) NAVSEA Submarine Program Manager message to TYCOM certifying that the submarine FBW SCS is satisfactory for sea trials in accordance with the approved Sea Trial Agenda. The message shall also state that there are no conditional FBW SCS Deviations or Waivers which have not been satisfied or cite those that exist, identify any operating restrictions of the ship and/or system, and that, subject to satisfactory completion of Fast Cruise and resolution of mandatory deficiencies, the FBW SCS is satisfactory for commencement of Alpha Sea Trials. Appendix AF of this chapter provides a sample message.

c. (Applicable Submarines only) NAVSEA Submarine Program Manager shall provide a report documenting the resolution of sea trial deficiencies to NAVSEA 07TC for review in support of NAVSEA 07 concurrence on final system certification. Appendix AG of this chapter provides a sample message.

# APPENDIX A

## Message Scenario and Sample Messages/Letters For Habitability Inspections and In-Service



## APPENDIX $A_1$

## SAMPLE SUPERVISING AUTHORITY LETTER TO SHIP PROGRAM MANAGER RECOMMENDING HABITABILITY INSPECTION AND IN-SERVICE

From: Supervisor of Shipbuilding, Conversion and Repair, USN, (Applicable Supervising Authority)

To: Commander, Naval Sea Systems Command (Attn: Ship Program Manager)

Subj: PLACING (SHIP NAME) (HULL NUMBER) IN-SERVICE

Ref: (a) OPNAVINST 9080.3
(b) OPNAVINST 4700.8

1. In accordance with references (a) and (b), recommend Habitability Inspection of (Ship Name) (Hull Number) commence on (Date) with active status of In-Service on or about (Date).

Program Department Head

Copy to: (As Applicable)
CNO Washington (N77)
DIRSSP Washington (SP201)
TYCOM
ISIC
Parent ISIC
PRECOMUNIT (Ship Name)
NRRO (Location)

## APPENDIX $A_2$

## SAMPLE SHIP PROGRAM MANAGER LETTER REQUESTING TYCOM TO AUTHORIZE ISIC TO CONDUCT HABITABILITY INSPECTION

From: Commander, Naval Sea Systems Command

To: Commander, (Applicable TYCOM N43)

Subj: PLACING (SHIP NAME) (HULL NUMBER) IN-SERVICE

Ref: (a) OPNAVINST 9080.3
(b) OPNAVINST 4700.8
(c) Supervising Authority ltr recommending In-Service of specified unit

1. In accordance with references (a) and (b), (Applicable TYCOM) (N4) is requested to authorize a Habitability Inspection of (Ship Name) (Hull Number) commencing on (Date) as recommended by reference (c).

Ship Program Manager

Copy to: (As Applicable)
CNO Washington DC (N77)
DIRSSP Washington DC (SP201)
ISIC
Parent ISIC
PRECOMUNIT (Ship Name)
Supervising Authority
NRRO (Location)

## APPENDIX $A_3$

## SAMPLE TYCOM MESSAGE DIRECTING ISIC TO CONDUCT HABITABILITY INSPECTION

FM (TYCOM)//N43//
TO (ISIC)//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08 (NUCLEAR POWERED SHIPS ONLY)//
PRECOMUNIT (SHIP NAME)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
(PARENT GROUP)//
(PARENT SQUADRON)//
BT
UNCLAS //N04700//
MSGID/GENADMIN/(TYCOM)//
SUBJ/ PLACING (SHIP NAME AND HULL NO.) IN-SERVICE//
REF/A/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF A IS SHIP PROGRAM MANAGER REQUEST FOR HABITABILITY INSPECTION//
RMKS/1. TAKE REF A FORAC. CONDUCT HABITABILITY INSPECTION OF (SHIP NAME AND HULL NO.) ON OR ABOUT (DATE).
2. REPORT RESULTS BY MSG UPON COMPLETION.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAIN LANGUAGE ADDRESS DIRECTORY (PLAD) IS UTILIZED.**

## APPENDIX $A_4$

## SAMPLE ISIC MESSAGE REPORTING COMPLETION OF HABITABILITY INSPECTION AND RECOMMENDING SHIP BE PLACED "IN-SERVICE"

FM (ISIC)//
TO (TYCOM)//N43//
INFO CNO WASHINGTON DC//N77//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08 (NUCLEAR POWERED SHIPS ONLY)//
(FLEET COMMANDER)//N43//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
(TYCOM) REP (SUPERVISING AUTHORITY)//
BT
UNCLAS //N05441//
MSGID/GENADMIN/(ISIC)//
SUBJ/ PLACING (SHIP NAME AND HULL NO.) IN-SERVICE//
REF/A/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF A IS SHIP PROGRAM MANAGER REQUEST FOR HABITABILITY INSPECTION//
REF/B/MSG/(ORIGINATOR)/(DTG)//
AMPN/REF B IS TYCOM AUTHORIZATION TO CONDUCT HABITABILITY INSPECTION//
REF/C/DOC/OPNAVINST 3120.32//
AMPN/REF C IS US NAVY REGULATIONS//
REF/D/DOC/OPNAVINST 4700.8//
AMPN/REF D IS TRIALS, ACCEPTANCE, COMMISSIONING, FITTING OUT, SHAKEDOWN, AND POST-SHAKEDOWN AVAILABILITY OF U.S. NAVAL SHIPS UNDERGOING CONSTRUCTION OR CONVERSION//
REF/E/DOC/OPNAVINST 9080.3//
AMPN/REF E IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING, AND OVERHAUL//
REF/F/DOC/(SUPERVISING AUTHORITY)INST 5441.1/-/NOTAL//
AMPN/REF F IS SUPERVISING AUTHORITY INSTRUCTION CONCERNING HABITABILITY AND IN-SERVICE//

RMKS/1. IAW REFS A AND B (ISIC) COMPLETED HABITABILITY INSPECTION OF (SHIP NAME AND HULL NO.) ON (DATE).
2. INSPECTION CONDUCTED IAW REFS C, D, AND E, USING REF F FOR GUIDANCE. LIST OF DEFICIENCIES PROVIDED TO (SUPERVISING AUTHORITY) AND PRECOMUNIT (SHIP NAME).
3. RECOMMEND (SHIP NAME) BE PLACED "IN-SERVICE" UPON CORRECTION OR RESOLUTION OF HIGHLIGHTED MINOR DEFICIENCIES. NO MAJOR DEFICIENCIES EXIST.
4. THE FOLLOWING SYSTEMS ARE NOT UNDER OPERATIONAL CONTROL OF SHIP'S FORCE:

| SYSTEM | EDD |
|---|---|

5. THE FOLLOWING SPACES HAVE SIGNIFICANT WORK IN PROGRESS AND ARE NOT TURNED OVER TO SHIP'S FORCE:

SPACE

A.
B.
C.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $A_5$

## SAMPLE SHIP PROGRAM MANAGER TO CNO MESSAGE RECOMMENDING SHIP BE PLACED IN-SERVICE

FM COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)//
TO CNO WASHINGTON DC//N77//
INFO (FLEET COMMANDER)//N43//
(TYCOM)//N43//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
BT
UNCLAS //N05441//
MSGID/GENADMIN/(SHIP PROGRAM MANAGER)//
SUBJ/ PLACING (SHIP NAME AND HULL NO.) IN-SERVICE//
REF/A/MSG/(ISIC)/(DTG)//
AMPN/REF A IS SHIP'S MESSAGE TO TYCOM CONCERNING MATERIAL CERTIFICATION//
REF/B/DOC/OPNAVINST 9080.3//
AMPN/REF B IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING AND OVERHAUL//
REF/C/DOC/OPNAVINST 4700.8//
AMPN/REF C IS TRIALS, ACCEPTANCE, COMMISSIONING, FITTING OUT, SHAKEDOWN, AND POST SHAKEDOWN AVAILABILITY OF U.S. NAVAL SHIPS UNDERGOING CONSTRUCTION OR CONVERSION//
RMKS/1. REF A PROVIDED RESULTS OF HABITABILITY INSPECTION OF (SHIP NAME AND HULL NO.).
2. IAW REFS B AND C, (THE SHIP PROGRAM MANAGER) RECOMMENDS PLACING (SHIP NAME AND HULL NO.) IN-SERVICE UPON CORRECTION OR RESOLUTION OF MANDATORY DEFICIENCIES IDENTIFIED BY THE ISIC HABITABILITY INSPECTION REPORT. CORRECTION OR RESOLUTION OF THESE DEFICIENCIES IS EXPECTED TO COMPLETE ON OR ABOUT (DATE).//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $A_6$

## SAMPLE TYCOM MESSAGE RECOMMENDING SHIP BE PLACED "IN-SERVICE ACTIVE"

FM (TYCOM)//N43//
TO CNO WASHINGTON DC//N77//
INFO (FLEET COMMANDER)//N43//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08 (NUCLEAR POWERED SHIPS ONLY)//
(PARENT GROUP)//
(PARENT SQUADRON)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
(ISIC)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N05441//
MSGID/GENADMIN/(TYCOM)//
SUBJ/ (SHIP NAME AND HULL NO.) IN-SERVICE ACTIVE//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS ISIC REPORT OF HABITABILITY INSPECTION COMPLETION//
REF/B/TEL/(TYCOM)/(DATE)//
AMPN/REF B IS TELCON BETWEEN (TYCOM)/(NAME) AND (FLEET COMMANDER)/(NAME)//
RMKS/1. CONCUR WITH REF A RECOMMENDATION TO PLACE (SHIP NAME) IN-SERVICE ACTIVE UPON CORRECTION/RESOLUTION OF DEFICIENCIES.
2. (FLEET COMMANDER) CONCURRENCE OBTAINED REF B.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $A_7$

## SAMPLE CNO TO SHIP PROGRAM MANAGER MESSAGE DIRECTING THE SHIP BE PLACED IN-SERVICE

FM CNO WASHINGTON DC//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)//
INFO (FLEET COMMANDER)//
(TYCOM)//N2/N405//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N05441//
MSGID/GENADMIN/CNO//
SUBJ/ PLACING (SHIP NAME AND HULL NO.) IN SERVICE//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS (ISIC) RECOMMENDATION TO PLACE (SHIP NAME) IN SERVICE//
REF/B/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF B IS (TYCOM) RECOMMENDATION TO PLACE (SHIP NAME) IN SERVICE//
REF/C/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF C IS (NAVSEA) RECOMMENDATION TO PLACE (SHIP NAME) IN SERVICE//
REF/D/DOC/OPNAVINST 4700.8//
AMPN/REF D IS TRIALS, ACCEPTANCE, COMMISSIONING, FITTING OUT, SHAKEDOWN, AND POST SHAKEDOWN AVAILABILITY OF U.S. NAVAL SHIPS UNDERGOING CONSTRUCTION OR CONVERSION//
RMKS/1. AS RECOMMENDED BY (ISIC)/(TYCOM)/(FLEET COMMANDER) PER REFS A AND B AND BY NAVSEA PER REF C, UPON CORRECTION OR SATISFACTORY RESOLUTION OF DEFICIENCIES DISCUSSED IN REF A, NAVSEA IS DIRECTED TO PLACE (SHIP NAME) IN SERVICE IAW REF D ON OR ABOUT (DATE).//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $A_8$

### SAMPLE SUPERVISING AUTHORITY TO SHIP PROGRAM MANAGER MESSAGE RECOMMENDING SHIP BE PLACED IN-SERVICE

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)//
INFO CNO WASHINGTON DC//N77//
(TYCOM)//N43//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //NO5441//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ/ (SHIP NAME AND HULL NO.) PLACING IN-SERVICE ACTIVE
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS ISIC REPORT OF HABITABILITY INSPECTION COMPLETION//
REF/B/DOC/OPNAVINST 4700.8//
AMPN/REF B IS TRIALS, ACCEPTANCE, COMMISSIONING, FITTING OUT, SHAKEDOWN, AND POST-SHAKEDOWN AVAILABILITY OF U.S. NAVAL SHIPS UNDERGOING CONSTRUCTION OR CONVERSION//
REF/C/DOC/OPNAVINST 9080.3//
AMPN/REF C IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING, AND OVERHAUL//
RMKS/1. ALL MANDATORY DISCREPANCIES IDENTIFIED DURING THE HABITABILITY INSPECTION OF (SHIP NAME AND HULL NO.) AS REPORTED BY REF A HAVE BEEN CORRECTED OR RESOLVED TO THE SATISFACTION OF THE PCO (SHIP NAME) AND THE (SUPERVISING AUTHORITY).
2. IAW REFS B AND C IT IS RECOMMENDED THAT (SHIP NAME AND HULL NO.) BE PLACED IN-SERVICE ACTIVE ON (DATE).//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $A_9$

## SAMPLE SHIP PROGRAM MANAGER TO SHIP MESSAGE DIRECTING SHIP BE PLACED IN-SERVICE

FM COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)//
TO PRECOMUNIT (SHIP NAME)//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(TYCOM)//N43//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
BT
UNCLAS //N05441//
MSGID/GENADMIN/(SHIP PROGRAM MANAGER)//
SUBJ/ PLACING (SHIP NAME AND HULL NO.) IN-SERVICE ACTIVE//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)/NOTAL//
AMPN/REF A IS SUPERVISING AUTHORITY RECOMMENDATION TO PLACE SHIP IN-SERVICE//
REF/B/MSG/CNO/(DTG)/NOTAL//
AMPN/REF B IS CNO MESSAGE DIRECTING (SHIP PROGRAM MANAGER) TO PLACE SHIP IN-SERVICE//
RMKS/1. REF A REPORTED ALL MANDATORY DEFICIENCIES IDENTIFIED DURING HABITABILITY INSPECTION OF (SHIP NAME AND HULL NO.) HAVE BEEN CORRECTED OR RESOLVED TO THE SATISFACTION OF THE PCO (SHIP NAME AND HULL NO.) AND THE (SUPERVISING AUTHORITY).
2. AS DIRECTED IN REF B, PLACE (SHIP NAME AND HULL NO.) IN-SERVICE, ACTIVE ON (DATE). MAKE ALL REQUIRED REPORTS. REPORT TO (FLEET COMMANDER) FOR OPCON.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $A_{10}$

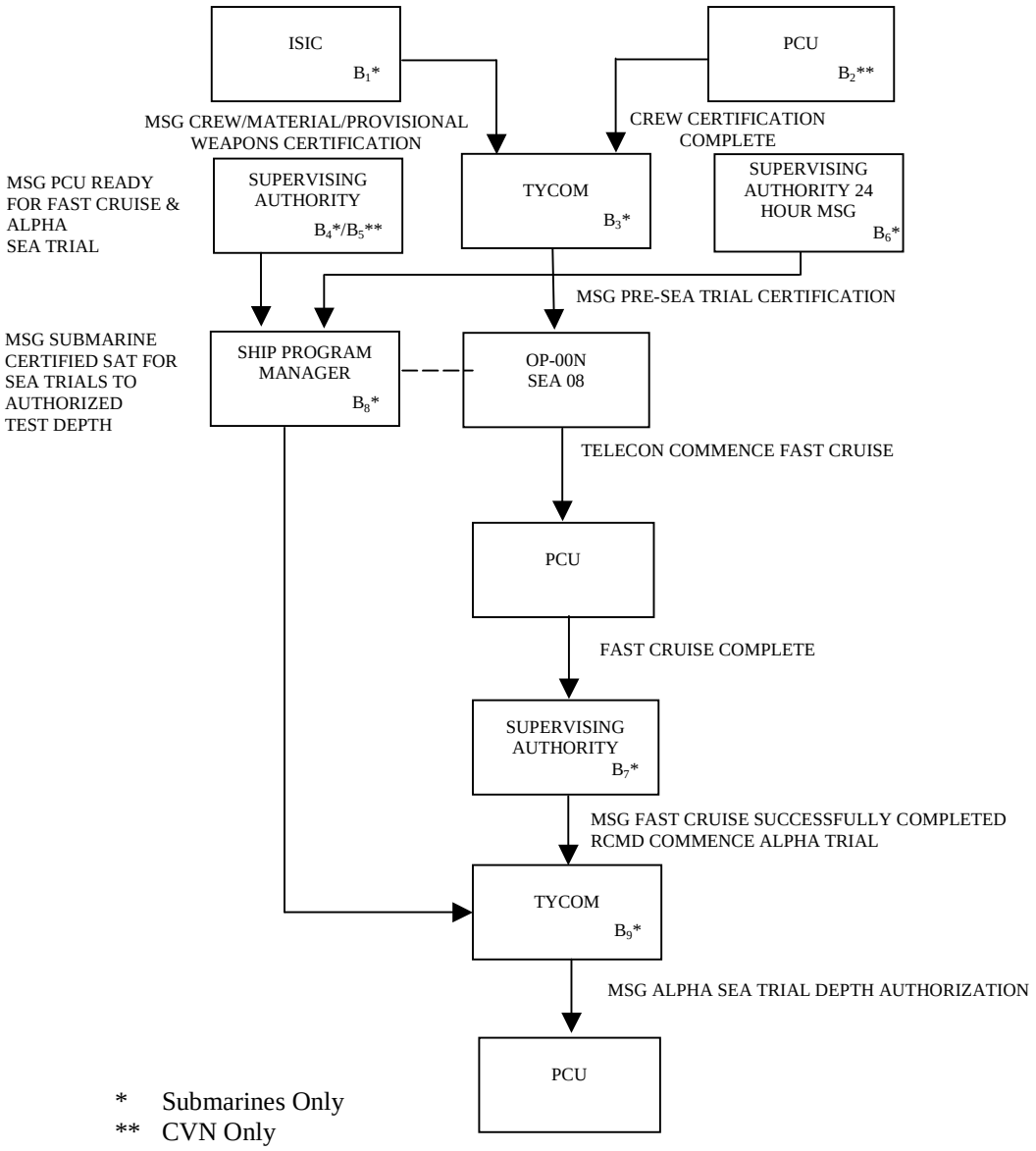
### SAMPLE CO PRE-COMMISSIONING UNIT MESSAGE REPORTING "IN-SERVICE ACTIVE"

FM PRECOMUNIT (SHIP NAME)//
TO (FLEET COMMANDER)//N43/N3//
INFO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08 (NUCLEAR POWERED SHIPS ONLY)//
(TYCOM)//N3//N43//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
BT
UNCLAS //N05441//
MSGID/GENADMIN/(SHIP NAME)//
SUBJ/ (SHIP NAME AND HULL NO.) IN-SERVICE//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS SHIP PROGRAM MANAGER DIRECTION TO PLACE SHIP IN-SERVICE//
REF/B/DOC/COMNAVSUBFOR OPORD 2000/(DATE)//(SUBMARINES ONLY)
AMPN/APPROPRIATE SECTION OF REF B IS APP 7 TO ANNEX C//
RMKS/1. IAW REF A (SHIP NAME) IN-SERVICE ACTIVE (DTG).
2. IAW REF B (SHIP NAME) REPORTING TO FLEET COMMANDER FOR OPCON.//(SUBMARINES ONLY)
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

# APPENDIX B

## Message Scenario and Sample Messages For Fast Cruise and Alpha Sea Trial (Nuclear Powered Ships)




* Submarines Only
** CVN Only

## APPENDIX $B_1$

## SAMPLE ISIC CERTIFICATION OF NEW CONSTRUCTION READINESS FOR FAST CRUISE AND SEA TRIALS MESSAGE (SUBMARINES)

FM (ISIC)//
TO (TYCOM)//N43//
INFO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(ISIC)//
SUBJ/(SUBS) PRECOMUNIT (SHIP NAME AND HULL NO.) CREW AND SALVAGE CERTIFICATION//
REF/A/DOC/COMFLTFORCOMINST 4790.3//
AMPN/REF A IS JOINT FLEET MAINTENANCE MANUAL//
RMKS/1. CREW CERTIFICATION CONDUCTED IAW REF A SATISFACTORILY COMPLETED.
2. SALVAGE CONDITION CERTIFIED SATISFACTORY UPON COMPLETION OF THE FOLLOWING CORRECTIVE ACTIONS:

A.
B.
C.

3. SHIP IS PREPARED TO ASSUME RESPONSIBILITY FOR RE-ENTRY CONTROL.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $B_2$

## SAMPLE PRE-COMMISSIONING UNIT MESSAGE TO TYCOM CONCERNING CREW CERTIFICATION (CVN)

FM PRECOMUNIT (SHIP NAME)//
TO TYCOM//N00/N02/N3/N8//
INFO COMNAVSEASYSCOM WASHINGTON DC//08/PMS-312//
(FLEET COMMANDER)//N43//
(PARENT GROUP)//N4//
(SUPERVISING AUTHORITY)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(ORIGINATING ACTIVITY)//
SUBJ: CREW CERTIFICATION PHASE II//
REF/A/DOC/OPNAVINST/-/9080.3//
AMPN/REF A IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING AND OVERHAUL//
REF/B/DOC/OPNAVINST/-/9080.2//
AMPN/REF B IS CREW CERTIFICATION REQUIREMENTS FOR NEW CONSTRUCTION CV/CVNS//
REF/C/DOC/CNALINST 3500.20//
AMPN/REF C IS CV/CVN TRAINING AND READINESS MANUAL//
RMKS/1. (PARENT GROUP) CERTIFIES (SHIP NAME) SATISFACTORILY COMPLETED CREW CERTIFICATION PHASE II AS REQUIRED BY REF A AND IAW REFS B AND C. RECOMMEND (SHIP NAME) COMMENCE BUILDER'S SEA TRIALS AS SCHEDULED.
2. RELEASED BY COMMANDER (PARENT GROUP)//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $B_3$

## SAMPLE TYCOM CERTIFICATION OF CREW READINESS FOR UNDERWAY TRIALS MESSAGE (SUBMARINES)

FM (TYCOM)//N43//
TO CNO WASHINGTON DC//N77//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
INFO (FLEET COMMANDER)//N43//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
DSU SAN DIEGO CA//N3//
COMSUBDEVRON FIVE SILVERDALE WA//N3//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(TYCOM)//
SUBJ/(SUBS) PRE-SEA TRIAL CERTIFICATION OF PRECOMUNIT (SHIP NAME AND HULL NO.)//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS ISIC CERTIFICATION OF READINESS FOR FAST CRUISE AND SEA TRIALS//
REF/B/DOC/OPNAVINST 9080.3//
AMPN/REF B IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING, AND OVERHAUL//
RMKS/1. PRE-SEA TRIAL INSPECTION OF PRECOMUNIT (SHIP NAME) COMPLETED SAT PER REF A. IAW REF B, CREW IS CERTIFIED READY FOR UNDERWAY TRIALS, SUBJECT TO CORRECTION OF SALVAGE INSP DEFS OF PARA 2, REF A, AND REPORT THAT FAST CRUISE SUCCESSFULLY COMPLETED.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $B_4$

## SAMPLE SUPERVISING AUTHORITY TO SHIP PROGRAM MANAGER MESSAGE CONCERNING FAST CRUISE/ALPHA SEA TRIAL READINESS (SUBMARINES)

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08/07Q//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(TYCOM)//N43//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ/(SUBS) READINESS FOR FAST CRUISE AND ALPHA SEA TRIAL OF (SHIP NAME AND HULL NO.)//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/B/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF B IS NAVSEA PHASE I SUBSAFE CERTIFICATION AUDIT REPORT//
REF/C/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF C IS NAVSEA PHASE II SUBSAFE CERTIFICATION AUDIT REPORT//
RMKS/1. IAW REF A, (SUPERVISING AUTHORITY) REPORTS THE COMPLETION OF ALL SUBSAFE WORK AND TESTING REQUIRED FOR COMMENCEMENT OF ALPHA SEA TRIAL.
2. IAW REF A, (SUPERVISING AUTHORITY) REPORTS THAT ALL CAT I AUDIT RECOMMENDATIONS OF REF B AND/OR C HAVE BEEN SATISFACTORILY RESOLVED. THERE ARE NO SUBSAFE DEVIATIONS AND WAIVERS WITH CONDITIONS WHICH HAVE NOT BEEN SATISFIED.(OR LIST CONDITIONAL DEVIATIONS AND WAIVERS)
3. IAW REF A, THE STATUS OF ALL INCOMPLETE CAT 1A AUDIT RECOMMENDATIONS OF REF B AND/OR C IS AS FOLLOWS:
A.
B.
4. (SUPERVISING AUTHORITY) REPORTS READINESS OF (SHIP NAME AND HULL NO.) FOR COMMENCEMENT OF FAST CRUISE. OIC (SHIP NAME AND HULL NO.) CONCURS.
5. SUBJECT TO SATISFACTORY COMPLETION OF FAST CRUISE AND RESOLUTION OF MANDATORY DEFICIENCIES, (SUPERVISING AUTHORITY) CONSIDERS (SHIP NAME AND HULL NO.) SUBSAFE MATERIAL CONDITION READINESS SATISFACTORY FOR COMMENCEMENT OF ALPHA SEA TRIAL.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $B_5$

## SAMPLE SUPERVISING AUTHORITY MESSAGE TO SHIP PROGRAM MANAGER CONCERNING FAST CRUISE/SEA TRIAL READINESS (CVN)

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08/07Q//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N33/N43/N7//
PRESINSURV NORFOLK VA//00/01/03/36//
(TYCOM ATLANTIC)//N00/N02/N43/N421/N81/N9//
(TYCOM PACIFIC)//N00/N02/N3/N43/N421/N81/N9//
(PARENT GROUP)//N4//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ: (SHIP NAME (CVN )) READINESS FOR FAST CRUISE AND SEA TRIALS
REF/A/DOC/OPNAVINST/-/9080.3//
AMPN/REF A IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING AND OVERHAUL//
REF/B/MSG/PCU (SHIP NAME)/(MESSAGE DTG)//
AMPN/REF B IS REPORT OF COMPLETION OF CREW CERTIFICATION//
REF/C/LTR/(ORIGINATING ACTIVITY) (LETTER SERIAL NUMBER)/(DATE)//
AMPN/REF C IS BUILDER REQUEST FOR REACTOR PLANT STARTUP TO PERFORM RETESTS WITH REACTOR STEAM//
RMKS/1. IAW REF A, (SUPERVISING AUTHORITY) CERTIFIES THE MATERIEL CONDITION OF (SHIP NAME/HULL NO.) FOR FAST CRUISE AND SEA TRIALS.
2. PHASE II CREW CERTIFICATION SUCCESSFULLY COMPLETED AS REPORTED BY REF B.
3. ALL Q-COSAL ITEMS ARE ABOARD. ALL OSI AND SRI CRITICAL SHORTAGE ITEMS HAVE BEEN RESOLVED.
4. CURRENTLY HAVE NO SIGNIFICANT ITEMS AFFECTING COMMENCEMENT OF FAST CRUISE/SEA TRIALS.
5. UPON SATISFACTORY COMPLETION OF PROPULSION PLANT STARTUP RETESTS (REF C), ALL SYSTEMS/EQUIPMENT ESSENTIAL FOR SEA TRIALS WILL BE OPERATIONAL.
6. REMAINING FAST CRUISE PREREQUISITE WORK WILL BE COMPLETE TO SUPPORT FAST CRUISE AT (TIME AND DATE).
7. OIC (SHIP NAME) CONCURS//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $B_6$

### SAMPLE SUPERVISING AUTHORITY TO SHIP PROGRAM MANAGER 24 HOUR MESSAGE CONCERNING FAST CRUISE READINESS (SUBMARINES)

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
INFO PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N09080//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ/(SUBS) (SHIP NAME AND HULL NO.) READINESS FOR FAST CRUISE//
REF/A/DOC/OPNAVINST 9080.3//
AMPN/REF A IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING AND OVERHAUL//
REF/B/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF B IS (ISIC) MESSAGE CONCERNING CREW CERTIFICATION//
RMKS/1. PER REQUIREMENTS OF REF A, (SUPERVISING AUTHORITY) CONSIDERS THAT THE MATERIAL CONDITION OF (SHIP NAME) WILL BE READY TO COMMENCE FAST CRUISE AT (TIME AND DATE).
2. ALL SUBSAFE CAT I CARDS HAVE BEEN SATISFACTORILY RESOLVED.
3. MATERIAL/SALVAGE CONDITION CERTIFIED READY FOR SEA IN REF B.
4. SIGNIFICANT PRODUCTION WORK IS AS FOLLOWS:
A.
B.
5. ESTABLISHED TIME TO COMPLETE ALL ITEMS IS (TIME AND DATE).//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $B_7$

## SAMPLE SUPERVISING AUTHORITY TO SHIP PROGRAM MANAGER AND TYCOM MESSAGE CONCERNING FAST CRUISE COMPLETION (SUBMARINES)

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08/07Q//
(TYCOM)//N43/N9//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ/(SUBS) FAST CRUISE COMPLETION AND READINESS FOR ALPHA SEA TRIAL OF (SHIP NAME AND HULL NO.)//
RMKS/1. (SHIP NAME) FAST CRUISE SUCCESSFULLY COMPLETED AT (TIME (LOCAL)) ON (DATE).
2. NO MANDATORY DEFICIENCIES FOR SEA TRIALS HAVE BEEN IDENTIFIED. THERE HAVE BEEN NO RECS OPENED AND NO SUBSAFE DEVIATIONS AND WAIVERS PROCESSED SINCE THE START OF FAST CRUISE.(OR, REPORT ANY MANDATORY DEFICIENCIES DISCOVERED WITH CORRECTIVE ACTION, AND IF RECS AND/OR DEVIATIONS AND WAIVERS WERE PROCESSED SINCE THE START OF FAST CRUISE, REPORT ALL RECS OPENED SINCE THE START OF FAST CRUISE ARE CLOSED AND/OR ALL SUBSAFE DEVIATIONS AND WAIVERS RESOLVED.)
3. RECOMMEND COMMENCEMENT OF ALPHA TRIAL AS SCHEDULED. OIC (SHIP NAME) CONCURS.//
BT

**NOTE: LIST ALL RE-ENTRIES TO MATERIAL CERTIFICATION BOUNDARY AND ALL WORK ON SYSTEMS AFFECTING RECOVERABILITY, SALVAGE, WATERTIGHT INTEGRITY, OR OPERATION OF SHIP'S CONTROL SURFACES WITH CORRECTIVE ACTION SINCE RELEASE OF FAST CRUISE MESSAGE.**

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $B_8$

## SAMPLE NAVSEA TO TYCOM MESSAGE CONCERNING MATERIAL CONDITION AND AUTHORIZED DEPTH FOR ALPHA SEA TRIAL (SUBMARINES)

FM COMNAVSEASYSCOM WASHINGTON DC//SEA07//
TO (TYCOM)//N43//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(PARENT GROUP)//
(PARENT SQUADRON)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/NAVSEA SEA07//
SUBJ/(SUBS)-MATERIAL CONDITION READINESS AND DEPTH RECOMMENDATION FOR ALPHA SEA TRIALS OF PRECOMMUNIT (SHIP NAME AND HULL NO.)//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/B/DOC/OPNAVINST 9080.3//
AMPN/REF B IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING, AND OVERHAUL//
REF/C/MSG/(SUPERVISING ACTIVITY)/(DTG)//
AMPN/REF C IS SUPERVISING AUTHORITY MESSAGE REPORTING SUBSAFE MATERIAL CONDITION READINESS OF (SHIP NAME AND HULL NO.) FOR FAST CRUISE AND ALPHA SEA TRIALS//
REF/D/MSG/(SUPERVISING ACTIVITY)/(DTG)//
AMPN/REF D REPORTED THE MATERIAL READINESS OF THE SHIP TO COMMENCE FAST CRUISE AND SEA TRIALS.//
REF/E/LTR/ (TYCOM)/(SERIAL NUMBER)/(DATE)//
AMPN/REF E CONCURRED WITH ALPHA SEA TRIALS AGENDA FOR (SHIP NAME AND HULL NO.)//
REF/F/LTR/(SHIP PROGRAM MANAGER)/(SERIAL NUMBER)/(DATE)//
AMPN/REF F APPROVED THE ALPHA SEA TRIALS AGENDA FOR (SHIP NAME AND HULL NO.)//
RMKS/1. IAW REFS A AND B, AND AS REPORTED BY REFS C AND D, THE MATERIAL CONDITION OF THE (SHIP NAME AND HULL NO.) IS CERTIFIED SATISFACTORY FOR SEA TRIALS TO (SPECIFIED) PERCENT TEST DEPTH. RECOMMEND AUTHORIZED DIVING UNDER DELIBERATE AND CONTROLLED CONDITIONS TO (SPECIFIED) PERCENT TEST DEPTH IAW THE SEA TRIAL AGENDA CONCURRED IN BY REF E AND APPROVED BY REF F.
2. REQUEST (SHIP PROGRAM MANAGER) BE INFO ADDEE ON ALL SEA TRIALS SITREPS.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $B_9$

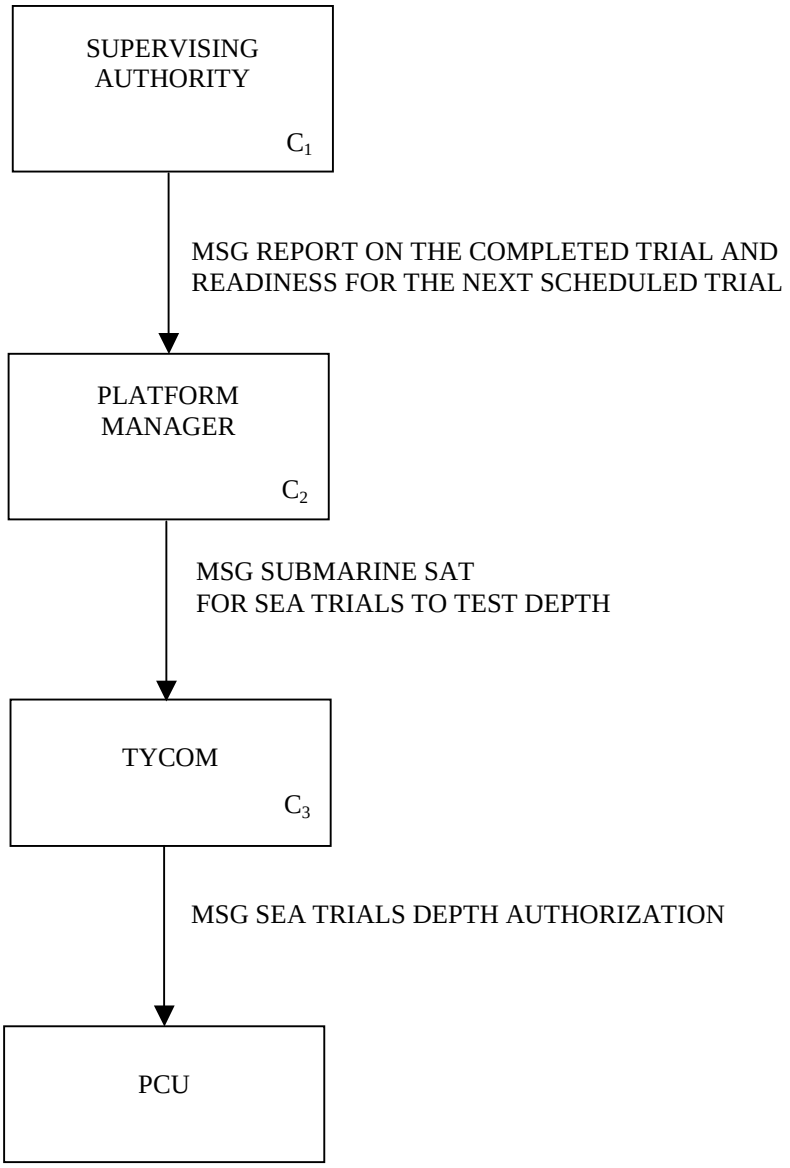
## SAMPLE TYCOM TO PRE-COMMISSIONING UNIT MESSAGE CONCERNING ALPHA SEA TRIAL AUTHORIZED TEST AND OPERATING DEPTH (SUBMARINES)

FM (TYCOM)//N43//
TO PRECOMUNIT (SHIP NAME)//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
(PARENT GROUP)//
(PARENT SQUADRON)//
(ISIC)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
DSU SAN DIEGO CA//N3//
COMSUBDEVRON FIVE SILVERDALE WA//N3//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(TYCOM)//
SUBJ/(SUBS) PRECOMUNIT (SHIP NAME AND HULL NO.) ALPHA SEA TRIAL DEPTH AUTHORIZATION//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS NAVSEA MESSAGE CONCERNING MATERIAL CONDITION AND AUTHORIZED DEPTH FOR ALPHA SEA TRIAL//
REF/B/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF B IS SUPERVISING AUTHORITY MESSAGE CONCERNING FAST CRUISE COMPLETION//
REF/C/DOC/(TYCOM)NOTE C3120//
AMPN/REF C IS PROMULGATION OF AUTHORIZED SUBMARINE TEST AND OPERATING DEPTH//
RMKS/1. REF A CERTIFIES SATISFACTORY MATERIAL CONDITION OF (SHIP NAME AND HULL NO.) FOR SEA TRIALS TO (SPECIFIED) PERCENT DESIGN TEST DEPTH. REF B REPORTED FAST CRUISE COMPLETED SATISFACTORILY AND SHIP IS READY FOR SEA TRIALS.
2. SUBJ TO RESTRICTIONS OF REFS A AND C, (SHIP NAME AND HULL NO.) IS AUTHORIZED TO CONDUCT DIVES UNDER DELIBERATE AND CONTROLLED CONDITIONS TO (SPECIFIED) PERCENT DESIGN TEST DEPTH FOR HULL INTEGRITY AND EMBT BLOW SYSTEM TESTS IAW APPROVED AGENDA FOR UNDERWAY TRIALS PRIOR TO SHIP DELIVERY.
3. FOR OIC (SHIP NAME): RECOGNIZING LIMITED UNDERWAY OPERATIONAL EXPERIENCE LEVEL, EXERCISE EXTREME CAUTION WHILE CONDUCTING ALL OPERATIONS AT MAX AUTH DEPTH. ENSURE YOUR SHIP CONTROL PARTIES ARE WELL VERSED IN ALL ASPECTS OF SHIP'S COMPENSATION AND EFFECTS OF SPEED AND TRIM ADJUSTMENTS, AS WELL AS PROCEDURES TO PREVENT EXCEEDING MAX AUTH DEPTH.//
4. THIS DEPTH AUTHORIZATION IS AUTOMATICALLY SUSPENDED UPON RE-ENTRY TO THE SUBSAFE CERTIFICATION BOUNDARY OR CASUALTY AFFECTING RECOVERABILITY, SALVAGE, WATERTIGHT INTEGRITY, OR OPERATION OF SHIP'S CONTROL SURFACES. THE SHIP SHALL NOT OPERATE AT A DEPTH GREATER THAN 200 FEET UNTIL RE-ENTRY IS CERTIFIED TO TYCOM AND TYCOM GRANTS APPROVAL TO OPERATE TO PREVIOUSLY AUTHORIZED DEPTH.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

**APPENDIX C**

## Message Scenario and Sample Messages For BRAVO, CHARLIE and Combined Trials (Submarines)



## APPENDIX $C_1$

## SAMPLE SUPERVISING AUTHORITY TO SHIP PROGRAM MANAGER MESSAGE CONCERNING DESIGN TEST DEPTH DIVE READINESS

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/07Q/08//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(TYCOM)//N43//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ/(SUBS) READINESS FOR (BRAVO, CHARLIE, ETC.) SEA TRIAL OF (SHIP NAME AND HULL NO.)//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS SUPERVISING AUTHORITY MESSAGE TO SHIP PROGRAM MANAGER CONCERNING READINESS OF SHIP FOR FAST CRUISE AND SEA TRIALS//
REF/B/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF B IS NAVSEA LETTER CONCERNING SUBSAFE CERTIFICATION AUDIT REPORT//
REF/C/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF C IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
RMKS/1. (SHIP NAME AND HULL NO.) HAS SUCCESSFULLY COMPLETED (ALPHA, BRAVO, ETC.) SEA TRIAL.
2. BY REF A, (SUPERVISING AUTHORITY) REPORTED ALL CAT I AUDIT RECOMMENDATIONS OF REF B SATISFACTORILY RESOLVED. THERE HAVE BEEN NO RECS OPENED AND NO SUBSAFE DEVIATIONS AND WAIVERS PROCESSED SINCE (ALPHA, BRAVO, ETC.) SEA TRIAL.(OR, IF RECS OR DEVIATIONS AND WAIVERS WERE PROCESSED SINCE THE START OF (ALPHA, BRAVO, ETC.) SEA TRIAL, REPORT ALL RECS OPENED SINCE THE START OF (ALPHA, BRAVO, ETC.) SEA TRIAL ARE CLOSED AND/OR ALL SUBSAFE DEVIATIONS AND WAIVERS PROCESSED SINCE (ALPHA, BRAVO, ETC.) SEA TRIAL ARE RESOLVED.)
3. STATUS OF REF B CAT 1A AUDIT ITEMS (SAME AS REPORTED REF A OR AS LISTED BELOW).
4. THE STATUS OF INCOMPLETE CAT II AUDIT FINDINGS OF REF B IS AS FOLLOWS:
A.
B.
5. IAW REF C, (SUPERVISING AUTHORITY) REPORTS THAT THE SUBSAFE MATERIAL CONDITION OF (SHIP NAME AND HULL NO.) IS SATISFACTORY FOR (BRAVO, CHARLIE, ETC.) SEA TRIAL TO TEST DEPTH. OIC (SHIP NAME AND HULL NO.) CONCURS.//
BT

**NOTE: LIST ALL RE-ENTRIES TO MATERIAL CERTIFICATION BOUNDARY AND ALL WORK ON SYSTEMS AFFECTING RECOVERABILITY, SALVAGE, WATERTIGHT INTEGRITY, OR OPERATION OF SHIP'S CONTROL SURFACES WITH CORRECTIVE ACTION SINCE RELEASE OF FAST CRUISE MESSAGE.**

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $C_2$

## SAMPLE NAVSEA TO TYCOM MESSAGE CONCERNING DESIGN TEST DEPTH DIVE AUTHORIZATION

FM COMNAVSEASYSCOM WASHINGTON DC//SEA 07//
TO (TYCOM)//N43//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(PARENT GROUP)//
(PARENT SQUADRON)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/NAVSEA SEA07//
SUBJ/(SUBS) SUBSAFE MATERIAL CONDITION READINESS AND DEPTH RECOMMENDATIONS FOR SEA TRIALS OF (SHIP NAME AND HULL NO.)//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/B/MSG/(SUPERVISING ACTIVITY)/(DTG)//
AMPN/REF B IS SUPERVISING AUTHORITY MESSAGE REPORTING READINESS OF SHIP FOR TEST DEPTH DIVE//
REF/C/LTR/(TYCOM) (SERIAL NUMBER)/(DATE)//
AMPN/REF C IS (TYCOM) LTR CONCURRING IN SEA TRIAL AGENDA//
REF/D/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF D IS (SHIP PROGRAM MANAGER) LTR APPROVING (BRAVO, CHARLIE, ETC.) SEA TRIAL AGENDA//
RMKS/1. IAW REF A AND REPORTED BY REF B, THE SUBSAFE MATERIAL CONDITION OF (SHIP NAME AND HULL NO.) IS CERTIFIED SATISFACTORY FOR (BRAVO, CHARLIE, ETC.) SEA TRIAL TO TEST DEPTH.
2. RECOMMEND AUTHORIZE DIVING UNDER DELIBERATE AND CONTROLLED CONDITIONS TO DESIGN TEST DEPTH IAW THE SEA TRIAL AGENDA CONCURRED IN BY REF C AND APPROVED BY REF D.
3. REQUEST THAT NAVSEA (SHIP PROGRAM MANAGER) BE INFO ADDEE FOR ALL SEA TRIAL SITREPS.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $C_3$

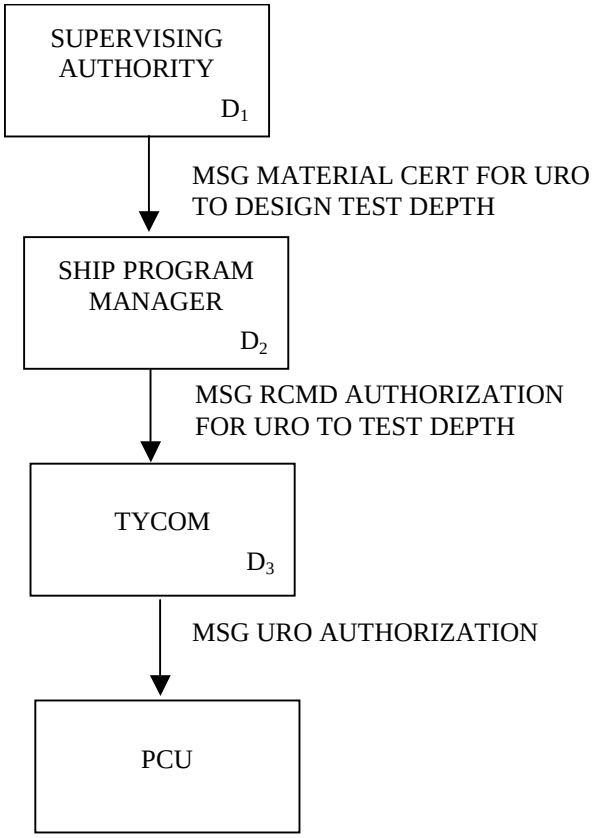
## SAMPLE TYCOM TO PRE-COMMISSIONING UNIT MESSAGE CONCERNING DESIGN TEST DEPTH DIVE AUTHORIZATION

FM (TYCOM)//N43//
TO PRECOMUNIT (SHIP NAME)//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
(PARENT GROUP)//
(PARENT SQUADRON)//
(ISIC)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
DSU SAN DIEGO CA//N3//
COMSUBDEVRON FIVE SILVERDALE WA//N3//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(TYCOM)//
SUBJ/(SUBS) PRECOMUNIT (SHIP NAME AND HULL NO.) (BRAVO, CHARLIE, ETC.) SEA TRIAL DEPTH AUTHORIZATION//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS NAVSEA MESSAGE AUTHORIZING TEST DEPTH AND EMBT BLOW SYSTEM TESTS//
REF/B/DOC/(TYCOM)NOTE C3120//
AMPN/REF B IS PROMULGATION OF AUTHORIZED SUBMARINE TEST AND OPERATING DEPTH//
REF/C/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF C IS (TYCOM) LTR CONCURRING IN SEA TRIAL AGENDA//
REF/D/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF D IS (SHIP PROGRAM MANAGER) LTR APPROVING (SHIP NAME AND HULL NO.) (BRAVO, CHARLIE, ETC.) SEA TRIAL AGENDA//
REF/E/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF E IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
RMKS/1. REF A CERTIFIES SATISFACTORY MATERIAL CONDITION OF (SHIP NAME AND HULL NO.) FOR SEA TRIALS TO DESIGN TEST DEPTH.
2. SUBJ TO RESTRICTIONS OF REFS A AND B, (SHIP NAME AND HULL NO.) IS AUTHORIZED TO CONDUCT DIVES UNDER DELIBERATE AND CAREFULLY CONTROLLED CONDITIONS TO DESIGN TEST DEPTH FOR HULL INTEGRITY AND EMBT BLOW SYSTEM TESTS IAW THE AGENDA FOR UNDERWAY TRIALS PRIOR TO SHIP DELIVERY CONCURRED IN BY REF C AND APPROVED BY REF D.
3. IAW REF E, THIS TEST DEPTH AUTHORIZATION IS AUTOMATICALLY SUSPENDED UPON RE- ENTRY TO THE MATERIAL CERTIFICATION BOUNDARY OR CASUALTY AFFECTING RECOVERABILITY, SALVAGE, WATERTIGHT INTEGRITY, OR OPERATION OF SHIP'S CONTROL SURFACES. THE SHIP SHALL NOT OPERATE AT A DEPTH GREATER THAN 200 FT UNTIL RE- ENTRY IS CERTIFIED TO TYCOM AND TYCOM APPROVAL TO OPERATE TO TEST DEPTH IS OBTAINED.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

**APPENDIX D**

## Message Scenario and Sample Messages For URO Certification (Submarines)



## APPENDIX $D_1$

## SAMPLE SUPERVISING AUTHORITY TO SHIP PROGRAM MANAGER MESSAGE CONCERNING URO

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/07Q/08//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
TYCOM//N43//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ/(SUBS) MATERIAL CONDITION OF (SHIP NAME AND HULL NO.)//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/B/LTR/COMNAVSEASYSCOM (SERIAL NUMBER)/(DATE)//
AMPN/REF B IS NAVSEA PHASE I SUBSAFE CERTIFICATION AUDIT REPORT//
REF/C/LTR/COMNAVSEASYSCOM (SERIAL NUMBER)/(DATE)//
AMPN/REF C IS NAVSEA PHASE II SUBSAFE CERTIFICATION AUDIT REPORT//
REF/D/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF D IS SUPERVISING AUTHORITY MESSAGE REPORTING READINESS OF SHIP FOR FAST CRUISE AND SEA TRIALS//
RMKS/1. IAW REF A, THE (SUPERVISING AUTHORITY) CERTIFIES THE SATISFACTORY COMPLETION OF ALL SEA TRIALS, COMPLETION OF CONTROLLED DIVES, THE RESOLUTION OF MANDATORY SEA TRIAL DEFICIENCIES AND THE RESOLUTION OF ALL CAT IA AUDIT ITEMS OF REFS B AND C.
2. REF D REPORTED SATISFACTORY RESOLUTION OF ALL CAT I AUDIT RECOMMENDATIONS OF REF B AND/OR C. IAW REF A, (SUPERVISING AUTHORITY) REPORTS THAT ALL CAT IA AUDIT RECOMMENDATIONS OF REF B AND/OR C HAVE BEEN SATISFACTORILY RESOLVED. THERE IS NO DEFERRED SUBSAFE WORK AND THERE ARE NO SUBSAFE DEVIATIONS AND WAIVERS WITH CONDITIONS WHICH HAVE NOT BEEN SATISFIED.(OR LIST DEFERRED SUBSAFE WORK AND/OR CONDITIONAL SUBSAFE DEVIATIONS AND WAIVERS.)
3. THE STATUS OF INCOMPLETE CAT II AUDIT ITEMS OF REF B AND C IS AS FOLLOWS:
A.
B.

4. THE MATERIAL CONDITION OF (SHIP NAME AND HULL NO.) IS SATISFACTORY FOR UNRESTRICTED OPERATION TO DESIGN TEST DEPTH.//
BT

**NOTE: LIST ALL RE-ENTRIES TO MATERIAL CERTIFICATION BOUNDARY AND ALL WORK ON SYSTEMS AFFECTING RECOVERABILITY, SALVAGE, WATERTIGHT INTEGRITY, OR OPERATION OF SHIP'S CONTROL SURFACES WITH CORRECTIVE ACTION SINCE RELEASE OF FAST CRUISE MESSAGE.**

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $D_2$

## SAMPLE NAVSEA TO TYCOM MESSAGE CONCERNING URO

FM COMNAVSEASYSCOM WASHINGTON DC//SEA 07//
TO (TYCOM)//N43//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/NAVSEA SEA07//
SUBJ/(SUBS) RECOMMENDATION FOR UNRESTRICTED OPERATIONS FOR (SHIP NAME AND HULL NO.)//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/B/MSG/(SUPERVISING ACTIVITY)/(DTG)
AMPN/REF B IS SUPERVISING AUTHORITY MESSAGE REPORTING THE SUBSAFE MATERIAL CONDITION READINESS OF (SHIP NAME AND HULL NO.) IS SATISFACTORY AND NO OUTSTANDING DEPTH LIMITING DISCREPANCIES EXIST.
REF/C/DOC/OPNAVINST 9110.1//
AMPN/REF C IS POLICY CONCERNING SUBMARINE TEST AND OPERATING DEPTHS//
RMKS/1. IAW REF A, REF B REPORTED THE SUBSAFE MATERIAL CONDITION READINESS OF THE (SHIP NAME AND HULL NO.) IS SATISFACTORY AND NO OUTSTANDING DEPTH LIMITING DISCREPANCIES EXIST.
2. REF B ALSO REPORTED SATISFACTORY COMPLETION OF ALL SEA TRIALS, COMPLETION OF CONTROLLED DIVES AND RESOLUTION OF MANDATORY SEA TRIAL DEFICIENCIES.
3. IAW REFS A AND C NAVSEA CERTIFIES THAT THE SUBSAFE MATERIAL CONDITION OF (SHIP NAME AND HULL NO.) IS SATISFACTORY AND RECOMMENDS THAT THE SHIP BE AUTHORIZED UNRESTRICTED OPERATIONS TO TEST DEPTH SUBJ TO COMPLIANCE WITH REF A WITH FOLLOWING RESTRICTIONS (LIST APPLICABLE).
4. URO MRC PERIODICITIES REQUIRED BY REF A, SHALL COMMENCE ON (date).//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX $D_3$

## SAMPLE TYCOM TO PRE-COMMISSIONING UNIT MESSAGE CONCERNING URO

FM (TYCOM)//N43//
TO PRECOMUNIT (SHIP NAME)//
INFO CNO WASHINGTON DC//N77//
FLEET COMMANDER//N43//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
(PARENT GROUP)//
(PARENT SQUADRON)//
(ISIC)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
SUBMEPP PORTSMOUTH NH//1814/1830//
BT
UNCLAS //N03120//
MSGID/GENADMIN/(TYCOM)//
SUBJ/(SUBS) UNRESTRICTED OPERATION OF (SHIP NAME AND HULL NO.)//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS NAVSEA MESSAGE TO TYCOM CONCERNING URO//
REF/B/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF B IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/C/DOC/(TYCOM)NOTE C3120/(DATE OF CURRENT REVISION)//
AMPN/REF C IS PROMULGATION OF AUTHORIZED SUBMARINE TEST AND OPERATING DEPTH//
RMKS/1. REF A CERTIFIED SATISFACTORY MATERIAL CONDITION OF (SHIP NAME) AND RECOMMENDED (SHIP NAME) BE AUTHORIZED TO CONDUCT UNRESTRICTED OPERATIONS TO DESIGN TEST DEPTH.
2. (SHIP NAME) IS AUTHORIZED TO CONDUCT OPERATIONS TO DESIGN TEST DEPTH SUBJECT TO THE FOLLOWING: (LIST RESTRICTIONS IF THEY EXIST OR STATE "NONE")

A.
B.
C.

3. CONTINUED CERTIFICATION FOR OPERATIONS TO DESIGN TEST DEPTH IS SUBJECT TO THE MAINTENANCE REQUIREMENTS OF REF B. URO MRC PERIODICITIES COMMENCE (EFFECTIVE DATE).
4. THIS MSG REMAINS IN EFFECT UNTIL INCLUDED IN A FUTURE REVISION OF REF C.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX E

### SAMPLE SUPERVISING AUTHORITY MESSAGE TO SHIP PROGRAM MANAGER AND TYCOM CONCERNING PSA FAST CRUISE/SEA TRIAL READINESS (SUBMARINES)

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08/07Q//
(TYCOM)//N43//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(PARENT GROUP)//N4//
(PARENT SQUADRON)//
USS (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ: (SUBS) READINESS FOR FAST CRUISE AND SEA TRIAL OF (SHIP NAME AND HULL NO.)//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/B/DOC/OPNAVINST 9080.3//
AMPN/REF B IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING AND OVERHAUL//
REF/C/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF C IS COMNAVSEASYSCOM LETTER CONCERNING NAVSEA SUBSAFE CERTIFICATION AUDIT REPORT//
RMKS/1. IAW REFS A AND B, (SUPERVISING AUTHORITY) CERTIFIES THE MATERIAL CONDITION OF THOSE PARTS OF (SHIP NAME AND HULL NO.) INSTALLED, REPAIRED AND/OR TESTED BY THE SHIPYARD SATISFACTORY FOR POST REPAIR SEA TRIALS.
2. IAW REF A, (SUPERVISING AUTHORITY) REPORTS THAT ALL CAT I AUDIT RECOMMENDATIONS OF REF C HAVE BEEN SATISFACTORILY RESOLVED. THERE ARE NO SUBSAFE DEVIATIONS AND WAIVERS WITH CONDITIONS WHICH HAVE NOT BEEN SATISFIED.(OR LIST CONDITIONAL DEVIATIONS AND WAIVERS.)
3. IAW REF A, THE STATUS OF INCOMPLETE CAT IA AUDIT RECOMMENDATIONS OF REF C IS AS FOLLOWS:
A.
B.
4. (SUPERVISING AUTHORITY) REPORTS READINESS OF USS (SHIP NAME AND HULL NO.) FOR COMMENCEMENT OF FAST CRUISE. CO USS (SHIP NAME AND HULL NO.) CONCURS.
5. SUBJECT TO SATISFACTORY COMPLETION OF FAST CRUISE AND RESOLUTION OF MANDATORY DEFICIENCIES (SUPERVISING AUTHORITY) CONSIDERS USS (SHIP NAME AND HULL NO.) MATERIAL CONDITION READINESS SATISFACTORY FOR COMMENCEMENT OF SEA TRIALS.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX F

### SAMPLE SHIP PROGRAM MANAGER MESSAGE TO TYCOM CONCERNING PSA SEA TRIAL AUTHORIZATION (SUBMARINES)

FM COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
TO (TYCOM)//N43//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(PARENT GROUP)//N4//
(PARENT SQUADRON)//
USS (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/COMNAVSEASYSCOM//
SUBJ: (SUBS) SEA TRIAL DEPTH AUTHORIZATION FOR (SHIP NAME AND HULL NO.)//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/B/DOC/OPNAVINST 9080.3//
AMPN/REF B IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING, AND OVERHAUL//
REF/C/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF C IS SUPERVISING AUTHORITY TO SHIP PROGRAM MANANGER CONCERNING PSA FAST CRUISE/SEA TRIAL READINESS//
REF/D/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF D IS NAVSEA LETTER CONCURRING IN SEA TRIAL AGENDA FOR (SHIP NAME)//
REF/E/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF E IS TYCOM LETTER APPROVING SEA TRIAL AGENDA FOR (SHIP NAME)//
RMKS/1. IAW REFS A AND B, AS REPORTED BY REF C, THE MATERIAL CONDITION OF THOSE PARTS OF THE USS (SHIP NAME AND HULL NO.) INSTALLED, REPAIRED AND/OR TESTED BY THE SHIPYARD IS CERTIFIED SATISFACTORY FOR POST REPAIR SEA TRIALS.
2. PENDING CONFIRMATION BY TYCOM THAT CERTIFICATION REQUIREMENTS OF REF A HAVE BEEN SUSTAINED FOR THE REMAINDER OF THE SUBSAFE CERTIFICATION BOUNDARY, NAVSEA RECOMMENDS AUTHORIZE DIVING UNDER DELIBERATE AND CAREFULLY CONTROLLED CONDITIONS TO (SPECIFIED DEPTH) IAW SEA TRIAL AGENDA CONCURRED IN BY REF D AND APPROVED BY REF E (SUBJECT TO THE FOLLOWING RESTRICTION).
3. REQUEST (SHIP PROGRAM MANAGER) BE INFO ADDEE FOR ALL SEA TRIAL SITREPS.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX G

## SAMPLE NAVSEA MESSAGE TO TYCOM RECOMMENDING UNRESTRICTED OPERATIONS BE AUTHORIZED FOLLOWING THE COMPLETION OF PSA (SUBMARINES)

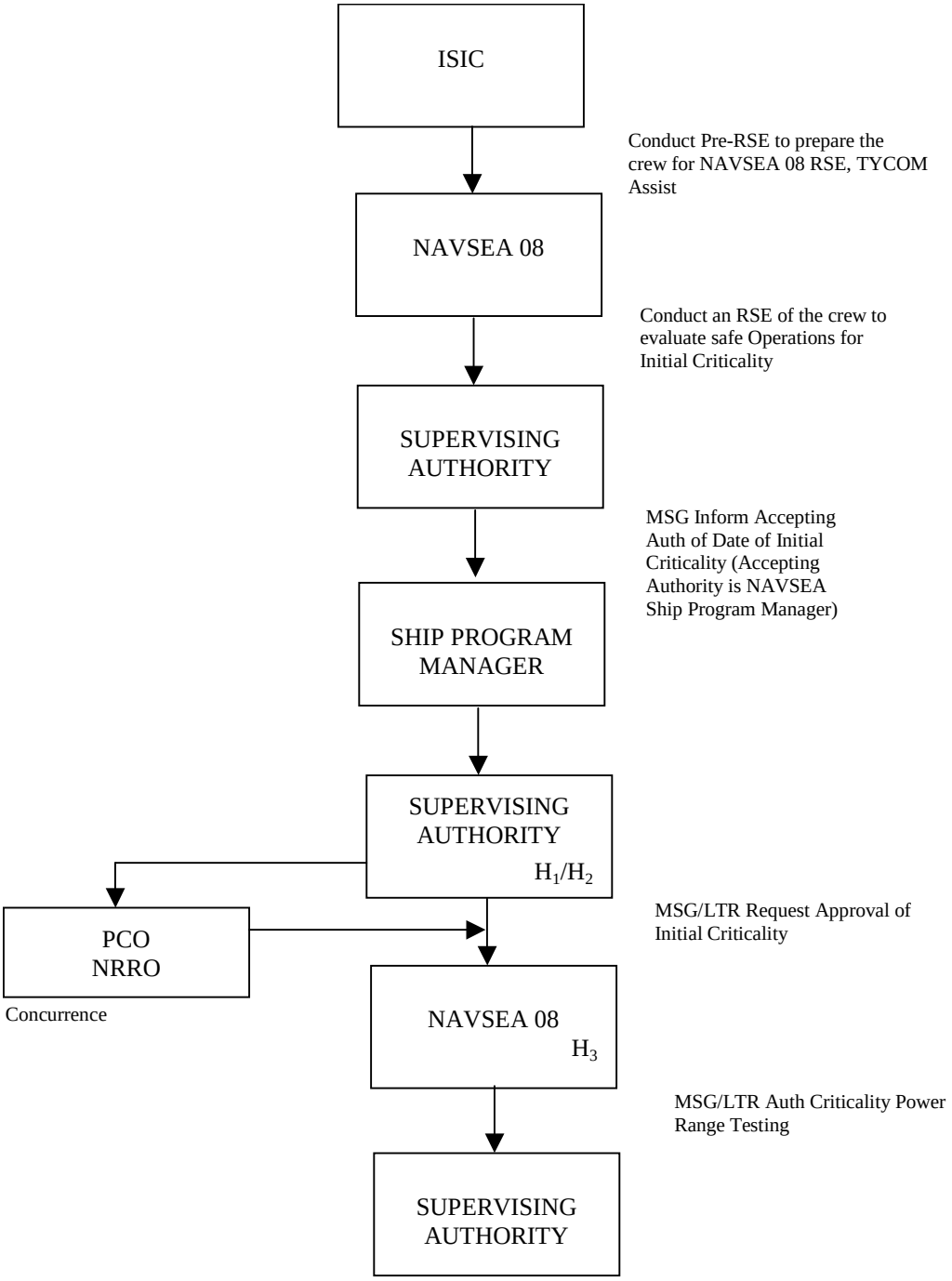
FM COMNAVSEASYSCOM WASHINGTON DC//SEA 07//
TO (TYCOM)//N43//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(PARENT GROUP)//N5//
(PARENT SQUADRON)//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
USS (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/COMNAVSEASYSCOM//
SUBJ: (SUBS) SUBMARINE MATERIAL CERTIFICATION OF USS (SHIP NAME AND HULL NO.)//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/B/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF B IS SUPERVISING AUTHORITY MESSAGE TO TYCOM CONCERNING COMPLETION OF FAST CRUISE AND CORRECTION OF MANDATORY DEFICIENCIES//
RMKS/1. IAW REF A AND AS REPORTED BY REF B, NAVSEA CERTIFIES THE MATERIAL CONDITION OF THOSE PARTS OF USS (SHIP NAME AND HULL NO.) INSTALLED, REPAIRED, AND/OR TESTED BY THE SHIPYARD MEETS THE REQUIREMENTS OF REF A AND NO OUTSTANDING DEPTH LIMITING DISCREPANCIES EXIST. REF B ALSO REPORTED SATISFACTORY COMPLETION OF ALL SEA TRIALS, COMPLETION OF ALL CONTROLLED DIVES AND CORRECTION OF ALL MANDATORY SEA TRIAL DEFICIENCIES.
2. PENDING CONFIRMATION BY TYCOM THAT REF A CERTIFICATION REQUIREMENTS HAVE BEEN SUSTAINED FOR THE REMAINDER OF SUBSAFE CERTIFICATION BOUNDARY, NAVSEA RECOMMENDS THAT USS (SHIP NAME AND HULL NO.) BE AUTHORIZED UNRESTRICTED OPERATIONS TO TEST DEPTH SUBJECT TO SATISFACTORY COMPLIANCE WITH THE MAINTENANCE AND OTHER REQUIREMENTS OF REF A SUBJECT TO THE FOLLOWING RESTRICTIONS:
A.
B.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

**APPENDIX H**

## Pre-RSE/RSE/Criticality/Power Range Testing Logic Table (All Nuclear Powered Ships)



## APPENDIX $H_1$

## SAMPLE SUPERVISING AUTHORITY TO NAVSEA MESSAGE REQUESTING AUTHORIZATION FOR CRITICALITY

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//08//
INFO CNO WASHINGTON DC//N77//
(SHIP PROGRAM MANAGER)//
(FLEET COMMANDER)//N43//
(TYCOM)//N43/N9 (FOR CVN)//
(ISIC)//
(PARENT GROUP)//N4//
(PARENT SQUADRON)//
PRECOMUNIT (SHIP NAME)//
BT
UNCLAS NOFORN//N09690//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ/(SHIP NAME AND HULL NO.) INITIAL CRITICALITY OF REACTOR PLANT NR TWO//
REF/A/DOC/NAVSEA 0989-028-5000//
AMPN/REF A IS MANUAL FOR THE CONTROL OF THE TESTING AND PLANT CONDITIONS//
REF B/DOC/OPNAVINST 9080.3//
AMPN/REF B IS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS UNDER CONSTRUCTION, MODERNIZATION, CONVERSION, REFUELING, AND OVERHAUL//
REF/C/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF C IS NAVSEA 08 LETTER IDENTIFYING CORE INSTALLED IN (SHIP NAME)//
REF/D/DOC/A4W/A1G PREREQ LIST NR SEVEN REV D DTD 6 MAY 86//
AMPN/REF D IS A4W/A1G PREREQUISITE LIST NUMBER SEVEN//
REF/E/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF E IS NAVSEA PROGRAM MANAGER LETTER CONCERNING RESOLUTION TO OUTSTANDING WORK ITEMS//
REF/F/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF F IS SUPERVISING AUTHORITY LETTER CONCERNING RESOLUTION TO OUTSTANDING WORK ITEMS//
RMKS/1. IAW REFS A AND B, REQ AUTHORIZATION TO PERFORM TEST PROCEDURE A4W/A1G 3-KA-9 REV D DTD 5-6-86 IN REACTOR PLANT NR TWO.
2. THE REACTOR CORE IS INSTALLED IN (SHIP NAME) REACTOR NR TWO AS SPECIFIED BY REF C.
3. (SHIPBUILDER) HAS CERTIFIED THAT ALL PREREQS FOR NR TWO PLANT INITIAL CRITICALITY REQD BY REF D ARE MET.
4. THE PCO, (SHIP NAME) AND NRRO CONCUR THAT THE NUCLEAR PROPULSION PLANT NR TWO IS READY FOR INITIAL CRITICALITY AND SUBSEQUENT POWER RANGE TESTING.
5. ALL OUTSTANDING WORK ITEMS HAVE BEEN RESOLVED BY REFS E AND F.
6. ESTIMATE (SPECIFIED) DAYS WILL BE REQUIRED TO PERFORM CRITICALITY AND POWER RANGE TESTING OF NR TWO PLANT. REQ A MAX OF (SPECIFIED) EFPH BE AUTHORIZED.
7. THIS EVENT IS SKED FOR (TIME (LOCAL)) AND (DATE).//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

**NOFORN when filled in**

## APPENDIX $H_2$

## SAMPLE SUPERVISING AUTHORITY TO NAVSEA REQUEST FOR INITIAL CRITICALITY

From: (Supervising Authority), USN, (Location)
To: Commander, Naval Sea Systems Command (08)

Subj: AUTHORIZATION REQUEST FOR (Ship Name and Hull No.) INITIAL CRITICALITY

Ref: (a) (Plant Type) Initial Criticality Prerequisite List
(b) COMNAVSEASYSCOM letter Ser (Serial Number and Date)

1. Request authorization required by reference (a) to perform test procedure with TPI incorporated.

2. The reactor core installed in (Ship Name and Hull No.) as specified in reference (b).

3. Estimated time to perform all critical testing is __ days. All critical testing will require a maximum of __ effective full power hours. This estimate includes Critical Over-the-Side-Noise testing.

4. The shipyard has certified that all the prerequisites for Initial Criticality required by reference (a) are met and the ship is ready for Initial Criticality and subsequent Power Range Testing.

5. The following reactor plant work item(s) is (are) not completed and does (do) not involve safety of the reactor plant.

a.

b.

6. The Prospective Commanding Officer and Naval Reactors Representative concur.

7. The event is scheduled for (Date) at (Time).

(Signature)

Copy to:
PCO (Ship Name and Hull No.)
NRRO (Location)
TYCOM (N43)(N9 for CVN)
ISIC

## APPENDIX $H_3$

## SAMPLE NAVSEA TO SUPERVISING AUTHORITY MESSAGE AUTHORIZING CRITICALITY

FM COMNAVSEASYSCOM WASHINGTON DC//08//
TO (SUPERVISING AUTHORITY)//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(TYCOM)//N43/N9 (FOR CVN)//
(ISIC)//
NRRO (LOCATION)//
(PARENT GROUP)//N4//
(PARENT SQUADRON)//
PCO (SHIP NAME AND HULL NO.)//
BT
UNCLAS NOFORN//N09210//
MSGID/GENADMIN/COMNAVSEASYSCOM//
SUBJ: INITIAL CRITICALITY OF REACTOR NO. 2 IN (SHIP NAME AND HULL NO.)//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS SUPERVISING AUTHORITY MESSAGE REQUESTING AUTHORIZATION FOR CRITICALITY//
REF/B/DOC/(PLANT TYPE) TEST PROCEDURE (NUMBER SPECIFIED)//
AMPN/REF B IS TEST PROCEDURE FOR INITIAL APPROACH TO CRITICALITY//
RMKS/1. REF A CERTIFIES THAT ALL PREREQUISITES REQUIRED BY REF B FOR INITIAL CRITICALITY OF REACTOR NO. 2 IN (SHIP NAME) HAVE BEEN MET. REF A REQUESTS NAVSEA AUTHORIZATION REQUIRED BY REF B TO CONDUCT INITIAL CRITICAL OPERATIONS OF REACTOR NO. 2 IN (SHIP NAME). REF A ESTIMATES (SPECIFIED) EFPH NECESSARY TO CONDUCT INITIAL CRITICALITY AND SUBSEQUENT POWER RANGE TESTING.
2. BASED ON THE STATEMENTS CONTAINED IN REF A, YOU ARE AUTHORIZED TO PROCEED WITH INITIAL CRITICALITY AND POWER RANGE TESTING OF REACTOR NO. 2 IN (SHIP NAME) IN ACCORDANCE WITH APPROVED PROCEDURES, FOR A MAXIMUM OF (SPECIFIED) EFPH.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

**NOFORN when filled in**

## APPENDIX I

### SAMPLE TYCOM MESSAGE CONCERNING SEA TRIAL AGENDA (SUBMARINES)

FM (TYCOM)//N43//
TO (SUPERVISING AUTHORITY)//
PRECOMUNIT (SHIP NAME)//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
DSU SAN DIEGO CA//N3//
COMSUBDEVRON FIVE SILVERDALE WA//N3//
(ISIC)//
(PARENT GROUP)//
(PARENT SQUADRON)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(TYCOM)//
SUBJ/(SUBS) (SHIP NAME AND HULL NO.) (TRIAL NAME) SEA TRIAL AGENDA//
REF/A/DOC/COMFLTFORCOMINST 4790.3//
AMPN/REF A IS JOINT FLEET MAINTENANCE MANUAL//
REF/B/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)/NOTAL//
AMPN/REF B IS (SUPERVISING AUTHORITY) FIRST ENDORSEMENT TO (SHIPBUILDER) LTR (SERIAL/DATE)//
SUBJ: (SHIPBUILDER) (SHIP NAME AND HULL NO.) (TRIAL) UNDERWAY SEA TRIAL AGENDA, REV (-)//
RMKS/1. IAW REF A, ORIG CONCURS WITH THE OPERATIONAL ASPECTS OF REF B SEA TRIAL AGENDA.
2. FOR OIC (SHIP NAME AND HULL NO.): RECOGNIZING LIMITED UNDERWAY OPERATIONAL EXPERIENCE LEVEL, EXERCISE EXTREME CAUTION WHILE CONDUCTING ALL OPERATIONS AT TEST DEPTH. ENSURE YOUR SHIP CONTROL PARTIES ARE WELL VERSED IN ALL ASPECTS OF SHIP'S COMPENSATION AND EFFECTS OF SPEED AND TRIM ADJUSTMENTS, AS WELL AS PROCEDURES TO PREVENT EXCEEDING TEST DEPTH.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX J

## SAMPLE TYCOM DSRS SUPPORT SERVICES MESSAGE (SUBMARINES)

FM (TYCOM)//N31//
TO COMSUBDEVRON FIVE SILVERDALE WA//N31//
(SUPERVISING AUTHORITY)//(IF SUBSIG II USED)
(COMSUB SQD/GRP (ISIC))//
USS (SHIP NAME)//(MOSUB)
USS (SHIP NAME)//(ESCORT)(IF SUBSIG II NOT USED)
INFO CNO WASHINGTON DC//21//23//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08/SEA07//
(FLEET COMMANDER)//N43/N33//
COMSUBPAC PEARL HARBOR HI//N31/N4/N40//
COMSECONDFLT//
COMNAVSURFLANT NORFOLK VA//N31/N4//
COMNAVAIRLANT NORFOLK VA//N31//
(SUPERVISING AUTHORITY)//(RESPONSIBLE SHIPBUILDER)
COMSUBDEVRON FIVE DET SAN DIEGO CA//
CTF TWO SIX//
CTF TWO SIX PT ONE//
NUWC DIV NEWPORT RI//2412//
FTSCLANT NORFOLK VA//4242//
DSU SAN DIEGO CA//00//
NAVUNSEAWARCENDIV NEWPORT RI//02245//
NAVUNSEAWARCENDET WEST PALM BEACH FL//3812//
NAVUNSEAWARCENDET AUTEC ANDROS ISLAND BAHAMAS//05//
NAVSURFWARCEN CARDEROCKDIV BETHESDA MD//1921//
PEOSUBCBTWPNSYS WASHINGTON DC//PMO417//
COMSUBRON (SPECIFY)//(STRL UNIT)
COMSUBRON (SPECIFY)//(MOSUB)
(STRL UNIT)//
BT
UNCLAS //N03120//
MSGID/GENADMIN/(TYCOM)//
SUBJ/(SUBS) SUBMARINE SEA TRIAL SUPPORT SERVICES//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS SUPERVISING AUTHORITY/RESPONSIBLE SHIPBUILDER SEA TRIAL SUPPORT REQUEST//
REF/B/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF B IS CNO LETTER CONCERNING SEA TRIALS//
REF/C/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF C IS NAVSEA LETTER TO CNO DESCRIBING GMV VS MOSUB CAPABILITY//

REF/D/DOC/COMFLTFORCOMINST 4790.3//
AMPN/REF D IS JOINT FLEET MAINTENANCE MANUAL//
REF/E/TEL/COMSUBLANT/(DD MM YY)//(CONFIRMING STRL SCHEDULE)
AMPN/REF E IS TELCON BETWEEN (ORIGINATOR ACTIVITY)/(PERSON'S NAME) AND (CALLED ACTIVITY)/(PERSON'S NAME) OR (SUPERVISING AUTHORITY)(SUBSIG II)//
RMKS/1. IRT REF A AND IAW REF B THROUGH D, THE FOLLOWING ASSIGNMENTS APPLY FOR (STRL UNIT NAME AND HULL NO.) SEA TRIALS OCCURRING PD: (DD-DDMMM) (ALPHA 70% TD) AND (DD-DDMMM) (BRAVO 100% TD).

A. DSRV SUPPORT SHIP - USS (MOSUB NAME AND HULL NO.)
B. RESCUE PORT -
C. RESCUE PORT REPRESENTATIVE -
D. RESCUE AIRFIELD -

2. FOR CNO, UNODIR, INTEND TO IMPLEMENT REF C RECOMMENDATIONS TO COMPENSATE FOR LOW (LESS THAN 1.0 FT) TRANSVERSE METACENTRIC HEIGHT (GM) CONDITION WITH DSRV INSTALLED ON MOSUB.
3. FOR COMSUBGRU TWO USS (MOSUB): TO CORRECT CONDITION OF PARA 2, ACCOMPLISH FOLLOWING IF ACTUAL RESCUE OPS WITH DSRV REQUIRED:

A. OFF-LOAD TORPEDOES AS REQUIRED BY REF C (REMAINING TORPEDOES MAY BE TUBE LOADED OR STOWED IN LOWER RACKS)

B. REDUCE STORES AS REQUIRED BY REF C, APPROXIMATELY:
- DRY--(SPECIFY) LBS (LOWER AND MIDDLE LEVEL)
- FROZEN--(SPECIFY) LBS
- CHILL--(SPECIFY) LBS

C. CONVERT AUX 2 TO VARIABLE BALLAST TANK AND PRESS FULL WITH WATER (FRESH WATER IS ACCEPTABLE). RETAIN STORED CONTENTS OF AUX 2 ON BOARD, SECURED LOW IN TORPEDO ROOM. USS (MOSUB NAME) VERIFY ABILITY TO COMPLY WITH SUBPARA C AND REPORT RESULTS TO COMSUBLANT INFO (COMSUBGRU/RON (ISIC)).

4. AS REQUIRED REF A AND IAW REF D SUBSIG II IS APPROVED AS ESCORT FOR (STRL UNIT) SEA TRIALS OCCURRING (DD-DDMMM). THIS CONFIRMS REF E.
5. FOR (COMSUBGRU/RON (ISIC)), PROVIDE GOLD DOLPHIN RIDER ONBOARD SUBSIG II.
6. FOR (STRL UNIT), INCLUDE THE FOLLOWING INFO ADDEES ON FINAL TEST DEPTH DEEP DIVE CHECK REPORT: COMSUBPAC PEARL HARBOR HI, COMSUBDEVRON FIVE SILVERDALE WA, AND DSU SAN DIEGO CA.
7. DIRLAUTH ALCON FOR EVENT SCHEDULES AND SCHEDULE CHANGES.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX K

## SAMPLE TYCOM MESSAGE TO PCU CONCERNING USE OF THE FBW SCS IN SUPPORT OF ALPHA SEA TRIALS (SUBMARINES)

FROM: COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR HI>//
TO: PRECOMUNIT <SHIP NAME>//
INFO CNO WASHINGTON DC
COMNAVSEASYSCOM WASHINGTON DC
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
<DIRSSP WASHINGTON DC FOR SSBN/SSGN>
COMSUBGRU <NO.>
COMSUBRON <NO.>
<SUPERVISING AUTHORITY>
BT
UNCLAS // N09094 //
MSGID/GENADMIN/COMSUB<LANT/PAC>//
SUBJ/(SUBS) PRECOMUNIT <SHIP NAME/HULL NO.> AUTHORIZATION TO USE THE FLY-BY-WIRE SHIP CONTROL SYSTEM IN SUPPORT OF ALPHA SEA TRIALS//
REF/A/MSG/COMNAVSEASYSCOM/<DTG>// {G.2.2}
REF/B/MSG/<SUPERVISING AUTHORITY>/<DTG>//{G.2.3}
REF/C/LTR/COMSUB<LANT/PAC>/<SER NO./DATE>//
REF/D/LTR/NAVSEA/<SER NO./DATE>//
REF /E/LTR NAVSEA SERNO./DATE
NARR/REF A IS NAVSEA FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION READINESS REPORT AND ALPHA SEA TRIALS RECOMMENDATION FOR <SHIP NAME/HULL NO.>. REF B IS <SUPERVISING AUTHORITY> REPORT OF FAST CRUISE COMPLETION AND READINESS OF FLY-BY-WIRE SHIP CONTROL SYSTEM FOR ALPHA SEA TRIALS. REF C CONCURRED WITH THE SEA TRIALS AGENDA. REF D APPROVED THE SEA TRIALS AGENDA.//
RMKS/1. REF A CERTIFIED THE FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION OF <SHIP NAME/HULL NO.> SATISFACTORY FOR ALPHA SEA TRIALS.
2. REF B REPORTED SUCCESSFUL COMPLETION OF FAST CRUISE AND READINESS OF FLY-BY-WIRE SHIP CONTROL SYSTEM FOR ALPHA SEA TRIALS.
3. <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM USE IS AUTHORIZED IN SUPPORT OF ALPHA SEA TRIALS IAW THE ALPHA SEA TRIALS AGENDA CONCURRED IN BY REF C AND APPROVED BY REF D. THERE ARE NO FLY-BY-WIRE SHIP CONTROL SYSTEM or SHIP RELATED OPERATING RESTRICTIONS/LIMITS WHICH HAVE NOT BEEN SATISFIED. <or identify operating restrictions/limits>//
4. THIS CERTIFICATION IS VALID THROUGHOUT TRIALS UNLESS A DEFICIENCY HAS BEEN DISCOVERED. SHIP SPEED IS RESTRICTED TO LESS THAN 20 KNOTS WHEN A FBW SCS FAULT CONDITION RESULTS IN A MAJOR NON-CONFORMANCE AFFECTING CONTROL OF SHIPS PITCH, HEADING, DEPTH OR CONTROL SURFACES. THESE DEFICIENCIES MUST BE REPORTED TO NAVSEA AND THE APPROPRIATE FLEET AND TYPE COMMANDERS. PREVIOUS NAVSEA CERTIFICATION OF THE FBW SCS MATERIAL CONDITION SHALL BE SUSPENDED UNTIL NAVSEA REVIEWS THE REPORT AND CERTIFIES TO THE TYCOM THAT THE FBW SCS MATERIAL CONDITION IS SATISFACTORY FOR SEA TRIALS IN ACCORDANCE WITH THE SEA TRIAL AGENDA APPROVED BY REFERENCE D. THE SHIP'S SPEED IS RESTRICTED TO LESS THAN 20 KNOTS UNTIL SATISFACTORY RESOLUTION OF THE MAJOR NON-CONFORMANCE AND TYCOM APPROVAL TO OPERATE THE FBW SCS TO PREVIOUSLY AUTHORIZED CONDITIONS IS GRANTED, UNLESS SPECIFICALLY ADDRESSED IN THE SEA TRIAL AGENDA.
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX L

## SAMPLE TYCOM MESSAGE TO PCU CONCERNING FBW SCS MATERIAL CONDITION INITIAL CERTIFICATION (SUBMARINES)

FROM: COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR HI>//
TO: PRECOMUNIT <SHIP NAME>//
INFO CNO WASHINGTON DC
COMNAVSEASYSCOM WASHINGTON DC
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
<DIRSSP WASHINGTON DC FOR SSBN/SSGN>
COMSUBGRU <NO.>
COMSUBRON <NO.>
<SUPERVISING AUTHORITY>
BT
UNCLAS // N09094 //
MSG/GENADMIN/COMSUB<LANT/PAC>//
SUBJ/(SUBS) UNRESTRICTED USE OF PRECOMUNIT <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATION//
REF/A/DOC/NAVSEA T9044-AD-MAN-010//
REF/B/MSG/NAVSEA/<DTG>// {G.2.7}
NARR/REF A IS THE REQUIREMENTS MANUAL FOR SUBMARINE FLY-BY-WIRE SHIP CONTROL SYSTEMS. REF B IS THE NAVSEA MSG FOR UNRESTRICTED USE OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATION.//
RMKS/1. IAW REF A, REF B CERTIFIED THAT THE FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION OF <SHIP NAME/HULL NO.> IS SATISFACTORY AND RECOMMENDED UNRESTRICTED USE OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATIONS.
2. <SHIP NAME/HULL NO.> IS AUTHORIZED UNRESTRICTED USE OF THEIR FLY-BY-WIRE SHIP CONTROL SYSTEM IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATION SUBJECT TO THE FOLLOWING RESTRICTIONS: <list restrictions if they exist or state "NONE">
3. CONTINUED CERTIFICATION FOR UNRESTRICTED USE OF THE FLY-BY-WIRE SHIP CONTROL SYSTEM IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATION IS SUBJECT TO COMPLIANCE WITH REF A.
4. RECOMMENDATION FOR SHIP'S UNRESTRICTED OPERATION TO TEST DEPTH WILL BE ADDRESSED BY SEPARATE CORRESPONDENCE.
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX M

## SAMPLE TYCOM MESSAGE CONCERNING DSRS SUPPORT SERVICES (SUBMARINES)

FM (TYCOM)//N31//
TO (SUPERVISING AUTHORITY)//(IF SUBSIG II USED)
(ISIC)//
USS (SHIP NAME)//(ESCORT)(IF SUBSIG II NOT USED)
INFO CNO WASHINGTON DC//21//23//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08/SEA07//
(FLEET COMMANDER)//N43/N33//
COMSUBPAC PEARL HARBOR HI//N31/N4/N40//
COMSECONDFLT//
COMNAVSURFLANT NORFOLK VA//N31/N4//
COMNAVAIRLANT NORFOLK VA//N31//
(SUPERVISING AUTHORITY)//(RESPONSIBLE SHIPBUILDER)
CTF TWO SIX//
CTF TWO SIX PT ONE//
NUWC DIV NEWPORT RI//2412//
FTSCLANT NORFOLK VA//4242//
COMSUBDEVRON FIVE SILVERDALE WA//N31//
DSU SAN DIEGO CA//00//
NAVUNSEAWARCENDIV NEWPORT RI//02245//
NAVUNSEAWARCENDET WEST PALM BEACH FL//3812//
NAVUNSEAWARCENDET AUTEC ANDROS ISLAND BAHAMAS//05//
NAVSURFWARCEN CARDEROCKDIV BETHESDA MD//1921//
PEOSUBCBTWPNSYS WASHINGTON DC//PMO417//
COMSUBRON (SPECIFY NUMBER)//(STRL UNIT)
(STRL UNIT)//
BT
UNCLAS //N03120//
MSGID/GENADMIN/(TYCOM)//
SUBJ/(SUBS) SUBMARINE SEA TRIAL SUPPORT SERVICES//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS SUPERVISING AUTHORITY/RESPONSIBLE SHIPBUILDER SEA TRIAL SUPPORT REQUEST//
REF/B/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF B IS CNO LETTER CONCERNING SEA TRIALS//
REF/C/DOC/COMFLTFORCOMINST 4790.3//
AMPN/REF C IS JOINT FLEET MAINTENANCE MANUAL//
REF/D/TEL/COMSUBLANT/(DD MM YY)//(CONFIRMING STRL SCHEDULE)
AMPN/REF D IS TELCON BETWEEN (ORIGINATOR ACTIVITY)/(PERSON'S NAME) AND (CALLED ACTIVITY)/(PERSON'S NAME) OR (SUPERVISING AUTHORITY)(SUBSIG II)//
RMKS/1. AS REQUESTED REF A AND IAW REFS B AND C SUBSIG II IS APPROVED AS ESCORT FOR (STRL UNIT) SEA TRIALS OCCURRING (DD-DDMMM). THIS CONFIRMS REF D.
2. FOR (ISIC): PROVIDE GOLD DOLPHIN RIDER ONBOARD SUBSIG II.
3. DIRLAUTH ALCON FOR EVENT SCHEDULES AND SCHEDULE CHANGES.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX N

## SAMPLE TYCOM MESSAGE TO SHIP PROGRAM MANAGER CONCERNING PSA FAST CRUISE (SUBMARINES)

FM (TYCOM)//N43//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(ISIC)//N4//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
USS (SHIP NAME)//
DSU SAN DIEGO CA//N3//(AS APPLICABLE)
COMSUBDEVRON FIVE SILVERDALE WA//N3//(AS APPLICABLE)
BT
UNCLAS //N09094//
MSGID/GENADMIN/(TYCOM)//
SUBJ/(SUBS) FAST CRUISE FOR USS (SHIP NAME AND HULL NO.)//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS ISIC MESSAGE CONCERNING CREW CERTIFICATION//
REF/B/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF B IS SUPERVISING AUTHORITY MESSAGE CONCERNING READINESS FOR FAST CRUISE AND SEA TRIALS//
REF/C/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF C IS NAVSEA MESSAGE CONCERNING AUTHORIZATION FOR SEA TRIALS//
RMKS/1. REFS A, B AND C REPORTED SATISFACTORY COMPLETION OF CREW/MATERIAL CERTIFICATION TO SUPPORT FAST CRUISE AND SEA TRIALS.
2. FOR USS (SHIP NAME AND HULL NO.): COMMENCE FAST CRUISE.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX O

### SAMPLE ISIC CREW CERTIFICATION MESSAGE FOLLOWING PSA (SUBMARINES)

FM (ISIC)//
TO (TYCOM)//N43//
INFO (SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
USS (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(ISIC)//
SUBJ/(SUBS) USS (SHIP NAME) CREW/MATL CERTIFICATION//
REF/A/DOC/COMFLTFORCOMINST 4790.3//
AMPN/REF A IS JOINT FLEET MAINTENANCE MANUAL//
REF/B/DOC/NAVSHIPS (SPECIFY NUMBER)//
AMPN/REF B IS APPLICABLE URO MRC MANUAL)//
REF/C/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF C IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
RMKS/1. CREW CERTIFICATION CONDUCTED IAW REF A SATISFACTORILY COMPLETED.
2. ALL WORK ACCOMPLISHED FOR FORCES AFLOAT WITHIN SUBSAFE CERTIFICATION BOUNDARY COMPLETED AND SATISFACTORILY RETESTED. ALL OTHER CONTROLLED WORK PERFORMED BY SHIP'S FORCE HAS BEEN COMPLETED AND SATISFACTORILY RETESTED AND THE APPROPRIATE WORK PACKAGES CLOSED. CERTIFICATION REQUIREMENTS OF REF C HAVE BEEN SUSTAINED FOR THE REMAINDER OF THE SUBSAFE CERTIFICATION BOUNDARY.
3. MATERIAL/SALVAGE CONDITION CERTIFIED READY FOR SEA UPON COMPLETION OF THE FOLLOWING CORRECTIVE ACTIONS:
A.
B.
4. THERE ARE NO OUTSTANDING RECS. THE FOLLOWING DEPARTURES FROM SPECIFICATION ARE CURRENTLY OUTSTANDING:

| DEPARTURE NO. | TYPE | SYSTEM/COMPONENT | RESTRICTION (IF ANY) |
|---|---|---|---|
| A. | | | |
| B. | | | |

5. ALL URO MRC MANDATORY TESTS/INSPECTIONS SPECIFIED IN REF B HAVE BEEN SUCCESSFULLY ACCOMPLISHED WITHIN THE REQUIRED PERIODICITY.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX P

## SAMPLE TYCOM MESSAGE TO SHIP CONCERNING PSA SEA TRIAL AUTHORIZATION (SUBMARINES)

FM (TYCOM)//N43//
TO USS (SHIP NAME)//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
(PARENT GROUP)//
(PARENT SQUADRON)//
DSU SAN DIEGO CA//N3//
COMSUBDEVRON FIVE SILVERDALE WA//N3//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(TYCOM)//
SUBJ/(SUBS) POST SHAKEDOWN AVAILABILITY SEA TRIAL DEPTH AUTHORIZATION OF USS (SHIP NAME AND HULL NO.)//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS NAVSEA MESSAGE CONCERNING SEA TRIAL DEPTH AUTHORIZATION//
REF/B/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF B IS SUPERVISING AUTHORITY MESSAGE CONCERNING FAST CRUISE COMPLETION//
REF/C/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF C IS NAVSEA LETTER CONCURRING IN SEA TRIAL AGENDA FOR (SHIP NAME)//
REF/D/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF D IS TYCOM LETTER APPROVING SEA TRIAL AGENDA//
REF/E/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF E IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
RMKS/1. REF A CERTIFIED MATERIAL CONDITION OF THOSE PARTS OF USS (SHIP NAME AND HULL NO.) INSTALLED, REPAIRED AND/OR TESTED BY SHIPYARD. THIS MSG CONFIRMS THAT THE CERTIFICATION OF THE REMAINDER OF THE ITEMS WITHIN THE SUBSAFE CERTIFICATION BOUNDARY HAS BEEN SUSTAINED. ACCORDINGLY, THE STATUS OF THE SUBSAFE CERTIFICATION BOUNDARY OF USS (SHIP NAME) IS SATISFACTORY FOR SEA TRIALS TO DESIGN TEST DEPTH SUBJECT TO RESTRICTIONS IN PARA 2 OF REF A.
2. REF B REPORTED COMPLETION OF FAST CRUISE AND READINESS OF SHIP AND CREW TO PROCEED ON SEA TRIALS.
3. USS (SHIP NAME AND HULL NO.) IS AUTHORIZED TO DIVE UNDER DELIBERATE AND CAREFULLY CONTROLLED CONDITIONS TO (SPECIFIED) DEPTH FOR HULL INTEGRITY AND EMBT BLOW SYSTEM TESTS IAW AGENDA FOR UNDERWAY TRIALS CONCURRED IN BY REF C AND APPROVED BY REF D.
4. IAW REF E, THIS DEPTH AUTHORIZATION IS AUTOMATICALLY SUSPENDED UPON RE-ENTRY TO THE MATERIAL CERTIFICATION BOUNDARY OR CASUALTY AFFECTING RECOVERABILITY, SALVAGE, WATERTIGHT INTEGRITY, OR OPERATION OF SHIP'S CONTROL SURFACES.
THE SHIP SHALL NOT OPERATE AT A DEPTH GREATER THAN 200 FT UNTIL RE-ENTRY IS CERTIFIED TO TYCOM AND TYCOM APPROVAL TO OPERATE TO TEST DEPTH IS OBTAINED.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX Q

### SAMPLE SUPERVISING AUTHORITY MESSAGE TO NAVSEA AND TYCOM CONCERNING PSA FAST CRUISE COMPLETION (SUBMARINES)

FM (SUPERVISING AUTHORITY)//
TO (TYCOM)//N43//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(PARENT GROUP)//N4//
(PARENT SQUADRON)//
USS (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ: (SUBS) USS (SHIP NAME AND HULL NO.) FAST CRUISE COMPLETION//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
RMKS/1. IAW REF A, (SUPERVISING AUTHORITY) REPORTS USS (SHIP NAME AND HULL NO.) FAST CRUISE SUCCESSFULLY COMPLETED AT (TIME AND DATE).
2. NO MANDATORY DEFICIENCIES FOR SEA TRIALS HAVE BEEN IDENTIFIED. THERE HAVE BEEN NO RECS OPENED AND NO SUBSAFE DEVIATIONS AND WAIVERS PROCESSED SINCE THE START OF FAST CRUISE.(OR, REPORT ANY MANDATORY DEFICIENCIES DISCOVERED WITH CORRECTIVE ACTION, AND IF RECS AND/OR DEVIATIONS AND WAIVERS WERE PROCESSED SINCE THE START OF FAST CRUISE, REPORT ALL RECS OPENED SINCE THE START OF FAST CRUISE ARE CLOSED AND/OR ALL SUBSAFE DEVIATIONS AND WAIVERS PROCESSED SINCE THE START OF FAST CRUISE ARE RESOLVED.)
3. IAW REF A, THE SUBSAFE MATERIAL CONDITION OF THOSE PARTS OF USS (SHIP NAME AND HULL NO.) INSTALLED, REPAIRED, AND OR TESTED BY THE SHIPYARD IS SATISFACTORY FOR SEA TRIALS.
4. RECOMMEND COMMENCEMENT OF SEA TRIALS AS SCHEDULED. CO USS (SHIP NAME AND HULL NO.) CONCURS.//
BT

**NOTE: LIST ALL RE-ENTRIES TO MATERIAL CERTIFICATION BOUNDARY AND ALL WORK ON SYSTEMS AFFECTING RECOVERABILITY, SALVAGE, WATERTIGHT INTEGRITY, OR OPERATION OF SHIP'S CONTROL SURFACES WITH CORRECTIVE ACTION SINCE RELEASE OF FAST CRUISE MESSAGE.**

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX R

### SAMPLE SHIP MESSAGE TO TYCOM CONCERNING MATERIAL CERTIFICATION UPON COMPLETION OF PSA (SUBMARINES)

FM USS (SHIP NAME)//
TO (TYCOM)//N43//
INFO (PARENT GROUP)//N4//
(PARENT SQUADRON)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SHIP NAME)//
SUBJ: (SUBS) USS (SHIP NAME AND HULL NO.) MATERIAL CERTIFICATION//
REF/A/DOC/COMFLTFORCOMINST 4790.3//
AMPN/REF A IS JOINT FLEET MAINTENANCE MANUAL//
REF/B/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF B IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
RMKS/1. IAW REF A, USS (SHIP NAME AND HULL NO.) CERTIFIES THAT ALL WORK ACCOMPLISHED BY FORCES AFLOAT WITHIN THE SUBSAFE BOUNDARY HAS BEEN SATISFACTORILY COMPLETED AND RETESTED. CERTIFICATION REQUIREMENTS OF REF B HAVE BEEN SUSTAINED FOR THE REMAINDER OF THE SUBSAFE CERTIFICATION BOUNDARY.
2. THERE ARE NO OUTSTANDING RECS. THE FOLLOWING DEPARTURES FROM SPECIFICATION ARE CURRENTLY OUTSTANDING:

| DEPARTURE NO. | TYPE | SYSTEM/COMPONENT | RESTRICTION (IF ANY) |
|---|---|---|---|
| A. | | | |
| B. | | | |
| C. | | | |

3. ALL URO MRC MANDATORY TESTS/INSPECTIONS SPECIFIED IN REF B HAVE BEEN SUCCESSFULLY ACCOMPLISHED WITHIN THE REQUIRED PERIODICITY.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX S

## SAMPLE TYCOM MESSAGE TO SHIP AUTHORIZING UNRESTRICTED OPERATIONS FOLLOWING COMPLETION OF PSA (SUBMARINES)

FM (TYCOM)//N43//
TO USS (SHIP NAME)//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08//
(ISIC)//N4//
(SUPERVISING AUTHORITY)//(APPROPRIATE CODE)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(TYCOM)//
SUBJ: (SUBS) UNRESTRICTED OPERATION OF USS (SHIP NAME AND HULL NO.)//
REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF A IS NAVSEA MESSAGE CONCERNING AUTHORIZATION FOR UNRESTRICTED OPERATIONS AFTER PSA//
REF/B/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF B IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/C/DOC/(TYCOM)NOTE C3120/(DATE OF CURRENT REVISION)//
AMPN/REF C IS PROMULGATION OF AUTHORIZED SUBMARINE TEST AND OPERATING DEPTH//
RMKS/1. REF A CERTIFIED SATISFACTORY MATERIAL CONDITION OF THOSE PARTS OF THE USS (SHIP NAME AND HULL NO.) INSTALLED, REPAIRED AND/OR TESTED BY THE SHIPYARD AND RECOMMENDED UNRESTRICTED OPERATION TO DESIGN TEST DEPTH PROVIDED CERTIFICATION REQUIREMENTS OF REF B HAVE BEEN SUSTAINED FOR REMAINDER OF SUBSAFE CERTIFICATION BOUNDARY.
2. THIS MESSAGE CONFIRMS THAT THE CERTIFICATION OF THE REMAINDER OF ITEMS NOT COVERED BY REF A WITHIN THE SUBSAFE CERTIFICATION BOUNDARY HAS BEEN SUSTAINED. ACCORDINGLY, THE STATUS OF THE SUBSAFE CERTIFICATION BOUNDARY OF USS (SHIP NAME AND HULL NO.) IS SATISFACTORY FOR UNRESTRICTED OPERATION TO DESIGN TEST DEPTH SUBJECT TO RESTRICTION IN PARA 2 OF REF A.
3. USS (SHIP NAME AND HULL NO.) IS AUTHORIZED TO CONDUCT UNRESTRICTED OPERATIONS TO (SPECIFIED) DESIGN TEST DEPTH SUBJECT TO THE FOLLOWING:
A.
4. CONTINUED CERTIFICATION FOR OPERATIONS TO (SPECIFIED) DEPTH IS SUBJECT TO THE MAINTENANCE OF REQUIREMENTS OF REF B. URO MRC PERIODICITIES COMMENCE (EFFECTIVE DATES).
5. THIS MSG REMAINS IN EFFECT UNTIL INCLUDED IN A FUTURE REVISION OF REF C.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX T

## SAMPLE SHIP MESSAGE TO TYCOM CONCERNING MATERIAL CERTIFICATION (SUBMARINES)

FM USS (SHIP NAME)//
TO (TYCOM)//N43//
INFO (PARENT GROUP)//N4//
(PARENT SQUADRON)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SHIP NAME)//
SUBJ/(SUBS) USS (SHIP NAME AND HULL NO.) MATERIAL CERTIFICATION//
REF/A/DOC/COMFLTFORCOMINST 4790.3//
AMPN/REF A IS JOINT FLEET MAINTENANCE MANUAL//
REF/B/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF B IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
RMKS/1. IAW REF A, USS (SHIP NAME AND HULL NO.) CERTIFIES THAT ALL WORK ACCOMPLISHED BY FORCES AFLOAT WITHIN THE SUBSAFE CERTIFICATION BOUNDARY SINCE CERTIFICATION FOR SEA TRIALS HAS BEEN SATISFACTORILY COMPLETED AND RETESTED. CERTIFICATION REQUIREMENTS OF REF B HAVE BEEN SUSTAINED FOR THE REMAINDER OF THE SUBSAFE CERTIFICATION BOUNDARY.
2. THERE ARE NO OUTSTANDING RECS. THE FOLLOWING DEPARTURES FROM SPECIFICATION ARE CURRENTLY OUTSTANDING:

| DEPARTURE NO. | TYPE | SYSTEM/COMPONENT | RESTRICTION (IF ANY) |
|---|---|---|---|
| A. | | | |
| B. | | | |
| C. | | | |

3. ALL URO MRC MANDATORY TESTS/INSPECTIONS SPECIFIED IN REF B HAVE BEEN SUCCESSFULLY ACCOMPLISHED WITHIN THE REQUIRED PERIODICITY.//
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX U

### SAMPLE SUPERVISING AUTHORITY MESSAGE TO NAVSEA CONCERNING MATERIAL CONDITION FOR UNRESTRICTED OPERATION FOLLOWING PSA (SUBMARINES)

FM (SUPERVISING AUTHORITY)//
TO COMNAVSEASYSCOM WASHINGTON DC//(SHIP PROGRAM MANAGER)/08/07Q//
INFO CNO WASHINGTON DC//N77//
(FLEET COMMANDER)//N43//
(TYCOM)//N43//
(PARENT GROUP)//N4//
(PARENT SQUADRON)//
USS (SHIP NAME)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/(SUPERVISING AUTHORITY)//
SUBJ/(SUBS) USS (SHIP NAME AND HULL NO.) MATERIAL CONDITION//
REF/A/DOC/NAVSEA 0924-LP-062-0010//
AMPN/REF A IS SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
REF/B/LTR/(ORIGINATING ACTIVITY) (SERIAL NUMBER)/(DATE)//
AMPN/REF B IS NAVSEA LETTER CONCERNING SUBSAFE CERTIFICATION AUDIT REPORT//
REF/C/MSG/(ORIGINATING ACTIVITY)/(DTG)//
AMPN/REF C IS SUPERVISING AUTHORITY MESSAGE CONCERNING READINESS FOR FAST CRUISE AND SEA TRIALS//
RMKS/1. IAW REF A, THE (SUPERVISING AUTHORITY) CERTIFIES THE SATISFACTORY COMPLETION OF ALL SEA TRIALS, COMPLETION OF CONTROLLED DIVES, THE RESOLUTION OF MANDATORY SEA TRIAL DEFICIENCIES AND THE RESOLUTION OF ALL CAT 1A AUDIT ITEMS OF REF B.
2. REF C REPORTED COMPLETION OR SATISFACTORY RESOLUTION OF ALL CAT 1A AUDIT ITEMS OF REF B.
3. THE STATUS OF INCOMPLETE CAT II AUDIT ITEMS OF REF B IS AS FOLLOWS:
A.
4. THE (SUPERVISING AUTHORITY) CERTIFIES THE MATERIAL CONDITION OF THOSE PARTS OF THE USS (SHIP NAME AND HULL NO.) INSTALLED, REPAIRED AND/OR TESTED BY THE SHIPYARD IS SATISFACTORY FOR UNRESTRICTED OPERATION TO DESIGN TEST DEPTH.//
BT

**NOTE: LIST ALL RE-ENTRIES TO MATERIAL CERTIFICATION BOUNDARY AND ALL WORK ON SYSTEMS AFFECTING RECOVERABILITY, SALVAGE, WATERTIGHT INTEGRITY, OR OPERATION OF SHIP'S CONTROL SURFACES WITH CORRECTIVE ACTION SINCE RELEASE OF FAST CRUISE MESSAGE.**

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX V

## SAMPLE TYCOM MESSAGE TO THE SHIP CONCERNING FBW SCS CERTIFICATION (SUBMARINES)

FROM: COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR HI>//
TO: UNIT <SHIP NAME>//
INFO CNO WASHINGTON DC
COMNAVSEASYSCOM WASHINGTON DC
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
<DIRSSP WASHINGTON DC FOR SSBN/SSGN>
COMSUBGRU <NO.>
COMSUBRON <NO.>
<SUPERVISING AUTHORITY>
BT
UNCLAS // N09094 //
MSG/GENADMIN/COMSUB<LANT/PAC>//
SUBJ/(SUBS) UNRESTRICTED USE OF FLY-BY-WIRE SHIP CONTROL SYSTEM IN SUPPORT OF UNRESTRICTED OPERATIONS OF UNIT <SHIP NAME/HULL NO.>//
REF/A/DOC/NAVSEA T9044-AD-MAN-010//
REF /B/MSG NAVSEA/DTG // FBW SCS INITIAL CERTIFICATION (G.2.9)
REF//C/ SSM VOLUME 7
NARR/REF A IS THE REQUIREMENTS MANUAL FOR SUBMARINE FBW SCS. REF B IS NAVSEA FBW SCS CERTIFICATION MSG FOR <SHIP NAME/HULL NO.>. REF C CONTAINS COMSUB<LANT/PAC> AUTHORIZED SUBMARINE OPERATING AND TEST DEPTHS.//
1. IN ACCORDANCE WITH REFERENCE (A), REFERENCE (B) PROVIDED <INTERIM FOR FIRST SHIP OF CLASS OR AFTER MAJOR SHIP MODIFICATION AFFECTING SHIP HYDRODYNAMIC CHARACTERISTICS> CERTIFICATION OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM FOR UNRESTRICTED USE IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATIONS <OR STATE LIMITS>.
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX W

## SAMPLE SUPERVISING AUTHORITY MESSAGE TO NAVSEA CONCERNING PCU FBW SCS MATERIAL CONDITION READINESS FOR FAST CRUISE AND ALPHA TRIALS (SUBMARINES)

FROM: <SUPERVISING AUTHORITY>//-+
TO: COMNAVSEASYSCOM WASHINGTON DC//
INFO CNO WASHINGTON DC
COMSUB<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
COMSUBGRU <NO.>
COMSUBRON <NO.>
PRECOMUNIT <SHIP NAME>
BT
UNCLAS // N09094 //
MSGID/GENADMIN/<SUPERVISING AUTHORITY>//
SUBJ/(SUBS) PRECOMUNIT <SHIP NAME/HULL NO > FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION READINESS FOR FAST CRUISE AND SEA TRIALS//
REF/A/DOC/NAVSEA T9044-AD-MAN-010 //
REF/B/LTR/NAVSEA/<SER NO./DATE>// (REFERENCE ADDITIONAL AUDIT REPORTS AS REQUIRED)
NARR/REF A IS THE REQUIREMENTS MANUAL FOR SUBMARINE FLY-BY-WIRE SHIP CONTROL SYSTEMS. REF B IS THE NAVSEA FLY-BY-WIRE SHIP CONTROL SYSTEM CERTIFICATION AUDIT REPORT FOR <SHIP NAME/HULL NO.>.//
RMKS/1. IAW REF A, <SUPERVISING AUTHORITY> REPORTS THE COMPLETION OF ALL FLY-BY-WIRE SHIP CONTROL SYSTEM WORK AND TESTING REQUIRED FOR COMMENCEMENT OF FAST CRUISE AND ALPHA SEA TRIALS.
2. IAW REF A, <SUPERVISING AUTHORITY> REPORTS THAT ALL CAT I AUDIT RECOMMENDATIONS OF REF B HAVE BEEN SATISFACTORILY RESOLVED. THERE ARE NO FLY-BY-WIRE SHIP CONTROL SYSTEM DEVIATIONS AND WAIVERS WITH CONDITIONS NOR FLY-BY-WIRE SHIP CONTROL SYSTEM OR RELATED SHIP OPERATING RESTRICTIONS/LIMITS WHICH HAVE NOT BEEN SATISFIED. <or identify operating restrictions/limits and list conditional Deviations and Waivers including Deviation Number, Short Title, and Expected Clearance Date/Key Event[(1)]>.
3. IAW REF A, THE STATUS OF ALL INCOMPLETE CAT 1A AUDIT RECOMMENDATIONS OF REF B IS AS FOLLOWS:
A.
B.
4. <SUPERVISING AUTHORITY> REPORTS READINESS OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM FOR COMMENCEMENT OF FAST CRUISE. OIC<SHIP NAME/HULL NO.> CONCURS.//
5. SUBJECT TO SATISFACTORY COMPLETION OF FAST CRUISE AND RESOLUTION OF MANDATORY DEFICIENCIES, <SUPERVISING AUTHORITY> CONSIDERS <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION READINESS SATISFACTORY FOR COMMENCEMENT OF SEA TRIALS.

[(1)] Subject to Program Manager approval, cumulative lists of conditional Deviations and Waivers which are deemed too lengthy for messages may be communicated in a letter format, with the letter referenced by the applicable message.

BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX X

## SAMPLE SUPERVISING AUTHORITY MESSAGE TO TYCOM AND NAVSEA CONCERNING PCU FAST CRUISE COMPLETION AND READINESS OF FBW SCS MATERIAL CONDITION FOR ALPHA SEA TRIALS (SUBMARINES)

FROM:<SUPERVISING AUTHORITY>//
TO: COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR HI>//
COMNAVSEASYSCOM WASHINGTON DC
INFO CNO WASHINGTON DC
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
<DIRSSP WASHINGTON DC FOR SSBN/SSGN>
COMSUBGRU <NO.>
COMSUBRON <NO.>
PRECOMUNIT <SHIP NAME/NUMBER>
BT
UNCLAS // N09094 //
MSGID/GENADMIN/<SUPERVISING AUTHORITY>//
SUBJ/(SUBS) PRECOMUNIT <SHIP NAME/HULL NO.> FAST CRUISE COMPLETION AND READINESS OF FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION FOR ALPHA SEA TRIALS//
REF/A/DOC/OPNAVINST 9080.3//
NARR/REF A CONTAINS PROCEDURES FOR TESTS AND TRIALS OF NAVAL NUCLEAR POWERED SHIPS.//
RMKS/1. IAW REF A, <SUPERVISING AUTHORITY> REPORTS <SHIP NAME/HULL NO.> FAST CRUISE SUCCESSFULLY COMPLETED AT <TIME, DATE>.
2. NO MANDATORY FLY-BY-WIRE SHIP CONTROL SYSTEM DEFICIENCIES FOR SEA TRIALS HAVE BEEN IDENTIFIED. THERE HAVE BEEN NO FLY-BY-WIRE SHIP CONTROL SYSTEM CWPs/RIPOUTs OPENED AND NO FLY-BY-WIRE SHIP CONTROL SYSTEM DEVIATIONS AND WAIVERS PROCESSED SINCE THE START OF FAST CRUISE. <or, report any mandatory deficiencies discovered with corrective action, and if CWP/RIPOUT and/or Deviations and Waivers were processed since the start of Fast Cruise, report all Fly-By-Wire Ship Control System CWPs/RIPOUTs opened since the start of Fast Cruise are closed and/or all Fly-By-Wire Ship Control System deviations and waivers resolved.>
3. THERE ARE NO FLY-BY-WIRE SHIP CONTROL SYSTEM DEVIATIONS AND WAIVERS WITH CONDITIONS WHICH HAVE NOT BEEN SATISFIED. <or list conditional Deviations and Waivers including Deviation Number, Short Title, and Expected Clearance Date/Key Event.(1)>.
4. FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION IS SATISFACTORY TO SUPPORT COMMENCEMENT OF ALPHA SEA TRIALS AS SCHEDULED. OIC <SHIP NAME\HULL NO.> CONCURS.\\
5. RECOMMENDATION TO COMMENCE ALPHA SEA TRIALS WILL BE ADDRESSED BY SEPCOR.
(1)Subject to Program Manager approval, cumulative lists of conditional Deviations and Waivers which are deemed too lengthy for messages may be communicated in a letter format, with the letter referenced by the applicable message.
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX Y

## SAMPLE SUPERVISING AUTHORITY MESSAGE TO NAVSEA CONCERNING PCU FBW SCS MATERIAL CONDITION READINESS UPON COMPLETION OF ALPHA SEA TRIALS AND READINESS OF THE FBW SCS FOR USE DURING BRAVO AND SUBSEQUENT SEA TRIALS (SUBMARINES)

FROM:<SUPERVISING AUTHORITY>//
TO: COMNAVSEASYSCOM WASHINGTON DC//
INFO CNO WASHINGTON DC
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
<DIRSSP WASHINGTON DC FOR SSBN/SSGN>
COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR>
COMSUBGRU <NO.>
COMSUBRON <NO.>
PRECOMUNIT <SHIP NAME>
BT
UNCLAS // N09094 //
MSGID/GENADMIN/<SUPERVISING AUTHORITY>//
SUBJ/(SUBS) COMPLETION OF <ALPHA(2)> SEA TRIALS OF PRECOMUNIT<SHIP NAME/HULL NO.> AND FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION READINESS FOR<BRAVO(1)> SEA TRIALS//
REF/A/MSG/<SUPERVISING AUTHORITY>/<DTG>// {G.2.1}
REF/B/LTR/NAVSEA/<SER NO./DATE>
REF/C/DOC/NAVSEA 0924-062-0010//
NARR/REF A IS <SUPERVISING AUTHORITY'S> REPORT OF FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION READINESS OF <SHIP NAME/HULL NO.> FOR FAST CRUISE AND ALPHA SEA TRIALS. REF B IS FLY-BY-WIRE SHIP CONTROL SYSTEM CERTIFICATION AUDIT REPORT.// REF C IS THE REQUIREMENTS MANUAL FOR SUBMARINE FLY-BY-WIRE SHIP CONTROL SYSTEMS.//
RMKS/1. <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM HAS SUCCESSFULLY COMPLETED <ALPHA(2)> SEA TRIALS.
2. BY REF A, <SUPERVISING AUTHORITY> REPORTED ALL CAT I AUDIT RECOMMENDATIONS OF REF B SATISFACTORILY RESOLVED. THERE HAVE BEEN NO FLY-BY-WIRE SHIP CONTROL SYSTEM CWPS/RIPOUTS OPENED AND NO FLY-BY-WIRE SHIP CONTROL SYSTEM DEVIATIONS AND WAIVERS PROCESSED SINCE <ALPHA (2)> SEA TRIALS. <or, if FLY-BY-WIRE SHIP CONTROL SYSTEM CWPS/RIPOUTS or FLY-BY-WIRE SHIP CONTROL SYSTEM Deviations and Waivers were processed since the start of <ALPHA (2)> Sea Trials, report ALL FLY-BY-WIRE SHIP CONTROL SYSTEM CWPS/RIPOUTS OPENED SINCE THE START OF <ALPHA (2)> SEA TRIALS ARE CLOSED AND/OR ALL FLY-BY-WIRE SHIP CONTROL SYSTEM DEVIATIONS AND WAIVERS PROCESSED SINCE <ALPHA (2)> SEA TRIALS ARE RESOLVED.>.
3. THERE ARE NO FLY-BY-WIRE SHIP CONTROL SYSTEM DEVIATIONS AND WAIVERS WITH CONDITIONS NOR FLY-BY-WIRE SHIP CONTROL SYSTEM or SHIP RELATED OPERATING RESTRICTIONS/LIMITS WHICH HAVE NOT BEEN SATISFIED. <or identify operating restrictions/limits and list conditional Deviations and Waivers including Deviation Number, Short Title, and Expected Clearance Date/Key Event.(3)>
4. THE STATUS OF REF B INCOMPLETE CAT 1A AUDIT RECOMMENDATIONS IS <SAME AS REPORTED BY REF A OR AS FOLLOWS:>.
5. IAW REF C, <SUPERVISING AUTHORITY> REPORTS THAT THE FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION OF <SHIP NAME/HULL NO.> IS SATISFACTORY FOR USE IN SUPPORT OF <BRAVO (1)> SEA TRIALS. OIC <SHIP NAME/HULL NO.> CONCURS.//
(1)UPCOMING TRIALS WHICH IS SUBJECT OF THIS CERTIFICATION (E.G., BRAVO SEA TRIALS, CHARLIE SEA TRIALS, INSURV TRIALS, ETC.).
(2)PREVIOUS TRIALS.
(3)SUBJECT TO PROGRAM MANAGER APPROVAL, CUMULATIVE LISTS OF CONDITIONAL DEVIATIONS AND WAIVERS WHICH ARE DEEMED TOO LENGTHY FOR MESSAGES MAY BE COMMUNICATED IN A LETTER FORMAT, WITH THE LETTER REFERENCED BY THE APPLICABLE MESSAGE.
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX Z

### SAMPLE SUPERVISING AUTHORITY MESSAGE TO NAVSEA CONCERNING PCU FBW SCS MATERIAL CONDITION INITIAL CERTIFICATION (SUBMARINES)

FROM: <SUPERVISING AUTHORITY>//
TO: COMNAVSEASYSCOM WASHINGTON DC//
INFO CNO WASHINGTON DC
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
<DIRSSP WASHINGTON DC FOR SSBN/SSGN>
COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR HI>
COMSUBGRU <NO.>
COMSUBRON <NO.>
PRECOMUNIT <SHIP NAME>
BT
UNCLAS // N09094 //
MSGID/GENADMIN/<SUPERVISING AUTHORITY>//
SUBJ/(SUBS) UNRESTRICTED USE OF <SHIP NAME/HULL NO.>FLY-BY-WIRE SHIP CONTROL SYSTEM IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATIONS//
REF/A/DOC/NAVSEA T9044-AD-MAN-010//
REF/B/MSG/<SUPERVISING AUTHORITY>/<DTG>//{G.2.1}
REF/C/LTR/NAVSEA/<SER NO./DATE>// (REFERENCE ADDITIONAL AUDIT REPORTS AS REQUIRED)
REF/D/ SHIP SYSTEM MANUAL VOL 7 SHIP CONTROL SYSTEMS
NARR/REF A IS THE REQUIREMENTS MANUAL FOR SUBMARINE FLY-BY-WIRE SHIP CONTROL SYSTEMS. REF B IS <SUPERVISING AUTHORITY> REPORT OF <SHIP NAME/HULL NO.> READINESS OF FLY-BY-WIRE SHIP CONTROL SYSTEM FOR FAST CRUISE AND ALPHA SEA TRIALS. REF C IS THE NAVSEA FLY-BY-WIRE SHIP CONTROL SYSTEMS CERTIFICATION AUDIT REPORT FOR <SHIP NAME/HULL NO.>. REF D IS THE SHIP SYSTEM MANUAL FOR FBW SCS.//
RMKS/1. IAW REF A, <SUPERVISING AUTHORITY> REPORTS THE SATISFACTORY COMPLETION OF ALL FLY-BY-WIRE SHIP CONTROL SYSTEM SEA TRIAL TESTING, THE RESOLUTION OF MANDATORY SEA TRIAL DEFICIENCIES<IF NOT RESOLVED THEN LIST ANY SEA TRIAL TEST EVENTS THAT NEED TO BE DEFERRED>.
2. REF B REPORTED SATISFACTORY RESOLUTION OF ALL FBW SCS CAT I AUDIT RECOMMENDATIONS OF REF C. IAW REF A, <SUPERVISING AUTHORITY> REPORTS THAT ALL CAT IA AUDIT RECOMMENDATIONS OF REF C HAVE BEEN SATISFACTORILY RESOLVED. THERE IS NO DEFERRED FBW SCS WORK AND THERE ARE NO FBW SCS DEVIATIONS AND WAIVERS WITH CONDITIONS NOR ARE THERE ANY FBW SCS OR RELATED SHIP OPERATING RESTRICTIONS/LIMITS WHICH HAVE NOT BEEN SATISFIED. <or identify operating restrictions/limits and list deferred work and/or conditional Deviations and Waivers including Deviation Number, Short Title, and Expected Clearance Date/Key Event[(1)]>.
3. THE STATUS OF INCOMPLETE CAT II AUDIT RECOMMENDATIONS OF REF C IS AS FOLLOWS:
A.
B.
4. IAW REF A, <SUPERVISING AUTHORITY> REPORTS THE MATERIAL CONDITION OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM IS SATISFACTORY FOR UNRESTRICTED USE IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATIONS IN ACCORDANCE WITH THE GUIDANCE IN REF D EXCEPT AS NOTED:<identify any ship or system operating restrictions or limits>
5. RECOMMENDATION FOR SUBMARINE'S UNRESTRICTED OPERATION TO TEST DEPTH WILL BE ADDRESSED BY SEPARATE CORRESPONDENCE.
[(1)]Subject to Program Manager approval, cumulative lists of conditional Deviations and Waivers which are deemed too lengthy for messages may be communicated in a letter format, with the letter referenced by the applicable message.
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX AA

## PRE MAN-UP CHECKLIST FOR TYCOM/ISIC

The TYCOM/ISIC is responsible for the following:

1. Contacting the Supervising Authority and establishing the date of initial man-up.

2. Coordinating with the Supervising Authority to ensure that crew facilities will be available on man-up.

3. Coordinating with the Supervising Authority and BUPERS on manning issues involving slippage or delays in schedule.

4. Upon man-up, coordinating with the PCO the dates for arrival inspection and monitoring watches.

5. Providing the ship with the necessary Fleet/TYCOM directives, instructions, notices, training memorandums, etc.

6. Reporting personnel arriving early onboard.

7. Ensuring personnel arriving early get pay accounts established and entitlements started.

8. Ensuring personnel arriving early have been screened for New Construction and meet all the requirements. Personnel not meeting the New Construction requirements should be brought into compliance, if possible, or made available for further assignment in accordance with the Enlisted Transfer Manual.

9. Ensuring the reporting personnel satisfy the requirements as outlined in the manning directive (i.e., Crew Scheduling and Phasing plans, Manning Letter, Enlisted Distribution and Verification Report, etc.). Areas that are deficient should be identified to BUPERS to correct deficiencies. In the case of submarines, submit a Personnel Deficiency Report.

10. For submarines, ensuring personnel are medically screened for submarine duty.

11. If the Detachment Concept is used, establishing a Point of Contact with FTC and obtain phone numbers for PCU office spaces.

12. Inspecting the PCU's office spaces prior to the arrival of the initial manning detachment. Immediately upon the PCU's arrival, coordinating with the PCO to arrange for the certification of office spaces to receive classified material.

13. Providing the requirements for storage of classified material in office spaces.

14. Assisting the PCU in developing a management system for handling classified material.

(This Page Intentionally Left Blank)

## APPENDIX AB

## BASIC REQUIREMENTS FOR INITIAL MAN-UP PERSONNEL OF THE PCU (DETACHMENT CONCEPT) (CVN, DDG, LHD, LPD, AOE, LSD)

1. The following is a list of actions that should be undertaken by the Detachment within the first two months.

   a. Establish Fiscal Account with FTC Logistics.

   b. Provide accounting data for telephone service to Naval Station Public Works, Communications Department.

   c. Establish Temporary Plain Language Address with the communications facility.

   d. Obtain administrative supplies from SERVMART.

   e. Make Basic Enlisted Quarters arrangements with Naval Station Billeting.

   f. Establish Basic Enlisted Quarters Watch Bill.

   g. Acquire Government Vehicle from Public Works.

   h. Create Ship's Pre-Commissioning Indoctrination Manual.

   i. Designate Drug and Alcohol Program Advisors and obtain school quota from FTC.

   j. Designate Urinalysis Coordinator and establish program.

   k. Designate Key Sub-Custodian.

   l. Designate two Electrical Safety Petty Officers.

   m. Designate Ombudsman.

   n. Create/Start Pre-Commissioning Training schedule (Formal/School of the Ship/Afloat).

   o. Establish program for monitoring security clearance requirements.

   p. Write authorization letters for "By Direction," mail and paycheck pickup authority.

   q. Acquire software programs from the ship's allowance for use on computers.

   r. Set up office spaces and obtain the necessary instructions and publications necessary to function as an Administrative Office.

   s. Establish a Personnel Office to assist/check-in newly reporting personnel.

t. Arrange a meeting with the local Personnel Support Detachment to formulate a memorandum of agreement to include Service Record maintenance, Pay Account maintenance, assignment of disbursing support personnel from the ship, liquidation of travel claims, authorization for travel advances and other personnel related matters.

u. Arrange for maintenance of Medical and Dental records based on local military medicine procedures. The FTC will provide details.

v. Compile a Recall List.

w. Submit the Inaugural Diary to establish the manpower accounts and activate the Unit Identification Code in the Source Data System. This will require the reporting of one Enlisted and one Officer, using a gain Transaction Code with the use of a Diary Message Reporting System message. This should be done in advance of the initial manning date.

x. Coordinate with the FTC to establish the Security Certification of office spaces for retention of classified material.

y. Request of NAVSEA Non-Judicial Punishment (NJP) and Special Court Martial authority for the PCO. If the PCO is ordered in as OIC, NJP authority is limited.

z. Develop a planning schedule to incorporate Department Head training and the overall command planning schedule.

2. The following is a list of actions that must occur to support activity at the Construction Site.

a. Obtain office space for the Prospective Commanding Officer/Prospective Executive Officer, Command Master Chief and other crew personnel.

b. Arrange for installation and access to telephone service. The Supervising Authority will provide details.

c. Obtain phone listing for key Industrial Activity and Supervising Authority personnel.

d. Obtain Master Construction Schedule from the Supervising Authority Project Officer.

e. Make arrangements for the crew to receive badges for access to the industrial area.

f. Make arrangements for the crew to receive all necessary safety equipment (hard hats, safety glasses, safety shoes, etc.).

g. Arrange for the crew at the Construction Site to receive safety briefings.

h. Arrange for crew briefings on necessary Radiological Control procedures.

i. Arrange for the Supervising Authority to take action to add the PCU to the Standard Navy Distribution List.

j. Obtain copies of Supervising Authority instructions related to new construction activities.

k. Obtain a System Testing Schedule and Turnover Schedule. The Supervising Authority will provide assistance.

l. Request authorization for the crew to draw Basic Allowance for Subsistence if government messing is not available at the Construction Site. The BUPERS Manual provides direction.

m. Coordinate with the ISIC the Security Certification of office spaces to be used for the retention of classified material.

(This Page Intentionally Left Blank)

## APPENDIX AC

## BASIC REQUIREMENTS FOR INITIAL MAN-UP PERSONNEL OF THE PCU (CVN, DDG, LHD, LPD, AOE, LSD, SUBMARINES)

The following is a list of actions that should be undertaken upon the arrival of the first members of a PCU:

1. Obtain office space for the Prospective Commanding Officer/Prospective Executive Officer, Command Master Chief, and other crew personnel.

2. Arrange for installation and access to telephone service. The Supervising Authority will provide details.

3. Obtain phone listing for key Industrial Activity and Supervising Authority personnel.

4. Obtain Master Construction Schedule from the Supervising Authority Project Officer.

5. Make arrangements for the crew to receive badges for access to the industrial area.

6. Make arrangements for the crew to receive all necessary safety equipment (hard hats, safety glasses, safety shoes, etc.).

7. Arrange for the crew at the Construction Site to receive safety briefings.

8. Arrange for crew briefings on necessary Radiological Control procedures.

9. Arrange for the Supervising Authority to take action to add the PCU to the Standard Navy Distribution List.

10. Obtain copies of Supervising Authority instructions related to new construction activities.

11. Obtain a System Testing Schedule and Turnover Schedule. The Supervising Authority will provide assistance.

12. Request authorization for the crew to draw Basic Allowance for Subsistence, if government messing is not available at the construction site. The BUPERS Manual provides direction.

13. Request of NAVSEA NJP and Special Court Martial authority for the PCO. If the PCO is ordered in as OIC, NJP authority is limited.

14. Develop a planning schedule to incorporate Department Head training and the overall command planning schedule.

15. Submit the Inaugural Diary to establish the manpower account and activate the Unit Identification Code in the Source Data System. This will require the reporting of one Enlisted and one Officer, using a gain Transaction Code with the use of a Diary Message Reporting System message. This should be done in advance of the initial manning date.

16. Set up office spaces and obtain the necessary instructions and publications necessary to function as an Administrative Office.

17. Establish a Personnel Office to assist/check-in newly reporting personnel.

18. Arrange a meeting with the local Personnel Support Detachment to formulate a memorandum of agreement to include Service Record maintenance, Pay Account maintenance, assignment of disbursing support personnel from the ship, liquidation of travel claims, authorization for travel advances and other personnel related matters.

19. Arrange for maintenance of Medical and Dental records based on local military medicine procedures. The FTC will provide details.

20. Compile a Recall List.

21. Coordinate with the ISIC the Security Certification of office spaces to be used for the retention of classified material.

22. Upon completion of the Security Certification coordinate with the Supervising Authority mailroom for delivery of the ship's mail.

## APPENDIX AD

## GENERIC BASE LINE OF FLEET INTRODUCTION TEAM FUNCTIONS AND RESPONSIBILITIES

1. Perform all tasks normally assigned to the PCO until the PCO has reported to the Construction Site and assumed duties.

2. Provide assistance to the PCO in carrying out duties according to Navy Regulations.

3. Provide continuity in the management and administration of pre-commissioning facilities at the Construction Site.

4. Coordinate the overall pre-commissioning crew training program for both nucleus and balance crews.

5. Schedule and conduct crew training at the Construction Site. Such training shall be structured to support the Force Commander's standard for Crew Certification. Additional training provided will consist of:

   a. Basic Damage Control Training (100, 200 and 300 series).

   b. Ship Familiarization Training.

   c. Enlisted Surface/Aviation Warfare Specialist Qualification/Requalification Training.

6. Provide each ship with standardized tailored Lesson Training Guides (where appropriate) in the areas of:

   a. Engineering.

   b. Mess Specialist.

   c. Supply.

   d. Communications.

   e. Operations.

   f. Weapons.

   g. Deck.

   h. Air.

7. Provide each PCO with standardized administrative, organizational and procedural manuals, bills and directives for the ship class.

8. Monitor the progress of construction, outfitting, test and trials of each ship.

9. Perform the specific functions as assigned by the Force Commander or higher authority.

10. Provide familiarization training if directed.

11. Provide continuity between successive PCUs.

    a. Maintain results of significant trials, inspections, assist visits, design and progress meetings, etc., in order to provide lessons learned and a corporate history to each successive pre-commissioning crew.

    b. Detailed reports of government and contractor material and operational tests and inspections are maintained by the Supervising Authority.

    c. Develop a Plan of Action and Milestones (POAM) for each ship to support the mission objectives to consist of actions and milestones to be accomplished by the FIT and the ship before sailaway.

    d. Tailor the POAM to each specific ship based on the delivery date. The POAM will start approximately one year before delivery and end upon sailaway. (Start date will vary depending on FIT establishment and crew manning).

    e. Maintain copies of the POAMs at the FIT, PCU and Pre-Commissioning Detachment.

    f. Update and perform quarterly reviews of the POAM.

12. Maintain a Standard Products POAM.

    a. Ensure that each ship receives their initial outfit of standard products such as directives, publications, forms, instructions, charts, etc. These products will be ordered by the FIT in accordance with the POAM, maintained at the FIT and given to ship upon delivery.

    b. In addition, locally developed standard administrative products such as the Standard Organization and Regulations Manual, Standard Operating Procedures, instructions, notices, etc., in support of the mission goals, will be tailored to each specific ship by the FIT with Ship's Force assistance.

13. Conduct Familiarization Training.

    a. Training will consist of lectures and ship tours which cover:

        - Ship Capabilities
        - Characteristics and Mission
        - Damage Control
        - Propulsion
        - Electrical
        - Auxiliaries
        - Deck
        - Communications

- Navigation
- Combat Systems

b. Familiarization Training will be performed in a manner that will also encompass Enlisted Surface/Aviation Warfare Specialist qualification/requalification training.

c. Provide each student a detailed and comprehensive Training Guide of each topic, for reference and study purposes.

14. Assist the ship in preparations for LOA to include:

a. Assist in preparations for the ISIC and ETG visits (Pre-industrial, Industrial and Pre-LOA) to include the areas of administration, material, level of knowledge and firefighting.

b. Provide plans (in the form of ship's notices) for the Pre-Industrial and Pre-LOA visits.

c. Assist in EOSS validation (cold and hot checks to include hand over hand verification of piping systems and components) performed by the Ship Program Manager.

d. Provide a standard package of cold and hot checks (schedule and procedures) required to support material checks for LOA. Conduct training in the execution of cold and hot checks.

e. Provide standard engineering administration (EDORM, Standing Orders, Main Space Fire Doctrine, Restricted Maneuvering Doctrine, logs, management programs, etc.).

f. Provide a standard ship engineering training plan which will include Lesson Topic Guides, Lesson Topic Matrix, Evolution Training Matrix, Casualty Control Training Matrix, Watch Team Replacement Plan, Quadrant Training Plan, Month Training Plan and Watchstander Proficiency Logs. Conduct training on implementation and execution of the engineering training plan.

g. Conduct training (lectures, seminars, drills, etc.) to improve the level of knowledge and firefighting capability of the crew in support of LOA. Conduct Damage Control training to combat a Main Space Fire. Provide procedures, drill packages and training for the Engineering Casualty Control Training Team and Damage Control Training Team.

15. Assist the ship in preparations for Crew Certification to include:

a. Provide plans (in the form of ship's notices) for Crew Certification.

b. Provide procedures, drill packages and training (lectures, seminars, drills, etc.) for the Seamanship Training Team and Combat Systems Training Team.

16. Assist with the implementation of PMS to include:

a. Provide training to the ship's 3-M Coordinator concerning ship specific/unique PMS, Waterfront Maintenance Management System Net and/or SNAP.

b. Assist in Phase I and II PMS installation by local RMC.

17. Order forms and publications.

    a. Order in accordance with the ship POAM and turn over to the crew upon delivery of the ship.

    b. Include Initial Outfit List of publications and forms as well as Technical Manuals, SIBs, Naval Warfare Publications, Naval Telecommunication Procedures (NTP), charts, command-specific instructions and notices, etc.

18. Assist the ship in the load out of storerooms and operating spaces to include:

    a. Assist in developing load out plan.

    b. Assist in the coordination between ship, Supervising Authority, contractor and FOSSAC.

    c. Act as technical advisor to the Supply Officer in matters concerning load out.

    d. Provide training to Supply Department personnel in support of load out.

19. Maintain a reference library.

    a. A master reference library will be located in the FIT building and will include general and ship specific directives, forms, publications, instructions, notices, Technical Manuals, PQS, Naval Warfare Publications, NTPs, SIBs, charts, EOSS, PMS, message correspondence, etc.

    b. A satellite reference library will be located within the pre-commissioning building. This library will consist of immediate reference materials, Naval Ships' Technical Manuals, SIBs, Technical Manuals, instructions and notices.

    c. A basic set of unclassified reference material will be maintained at the PCU for the pre-commissioning crews. Classified reference material for the pre-commissioning crews will be maintained at the FIT facilities due to the lack of adequate security at the PCU.

    d. Liaison with the Supervising Authority to obtain technical documents such as contract specifications, drawings, test and inspection results, etc. when required.

    e. Provide access to various electronic bulletin boards throughout the Navy via computer-modem hookup.

20. Provide audio/visual support consisting of projectors (overhead, slide), screen, video cassette recorder (VHS, BETA), and marker boards.

21. Provide situational administrative support as required.

    a. Provide supplemental administrative support for events such as LOA, Crew Certification, Commissioning, etc.

    b. Support may include word processing as well as E-mail, laminating, fax and copier service.

22. Maintain communication guard for PCUs until delivery.

a. Assist PCU Radiomen in processing (receiving and transmitting) standard naval messages up to and including Secret.

b. Locate the GATEGUARD terminals in the classified material storeroom at the FIT.

23. Provide secure stowage for classified material.

a. Store classified material for the FIT and PCU in General Services Administration approved safes located in the FIT's facilities.

b. Restrict access to those personnel authorized by the OIC/PCO.

c. Maintain security through a combination of General Services Administration approved storage containers, controlled access (key and cipher locks) and intrusion detection systems.

24. Coordinate off-site training such as schools for pre-commissioning crew between the Ship, BUPERS and Ship Program Manager.

(This Page Intentionally Left Blank)

## APPENDIX AE

## SAMPLE NAVSEA MESSAGE TO TYCOM CONCERNING PCU FBW SCS MATERIAL CONDITION READINESS FOR ALPHA SEA TRIALS (SUBMARINES)

FROM: COMNAVSEASYSCOM WASHINGTON DC//
TO: COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR HI>//
INFO CNO WASHINGTON DC
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
<DIRSSP WASHINGTON DC FOR SSBN/SSGN>
COMSUBGRU <NO.>
COMSUBRON <NO.>
PRECOMUNIT <SHIP NAME>
<SUPERVISING AUTHORITY>
BT
UNCLAS // N09094 //
MSGID/GENADMIN/COMNAVSEASYSCOM//
SUBJ/(SUBS) PRECOMUNIT <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM (FBW SCS) MATERIAL CONDITION READINESS FOR ALPHA SEA TRIALS.//
REF/A/DOC/NAVSEA T9044-AD-MAN-010//
REF/B/DOC/COMFLTFORCOMINST 4790.3 //
REF/C/MSG/<SUPERVISING AUTHORITY>/<DTG>// {G.2.1}
REF/D/LTR/SUB<LANT/PAC>/<SER NO./DATE>//
REF/E/LTR/NAVSEA/<SER NO./DATE>//
NARR/REF A IS THE REQUIREMENTS MANUAL FOR SUBMARINE FLY-BY-WIRE SHIP CONTROL SYSTEMS. REF B IS JOINT FLEET MAINTENANCE MANUAL. REF C IS <SUPERVISING AUTHORITY> MSG REPORTING FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION READINESS OF <SHIP NAME/HULL NO.> FOR FAST CRUISE AND ALPHA SEA TRIALS. REF D CONCURRED WITH THE SEA TRIALS AGENDA FOR <SHIP NAME/HULL NO.>. REF E APPROVED THE SEA TRIALS AGENDA FOR <SHIP NAME/HULL NO.>.//
RMKS/1. IAW REFS A AND B, AND AS REPORTED BY REF C, THE MATERIAL CONDITION OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM IS CERTIFIED SATISFACTORY FOR USE DURING SEA TRIALS, UPON SATISFACTORY COMPLETION OF FAST CRUISE AND RESOLUTION OF MANDATORY DEFICIENCIES, IN ACCORDANCE WITH THE SEA TRIALS AGENDA CONCURRED IN BY REF D AND APPROVED BY REF E.
2. THERE ARE NO FLY-BY-WIRE SHIP CONTROL SYSTEM DEVIATIONS AND WAIVERS WITH CONDITIONS NOR FLY-BY-WIRE SHIP CONTROL SYSTEM or RELATED SHIP OPERATING RESTRICTIONS/LIMITS WHICH HAVE NOT BEEN SATISFIED. <or identify operating restrictions/limits and list conditional Deviations and Waivers including Deviation Number, Short Title, and Expected Clearance Date/Key Event(1)>.

**APPENDIX AE (continued)**

**SAMPLE NAVSEA MESSAGE TO TYCOM CONCERNING PCU FBW SCS MATERIAL CONDITION READINESS FOR ALPHA SEA TRIALS (SUBMARINES)**

3. THIS CERTIFICATION IS VALID THROUGHOUT TRIALS UNLESS A DEFICIENCY HAS BEEN DISCOVERED. SHIP SPEED IS RESTRICTED TO LESS THAN 20 KNOTS WHEN A FBW SCS FAULT CONDITION RESULTS IN A MAJOR NON-CONFORMANCE AFFECTING CONTROL OF SHIPS PITCH, HEADING, DEPTH OR CONTROL SURFACES. THESE DEFICIENCIES MUST BE REPORTED TO NAVSEA AND THE APPROPRIATE FLEET AND TYPE COMMANDERS. PREVIOUS NAVSEA CERTIFICATION OF THE FBW SCS MATERIAL CONDITION SHALL BE SUSPENDED UNTIL NAVSEA REVIEWS THE REPORT AND CERTIFIES TO THE TYCOM THAT THE FBW SCS MATERIAL CONDITION IS SATISFACTORY FOR SEA TRIALS IN ACCORDANCE WITH THE SEA TRIAL AGENDA APPROVED BY REFERENCE E. THE SHIP'S SPEED IS RESTRICTED TO LESS THAN 20 KNOTS UNTIL SATISFACTORY RESOLUTION OF THE MAJOR NON-CONFORMANCE AND TYCOM APPROVAL TO OPERATE THE FBW SCS TO PREVIOUSLY AUTHORIZED CONDITIONS IS GRANTED, UNLESS SPECIFICALLY ADDRESSED IN THE SEA TRIAL AGENDA.
4. REQUEST NAVSEA PMS< > BE INFO ADDEE ON ALL SEA TRIAL SITREPS.
5. RECOMMENDATION TO AUTHORIZE DIVING WILL BE ADDRESSED BY SEPCOR.
(1)Subject to Program Manager approval, cumulative lists of conditional Deviations and Waivers which are deemed too lengthy for messages may be communicated in a letter format, with the letter referenced by the applicable message.
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

## APPENDIX AF

## SAMPLE NAVSEA MESSAGE TO TYCOM CONCERNING PCU FBW SCS MATERIAL CONDITION INITIAL CERTIFICATION (SUBMARINES)

FROM: COMNAVSEASYSCOM WASHINGTON DC//
TO: COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR HI>
INFO CNO WASHINGTON DC
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
<DIRSSP WASHINGTON DC FOR SSBN/SSGN>
COMSUBGRU <NO.>
COMSUBRON <NO.>
PRECOMUNIT <SHIP NAME>
<SUPERVISING AUTHORITY>
BT
UNCLAS // N09094 //
MSGID/GENADMIN/COMNAVSEASYSCOM//
SUBJ/(SUBS) RECOMMENDATION FOR <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM UNRESTRICTED USE IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATIONS//
REF/A/DOC/NAVSEA T9044-AD-MAN-010//
REF/B/MSG/<SUPERVISING AUTHORITY>/<DTG>// {G.2.6}
REF/C/SSM VOLUME 7 SHIP CONTROL SYSTEM
NARR/REF A IS THE REQUIREMENTS MANUAL FOR SUBMARINE FLY-BY-WIRE SHIP CONTROL SYSTEMS. REF B IS <SUPERVISING AUTHORITY> REPORT OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM MATERIAL CONDITION READINESS FOR UNRESTRICTED USE.
RMKS/1. IAW REF A, REF B REPORTED MATERIAL CONDITION READINESS OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM IS SATISFACTORY AND NO OUTSTANDING LIMITING DISCREPANCIES EXIST.
2. REF B ALSO REPORTED SATISFACTORY COMPLETION OF ALL FLY-BY-WIRE SHIP CONTROL SYSTEM SEA TRIAL TEST REQUIREMENTS AND RESOLUTION OF MANDATORY SEA TRIAL DEFICIENCIES. <IF ANY DISCREPANCIES ARE DEFERRED SO STATE>.//
3. IAW REFS A AND C, NAVSEA CERTIFIES THAT THE MATERIAL CONDITION OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM IS SATISFACTORY AND RECOMMENDS THE SHIP'S FLY-BY-WIRE SHIP CONTROL SYSTEM BE AUTHORIZED UNRESTRICTED USE IN SUPPORT OF SUBMARINE UNRESTRICTED OPERATIONS IN ACCORDANCE WITH SSMS./SUBJECT TO COMPLIANCE WITH REF A <WITH THE FOLLOWING RESTRICTIONS: list any ship or system operating restrictions/limits which may be applicable>.
4. RECOMMENDATION FOR SHIP'S UNRESTRICTED OPERATION TO TEST DEPTH WILL BE ADDRESSED BY SEPARATE CORRESPONDENCE.
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

## APPENDIX AG

### SAMPLE NAVSEA MESSAGE TO TYCOM CONCERNING PCU RECOMMENDATION FOR FLY-BY-WIRE SHIP CONTROL SYSTEM CERTIFICATION

FROM: COMNAVSEASYSCOM WASHINGTON DC//
TO: COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR HI>
INFO CNO WASHINGTON DC
COM<LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>
<DIRSSP WASHINGTON DC FOR SSBN/SSGN>
COMSUBGRU <NO.>
COMSUBRON <NO.>
PRECOMUNIT <SHIP NAME>
<SUPERVISING AUTHORITY>
BT
UNCLAS // N09094 //
MSGID/GENADMIN/COMNAVSEASYSCOM//
SUBJ/(SUBS) RECOMMENDATION FOR FLY-BE-WIRE SHIP CONTROL SYSTEM UNRESTRICTED USE IN SUPPORT OF UNRESTRICTED OPERATIONS FOR <SHIP NAME/HULL NO.>//
REF/A/DOC/NAVSEA T9044-AD-MAN-010//
REF/B/MSG/<SUPERVISING AUTHORITY>/<DTG>// {G.2.8}
REF/C/SSM VOLUME 7 SHIP CONTROL SYSTEM
NARR/REF A IS THE REQUIREMENTS MANUAL FOR SUBMARINE FLY-BY-WIRE SHIP CONTROL SYSTEMS. REF B IS <SUPERVISING AUTHORITY> REPORT OF <SHIP NAME/HULL NO> MATERIAL CONDITION READINESS FOR THE FLY-BY-WIRE SHIP CONTROL SYSTEM
RMKS/1. UPON COMPLETION OF HYDRODYNAMIC TRIALS <FOR FIRST SHIP OF CLASS>. IAW REF A, REF B REPORTED THE MATERIAL CONDITION READINESS OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM IS SATISFACTORY AND NO OUTSTANDING LIMITING DISCREPANCIES EXIST.
IF THERE ARE SO STATE.
2. REF B ALSO REPORTED SATISFACTORY COMPLETION OF ALL FLY-BY-WIRE SHIP CONTROL SYSTEM SEA TRIAL TEST REQUIREMENTS AND RESOLUTION OF MANDATORY SEA TRIAL DEFICIENCIES.
<IF ANY DISCREPANCIES ARE DEFERRED SO STATE>
3. IAW REFS A AND C, NAVSEA CERTIFIES THAT THE MATERIAL CONDITION OF <SHIP NAME/HULL NO.> FLY-BY-WIRE SHIP CONTROL SYSTEM IS SATISFACTORY AND RECOMMENDS UNRESTRICTED USE OF THE SYSTEM IN SUPPORT OF THE SHIP'S UNRESTRICTED OPERATIONS IN ACCORDANCE WITH SSMS./SUBJECT TO COMPLIANCE WITH REF A <WITH THE FOLLOWING RESTRICTIONS: list any restrictions which may be applicable.>.
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAD IS UTILIZED.**

(This Page Intentionally Left Blank)

# VOLUME I

## CHAPTER 3

## PRE DELIVERY

REFERENCES.

(a) NAVSEA 0900-LP-095-4010 - Ship Test and Evaluation Planning Guide
(b) NAVSEA S9040-AA-GTP-010 - Shipboard Systems Certification Requirements For Surface Ship Industrial Periods (Non-Nuclear)
(c) OPNAVINST 9080.3 - Procedures for Tests and Trials of Navy Nuclear Powered Ships Under Construction, Modernization, Conversion, Refueling and Overhaul
(d) OPNAVINST 4700.8 - Trials, Acceptance, Commissioning, Fitting Out, Shakedown and Post Shakedown Availability of U.S. Naval Ships Undergoing Construction or Conversion
(e) COMSUBLANT/COMSUBPACINST 3540.10 - Periodic Monitoring of Submarines and Support Facilities
(f) COMNAVAIRLANT/COMNAVAIRPACINST 3500.20 - Aircraft Carrier Training and Readiness Manual
(g) COMNAVSURFLANT/COMNAVSURFPACINST 3502.2 - Surface Force Training Manual
(h) COMSUBLANT/COMSUBPACINST C3500.1 - Submarine Force Training Manual
(i) COMNAVAIRLANTINST 9080.2 - Conduct of Trials and Inspections Incident to Construction, Overhauls or Availabilities of Nuclear Powered Aircraft Carriers (CVN)
(j) OPNAVINST 3120.28 - Certification of the Aviation Capability of Naval Ships Operating Aircraft
(k) COMPACFLTINST 9830.1 - Certification of Aviation Facilities in Naval Ships Operating Aircraft
(l) COMLANTFLTINST 3500.18 - Certification and Readiness of Aviation Facilities in Naval Ships Operating Aircraft
(m) NAVAIRINST 3120.1 - Lead Systems Command Procedures and Responsibilities for Certification of Aviation Facilities and Equipment in Naval Ships Operating Aircraft
(n) COMNAVSURFPACINST 3501.4 - Aviation Readiness Evaluation (ARE) and Certification of Aviation Facilities Onboard COMNAVSURFPAC Ships
(o) NAVAIRINST 13800.11 - Procedures and Responsibilities for Certification and Verification of the Precision Approach and Landing System
(p) NAVSEAINST 4734.1 - Metrology and Calibration (METCAL) Program
(q) NAVSEA ST700-AM-PRO-010 - Test and Monitoring Systems (TAMS) Program Operations and Procedures
(r) NAVSEA ST700-AM-GYD-010 - Metrology and Calibration (METCAL) Laboratory Requirements and Certification Guide
(s) OPNAVINST C5510.93 - Navy Implementation of National Policy on Control of Compromising Emanations
(t) MIL-STD-1680 - Installation Criteria for Shipboard Secure Electrical Information Processing Systems
(u) OPNAVINST 9640.1 - Shipboard Habitability Program
(v) OPNAVINST 3120.32 - Standard Organization and Regulations of the U.S. Navy
(w) OPNAVINST C8950.2 - Magnetic Silencing
(x) NAVSEA S9086-QN-STM-010 - NSTM Chapter 475 (Magnetic Silencing)
(y) COMNAVSURFORINST 3540.1 - Engineering Operations Assessment, Training and Certification for Conventionally Powered Surface Ships
(z) COMNAVSURFORINST 3540.2 - Surface Force Engineering Readiness Process
(aa) NAVSEA S9086-T4-STM-010 - NSTM Chapter 589 (Cranes)

(ab) NAVSEAINST 4790.8/OPNAVINST 4790.4 - Ship's Maintenance and Material Management (3-M) Manual
(ac) NAVSEA 0924-LP-062-0010 - Submarine Safety (SUBSAFE) Requirements Manual
(ad) NAVSEA S9073-AW-SNC-010 - Ship Acoustical Surveys for Submarines
(ae) NAVSEA 0989-028-5000 - Manual for Control of Testing and Plant Conditions (Nuclear)
(af) NAVSEA 0905-LP-485-6010 - Manual for Control of Testing and Ship Conditions (Non-Nuclear)

LISTING OF APPENDICES.

A Areas to be Evaluated During Arrival Assists
B Areas to be Evaluated During Monitoring Inspections
C Sample Pre-Reactor Safeguard Examination Notice
D In-Service Compartment Surveillance Guide
E Sample Pre-Commissioning Habitability Inspection Checklist for New Construction Ships

3.1 PURPOSE. This chapter addresses the major evolutions confronting the crew from initial man-up through Dock Trials, Fast Cruise and the commencement of Sea Trials.

3.2 SHIPBUILDER'S TEST PROGRAM. Throughout the building phase, the Shipbuilder is responsible for the testing/certification of installed equipment and systems. Reference (a) establishes the Test and Evaluation policy for all phases of a ship's life cycle. This guide contains information concerning the documentation and procedural requirements for a ship's Acquisition, Test and Evaluation Program. Reference (a), in conjunction with the Ship Program Manager's prepared System Acquisition, Test and Evaluation Handbooks, provides familiarization and an understanding of the total Ship Test Program.

3.3 INSPECTIONS/CERTIFICATIONS/ASSISTS. There are numerous inspections/certifications associated with new construction. Reference (b), which can be obtained from the Supervising Authority, identifies all the certification requirements which have been approved for accomplishment during surface ship industrial periods. The following paragraphs deal with generic inspections or platform unique certifications.

3.3.1 Arrival Assist.

a. Purpose. To determine that adequate plans have been developed and implemented to support the requirements of Ship's Force training, administration and testing during new construction and to evaluate the ship's ability to conduct various evolutions.

b. Conduct. The arrival assist visit may be conducted as a single visit or as a series of visits. Appendix A of this chapter provides sample areas to be reviewed during the arrival assist visit.

c. Scheduling. The arrival assist should be scheduled for accomplishment within a two month period following the arrival of the first crew increment.

d. Reports. The Immediate Superior in Command (ISIC) shall submit a message report to the Type Commander (TYCOM) upon completion of the arrival assist indicating that the ship has made satisfactory preparations. In the event that preparations are evaluated unsatisfactory, additional training should be conducted as recommended by the ISIC. When the ISIC considers the ship finally prepared, the TYCOM shall be informed.

3.3.2 Periodic Monitoring/Inspections/Visits.

a. Purpose.

(1) To provide ships in new construction with training and administrative assistance as required by references (c) and (d). The focus will be to improve Ship's Force involvement with the construction process, maintenance and training tasks. Visits of this nature are defined as Tech Assists.

(2) To evaluate the effectiveness of the ship's administration and training policies. Inspections of this nature are defined as Work-ups and normally require the addition of at least two officers to the inspection team.

(3) To conduct spot checks to monitor progress in specific material, administrative and training areas. Visits of this nature are defined as Monitoring Visits.

b. Conduct. The extent, type, and frequency of periodic monitoring inspections and visits should be determined by the ISIC. Submarine monitoring inspections may be combined with those required by reference (e). The initial inspection should be broad in scope in order to apprise the ISIC of the adequacy of the ship's performance and progress.

c. Scheduling. The initial inspection should be conducted within a 45 day time period after the arrival inspection. The initial visit will indicate the frequency and scope of subsequent Tech Assists and Monitoring Visits. Some inspections should be conducted on a unannounced basis. In general, any required Work-ups should be scheduled in advance of Key Events. All inspections should be scheduled to minimize interference with industrial activity and Ship's Force work.

d. Reports. Formal reports are not required. However, the ISIC should advise the TYCOM of situations where the completion of Key Events is in jeopardy due to a lack of progress in any of the subject areas identified in Appendix B of this chapter.

e. Inspection Areas. Initial inspections normally examine the effectiveness of Ship's Force follow-up actions as a result of the arrival assist. Subsequent inspections and visits should review the areas designated in Appendix B of this chapter as appropriate.

3.3.3 Pre-Reactor Safeguard Examination (Nuclear Powered Ships only).

a. Purpose. To evaluate the readiness of the Engineering/Reactor Department to undergo an RSE by representatives of Naval Sea Systems Command Nuclear Propulsion Directorate (NAVSEA 08). Appendix C of this chapter provides a sample Pre-RSE Notice which should be tailored to fit your specific platform.

b. Conduct. The Pre-RSE performed by the ISIC with TYCOM assistance is not intended to duplicate the inspections for which readiness is being evaluated. It is prudent, however, to use an inspection plan similar to that employed by NAVSEA 08. Normally the crew's readiness can be assessed within two days using such a plan. The Supervising Authority will arrange for minimum industrial activity work interference during this inspection.

c. Scheduling. The Pre-RSE should normally be scheduled by the ISIC approximately six to eight weeks prior to criticality. The TYCOM should be advised approximately two months prior to the tentative date and confirmed dates should be established approximately one month prior to the inspection.

d. Composition of the Inspection Team. The Pre-RSE Inspection Team should consist of:

(1) A nuclear trained member of the ISIC Staff, usually the Deputy Commander for Readiness or Training.

(2) A qualified nuclear engineer with experience in the billet.

(3) A nuclear trained officer from the TYCOM Staff. Arrangements for the participation of TYCOM Staff members should be initiated by the ISIC at least one month prior to the anticipated inspection date.

(4) The Prospective Commanding Officer (PCO) of the next local ship in a new construction status.

(5) The TYCOM industrial activity representative.

e. Reports. The Senior Inspector should provide the ship with an informal report of the findings with a copy to the ISIC and TYCOM.

f. Inspection Areas. The Pre-RSE should, as a minimum, encompass the following:

(1) An administrative review.

(2) Observation of basic drills and evolutions not requiring reactor operation or special conditions.

(3) Personnel interviews and written tests.

(4) Material inspection.

3.3.4 Crew Certification. Crew certification is required for new construction ships. Depending upon the platform and TYCOM policy, crew certification will be accomplished in two, three or four phases.

a. Purpose. Initial phases determine the state of readiness and training of Ship's Force, particularly in the areas of watchstander qualifications, damage control readiness, status of operational and emergency bills, onboard supply of essential technical manuals and general operational knowledge. Later phases are structured to certify that the state of crew training is satisfactory for at-sea operations.

b. Scope. Certifications for submarines and surface ships will be conducted using the guidance of the applicable TYCOM training manual, references (f), (g), and (h). Reference (i) provides additional direction for aircraft carriers.

3.3.5 Sonar Certification (DDG/MHC/SSN only). Sonar certification for surface ships is accomplished in accordance with reference (b). Submarine sonar certification is accomplished in accordance with reference (h), during a designated Sea Trial just prior to the Combined Trial. Sonar certification is a prerequisite for Antisubmarine Warfare certification on surface ships and the Weapons/Tactical Readiness Evaluation on submarines.

3.3.6 Aviation Facility Certification (Air Capable Ships only). Reference (j) requires that all aviation facilities aboard naval ships which operate aircraft be formally inspected and certified adequate and safe for flight operations. It further directs, as implemented by references (k) and (l), that Commander, Pacific Fleet (COMPACFLT) and Commander, Atlantic Fleet (COMLANTFLT) shall establish responsibilities and procedures for mandatory certification of all ships with aviation facilities. Reference (j) also directs the Chief of Naval Operations (CNO) to establish responsibilities and procedures for mandatory certification of all ships' aviation facilities, provide for certification inspection teams and issue approved standards for certification. Naval Air Systems Command (NAVAIR) has overall responsibility for certification of aviation facilities and equipment in Naval ships. Aviation facility and equipment certification is a procedure which verifies and documents that the aviation facilities and equipment aboard ships are properly installed, operational, and adequate for the safe conduct of aircraft operations. Details for certifications can be found in reference (m), and in TYCOM specific instructions such as reference (n).

a. Management Structure.

(1) The Ship Program Manager is responsible for budgeting for the certification of ships involved in construction and modernization programs.

(2) Naval Air Warfare Center (NAWC) administers the aviation facilities and equipment certification programs and will establish test programs and procedures for each aviation facility and equipment component.

b. Certification Procedures.

(1) Requests. Submit requests for certification directly to NAWC. The ship's TYCOM will be advised of all requests for equipment and facility certification. Individual ships desiring certification inspections should submit requests via their TYCOM to ensure optimum scheduling of the certification team. Automatic Carrier Landing System certification requests will be submitted per reference (o).

(2) Inspection and Testing. The ship's aviation facilities and equipment will be inspected and tested by a team coordinated by a NAWC representative. Upon completion, the NAWC team coordinator will, (via message to NAWC, the TYCOM, and other appropriate commands) make a recommendation to either grant, rescind, or withhold certification. This recommendation is to be predicated upon all aviation facility systems or equipment being properly installed, configured, operational, and maintained as prescribed by applicable technical manuals or directives. The message will also specify the ship's current certification status, including deficiencies that preclude full certification for the operational capabilities specified by the CNO.

(3) Certification. NAVAIR or NAWC grants or rescinds certification via message after review of the recommendation from the NAWC team coordinator and any other information that may be available. The certification message will be addressed to the TYCOM and other appropriate commands. It will specify the ship's present aviation status, including any corrections that must be accomplished to achieve full certification for the operational capabilities specified by the CNO. Certifications granted will remain in effect until such time that major equipment modifications or alterations are accomplished or until the next overhaul (not to exceed two years on Air Capable Ships and Amphibious Assault Ships unless rescinded by NAVAIR or NAWC.

c. Technical Publications. A listing of technical publications required for Air Certification can be obtained from the TYCOM. References (b) and (m) list specific certifications required for aviation platforms.

3.3.7 Salvage Inspection (Submarines only).

a. Purpose. To determine the readiness of submarine rescue and salvage equipment.

b. Conduct. Submarine Salvage Inspections will be conducted in accordance with the direction of Volume IV, Chapter 18 of this manual.

3.3.8 Field Calibration Activity/Aircraft Intermediate Maintenance Department Calibration Laboratory Certification (AOE/CVN/LSD/LHD/SSN only).

a. Purpose. To verify the NAVSEA/NAVAIR Designated Command has in place the necessary documentation, facilities, equipment and trained personnel to support calibrations of installed instrumentation as specified in references (p) and (q).

b. Conduct. Initial certification is conducted by the NAVSEA/NAVAIR Metrology and Calibration (METCAL) Technical Representatives (MTR) in accordance with the requirements of reference (r). Follow-on recertifications may be conducted by the TYCOM or by the NAVSEA/NAVAIR MTR if funded by the TYCOM. The NAVSEA MTRs are Regional Maintenance Centers (RMC).

c. Scheduling. Initial certification should be accomplished prior to or concurrent with delivery. Coordination between the MTR, Ship's Program Manager, Ship's Calibration Coordinator and Naval Weapons Station, Seal Beach, CA is required to insure all participants can support the certification date and that all required Test, Measurement and Diagnostic Equipment is available. Recertification for Submarine Field Calibration Activities is every 24 months.

d. Reports. Reports will be per the requirements of reference (r) and submitted by letter to the applicable TYCOM. A copy will be provided to the Commanding Officer (CO) and the Ship's Calibration Coordinator.

e. Additional information concerning calibration can be found in Volume VI, Chapter 9 of this manual.

3.3.9 National Policy on the Control of Compromising Emanations Inspection.

a. Reference (s) promulgates the Navy's implementation of the National Policy on the Control of Compromising Emanations (TEMPEST). Reference (t) provides installation criteria for shipboard secure electrical information processing systems.

b. All ships are considered to be operating under an "acceptable risk" category until such time as they have been certified to meet National Policy. Two types of inspections are conducted to certify ships:

(1) Instrumented TEMPEST Survey. The Instrumented TEMPEST Survey is a comprehensive inspection which will only be done on selected ships to certify the ship class.

(2) Visual TEMPEST Inspection (VTI). The VTI is a less comprehensive inspection to certify compliance with class and CNO standards. VTIs can be conducted by RMCs, industrial activities and Navy Command, Control, and Ocean Surveillance Center Naval In-service Engineering.

c. A VTI will be accomplished on all new construction ships. This inspection will be scheduled upon the completion of the installation of all Radio Room/secure electrical information processing equipment. In addition, a TEMPEST file needs to be established to include all actions pertaining to installations, modifications or alterations to secure electrical information processing equipment or centers. The specific information to be retained is identified in reference (s).

3.3.10 Diesel Inspection.

a. Purpose. To validate/certify engine alignment, foundation integrity, engine frame integrity, shimming and stressing requirements, hold down bolts, blower operation and engine performance.

b. Conduct. Diesel inspections shall be conducted in accordance with Volume IV, Chapter 4 of this manual.

3.3.11 Habitability Inspection. Navy ships are built to meet habitability standards for berthing areas, messing areas, water closets, laundry and barber facilities as set forth in reference (u). Prior to certifying 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 shall be reported to the TYCOM by message (see Volume I, Chapter 2, Appendix $A_4$ of this manual for sample message).

a. The Habitability Inspection for submarines is conducted two to four weeks prior to certifying the ship's readiness for In-Service, two to four months prior to this certification for Nuclear Powered Aircraft Carriers and just prior to delivery and crew move aboard for all others.

b. Compartment Surveillance Guide. Appendix D of this chapter has been included to serve as a guide when preparing for the Habitability Inspection and In-Service. Appendix E of this chapter is a sample checklist which can be tailored to any platform.

3.3.12 Requirements for In-Service. Assigned Ship's Force constitutes the only group of personnel authorized to operate naval nuclear powered ships during dockside testing and Sea Trials. Because of this requirement, references (c) and (d) specify that nuclear powered ships in construction are assigned an active status of In-Service prior to commencement of the first Sea Trial (two to four weeks for submarines, two to four months for Nuclear Powered Aircraft Carriers) and retains that status until delivery of the ship. To support this event the contractor is required to make the ship available to the Navy for a period of two days for a Habitability Inspection approximately one week prior to Dock Trials. At In-Service, the responsibility for, and custody of, fissionable materials is transferred from the Supervising Authority to the Officer In Charge (OIC) of the ship. The PCO becomes the OIC of the ship and continues in this capacity until Commissioning at which time the OIC becomes the CO.

a. Responsibilities for Safety of the Ship. Placing the ship In-Service has an impact upon the established responsibilities for safety of the ship.

(1) Prior to In-Service, or Delivery for Surface Ships, the industrial activity's responsibilities for the safety of the ship are all inclusive. The Supervising Authority is responsible for monitoring the industrial activity's safety and fire protection program.

(2) At In-Service the PCO assumes the duties of OIC and the responsibility for the safety of the ship. Reference (v) states that the OIC of a ship In-Service has the same responsibilities for the safety of the ship as a CO of a commissioned ship.

b. Division of Responsibility. In order to establish clear lines of responsibility at In-Service and to eliminate unnecessary duplication of effort, the following shall apply:

(1) Ship's Force. At In-Service, Ship's Force must have operational control of all systems in the ship and will stand all shipboard watches, making all security patrols of the ship, the moorings, and the immediate adjacent pier.

(2) Industrial Activity. The industrial activity continues to perform all contract requirements until delivery. The industrial activity will support Ship's Force in the performance of those requirements assumed by Ship's Force as required.

(3) Supervising Authority. During preparations for In-Service, conduct liaison between Ship's Force and the industrial activity to ensure that the above division of responsibility is understood and agreed to. Verify that a schedule of compartment/space and system turnover is prepared, mutually agreed to, and that a means to identify deficiencies in systems and spaces turned over to Ship's Force is executed.

3.3.13 Degaussing/Deperming. Reference (w) establishes the provision for checking, operating and maintaining degaussing systems. Reference (x) contains basic principles and background information concerning degaussing.

a. Deperming, a method of neutralizing the magnetic field of a ship's hull to minimize permanent magnetism, is required for all new construction ships.

b. A listing of degaussing/deperming facilities currently available is contained in the Degaussing Folder (NAVSEA Form 8950/1) which is issued to individual ships.

c. Degaussing/deperming requirements shall be accomplished in accordance with Volume VI, Chapter 12 of this manual.

3.3.14 Light-Off Assessment (Non-Nuclear Powered Ships only).

a. Light-Off Assessments (LOA) for 1200 psi, 600 psi, Main Propulsion diesel and gas turbine ships will be conducted before propulsion plant operations at an appropriate time before completion of the fitting out availability. The ISIC, with the assistance of Afloat Training Group Atlantic/Pacific, will determine if ship's training procedures and status support safe plant operations, if management programs are effective, if the propulsion plant is ready for light-off and Ship's Force ability to combat a main space fire.

b. References (y) and (z) address propulsion plant LOAs administered by the ISIC, with the assistance of Afloat Training Group Atlantic/Pacific, and recommend that Ship's Force is to have a minimum of two weeks after completion of industrial activity work in the engineering spaces prior to the LOA. Experience has shown this two week period is crucial, not only to successful completion of the LOA but to the operation of the ship subsequent to construction. If it appears the two week interval is in jeopardy, the ship's OIC should discuss ways to speed up the industrial activity work with the Ship Superintendent or this subject should be addressed at Supervising Authority progress conferences.

c. Completion of industrial activity work should be interpreted as meaning that all known work and testing authorized for accomplishment by other than Ship's Force, and which is necessary to support LOA, is complete, including the removal of associated staging and equipment, reinstallation of access doors and hatches, cleanup and painting. Fuel, lube oil, and feedwater should be on board. Partial or temporary installations do not meet completion criteria except as necessary to support the LOA itself or, in the case of lagging pads, as necessary to allow readjustment upon light-off to hot settings of regulators, reducers, and relief valves. The systems and spaces involved in LOA vary from ship to ship, but normally include all systems and spaces needed to support the plant(s) being inspected. This would include main and auxiliary machinery spaces, switchboards, diesels, shaft alleys, uptakes, repair lockers, oil laboratories and calibration laboratories for Automatic Boiler Control systems, etc. Confirm spaces subject to inspection with the Propulsion Examining Board.

d. Emergent work items or additional discrepancies requiring industrial activity work that become apparent during the pre-LOA period need to be accommodated. Normally these requirements can be worked during night shifts or inclusive weekends. However, any industrial activity work during this period will be permitted only with the consent of the Supervising Authority and the OIC.

e. This Key Event is largely an exercise in attention to detail and coordination at and between all three levels of maintenance activity (Ship's Force, the Shipbuilder and the Supervising Authority). LOA preparations should begin months before the availability.

f. First-hand inspections of main and auxiliary machinery spaces are most effective when industrial activity personnel are not on board (weekends and holidays). During these periods, joint inspections by the Engineer Officer with Leading Petty Officers are recommended for every main space. Similar inspections of the auxiliary spaces should be conducted by either the CO or the Executive Officer, along with the Leading Petty Officers of those spaces. Discrepancy lists convert readily to work lists. Night repair teams (primarily composed of duty section personnel) can work discrepancies when industrial activity workers are not in the way.

g. The Plan of Action and Milestones for a successful LOA must be written in detail, at the minor equipment/minor task level, and the more detailed, the better. It is a dynamic document and requires updating and revision daily as the LOA date approaches.

3.3.15 Shipboard Crane Certification Program (CVN/MHC/LHD/LPD/LSD only). The Shipboard Crane Certification Program established by reference (aa) is intended to improve the reliability and safety of all shipboard cranes and is applicable to all cranes mounted on board. Initial crane certification should be accomplished per reference (aa).

3.4 MAINTENANCE AND MATERIAL MANAGEMENT PROGRAM.

3.4.1 Planned Maintenance System.

a. The installation of the Planned Maintenance System (PMS) on new construction ships should be scheduled to provide maintenance documentation to support the Operational Control Transfer (OCT) of systems/equipments from the shipbuilder to Ship's Force. This early loadout of PMS allows Ship's Force personnel to become familiar with the maintenance procedures and facilitates the identification of problems with the Maintenance Requirement Cards (MRC) prior to the ship being placed in operation. Local RMC coordinates the scheduling of PMS installations with the ship's Maintenance and Material Management (3-M) Coordinator. In addition, local RMC is responsible for:

(1) Generating a preliminary List of Effective Pages (LOEP) for Phase I validation.

(2) Conducting Phase I of the PMS installation.

(3) Generating a final LOEP based on Phase I and 3-M Coordinator Feedback.

(4) Notifying local RMC of the required PMS documentation (LOEP requirements) and the date the documentation is required to support Phase II PMS installation.

(5) Compile Phase II PMS package and forward to ship.

(6) Conduct Phase II PMS installation.

(7) Effect additional LOEP corrections as a result of Phase II.

(8) Outbrief with ship's PCO/OIC concerning status of ship's 3-M program.

b. PMS installation for nuclear powered ships will be conducted approximately six months prior to initial reactor plant criticality. The installation for non-nuclear ships will be conducted at least three months prior to delivery. Installation of PMS is accomplished in two phases.

(1) Phase I. Phase I results in the establishment of a ship's LOEP. Local RMC, utilizing either the LOEP from the previous ship of the class or configuration information provided by Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) Activity (Submarines only), Supervisor of Shipbuilding Newport News (SUPSHIP NN), Code 1800, (Nuclear Powered Aircraft Carriers only) or applicable TYCOM (other Surface Ships only),-generates a preliminary LOEP for Ship's Force review. This preliminary LOEP and copies of the listed Maintenance Index Pages (MIP) are delivered to the new construction unit for a review by the ship's 3-M Coordinator, Work Center Supervisors and maintenance personnel. Ship's Force personnel review the documentation, verify MIP to Work Center assignments and approve the preliminary LOEP. Phase I occurs approximately two months prior to Phase II.

(2) Phase II. Phase II is the actual load out of PMS documentation, final verification of the LOEP, generation of preliminary schedules for local RMC review and a Ship's Force validation of provided documentation. Depending upon the ship class, quantity of documentation, and/or Ship's Force preparation, Phase II can last from two to four days. Additionally, maintenance support organizations such as Naval Surface Warfare Center, Carderock Division (NSWCCD), SUBMEPP or Submarine Monitoring, Maintenance and Support Program Office may be participants.

c. The preparation of preliminary Cycle, Quarterly, or Weekly schedules to support PMS load out prior to the preparation of First Quarter after Overhaul schedules is recommended. As a minimum, the development of a cycle schedule for each work center should be accomplished prior to Phase II PMS installation. As systems/equipments are turned over, Ship's Force maintenance should be scheduled to support. This preliminary quarterly schedule (schedule "A") is utilized to track maintenance prior to the official First Quarter after Overhaul start date. Additional preliminary quarterly schedules identified as "B", "C", etc. may be developed as required.

d. The "official" PMS start date depends upon several factors: OCT of equipment, available man power, availability of supporting documentation and the availability of tools, parts, test equipment, and material. The start date is also an arbitrary date arrived at by the ship's 3-M Manager and 3-M Coordinator. A start date should be selected that causes as little disruption and preparation of schedules as possible. Utilization of preliminary schedules as discussed in paragraph 3.4.1.c of this chapter will allow for the flexibility to start PMS "officially" at the beginning of a quarter. However, should this approach not support your situation, the starting of PMS should be indicated on your quarterly schedule with a yellow vertical line, top to bottom, indicating your start date.

e. Inactive Equipment Maintenance (IEM).

(1) IEM, per the direction of reference (ab), may be implemented anytime that an equipment will be out of service for thirty days or longer. The implementation of IEM may be appropriate for those systems/equipments which were transferred to ship's custody early in the construction cycle. Ship's Force should follow the guidance of reference (ab) when implementing.

(2) In deciding whether to place equipment in lay up, consideration should be given to the training opportunity lost. As long as equipment is in an active status, Ship's Force will be performing PMS. By virtue of accomplishing those maintenance tasks, they will become more familiar with the equipment, its operation and the maintenance procedures. Maintaining equipment in an active status also allows for the identification of procedural problems within the MRCs.

3.4.2 Technical Feedback Reports. Ship's Force should start using Technical Feedback Reports (TFBR) to report problems with PMS as soon as the PMS package is installed. TFBRs should be submitted per the requirements of reference (ab). The TFBR tracking log should be established, even if PMS has not officially started. TFBRs are processed through the ISIC for further processing to RMC. If an ISIC is not available, TFBRs are to be processed through the TYCOM or directly to RMC. New construction ships will provide their TFBRs to the local RMC. The current contact information for the RMCs is listed in Volume VI, Chapter 2, Appendix A of this manual.

3.4.3 Establishment of Current Ship's Maintenance Project. The ship's Current Ship's Maintenance Project (CSMP) will be initialized at delivery. That does not mean however, that significant maintenance related events do not happen during the construction period. In fact, every industrial activity has their own deficiency tracking programs, all of which contain a certain degree of data that should be retained in the ship's CSMP. The problem is that this data resides on industrial activity computers which for the most part do not "talk" to Navy computers. When the ship leaves the industrial activity, it generally leaves without this data. Ship's Force will load into the CSMP any deficiencies not adjudicated at delivery and any historical construction related maintenance data deemed worthy of future retrieval.

3.4.4 Shipboard Nontactical Automated Data Processing Program. Naval Management Systems Support Office (NAVMASSO) is responsible for the software development, installation and required training associated with the Shipboard Nontactical Automated Data Processing Program (SNAP). Ship's Force should initiate liaison with the appropriate NAVMASSO branch to facilitate SNAP implementation and training. Additional details describing the NAVMASSO support function are addressed in Volume I, Chapter 2, paragraph 2.10.3 of this manual.

3.5 EQUIPMENT LOAD OUT.

3.5.1 Test Equipment. The General Purpose Electronic Test Equipment (GPETE) load out involves personnel from the ship, the Supervising Authority, Naval Weapons Station, Crane, IN and Naval Calibration Laboratory, Seal Beach, CA. The actual load out will vary dependent upon the platform. Generally, the equipment arrives during the construction phase and is stored by the shipbuilder until load out. Ship's Force, if not requested to do so by the Supervising Authority, should inventory and identify shortages while the GPETE is in storage.

3.5.2 Hand Tools and Weight Handling Equipment. Hand tools and weight handling equipment will also be arriving. Inventory of this equipment against Allowance Equipage Lists (AEL)/Allowance Parts Lists (APL) or class specific load lists at the earliest opportunity ensures the required support material is available when maintenance of equipment begins. Weight handling equipment requires certification prior to use and while it may be months before this equipment is required, a recall schedule should be developed to get the equipment certified.

3.6 LOGISTIC SUPPORT.

3.6.1 Technical Manuals and Drawings. Technical manuals and drawings are provided by the Supervising Authority and the Navy. The shipbuilder develops and provides manuals and drawings for all Contractor Furnished Equipment (CFE), including equipment furnished by subcontractors. In the case of Government Furnished Equipment (GFE), the shipbuilder will identify the required manuals to the Navy Publication and Printing Service Manuals Office, Washington, D.C., via the Supervising Authority and the Ship Program Manager. Navy Publication and Printing Service Manuals Office will deliver the manuals to the shipbuilder. For the first ship of a class, equipment manuals for new design GFE may not be immediately available from the Navy Publication and Printing Service Manuals Office. These manuals will be shipped with the equipment by the vendor. The shipbuilder shall provide stowage and custody of this documentation until actual shipboard loadout. To ensure all required technical manuals and drawings are received, initial documentation validation should be accomplished on a random sampling basis with emphasis placed on low visibility items such as power supplies and electronic subsystem manuals. Final validation will occur during loadout. Each Ship Program Manager has assigned an activity with the responsibility for loading out of Technical Manuals and Drawings. Contact the Supervising Authority or the Navy Distance Support Anchor Desk to determine the Program Manager. The Anchor Desk can be reached at 1-877-418-6824 or by e-mail (help@anchordesk.navy.mil).

a. Ship Systems Manual (SSM)/Ship Information Book (SIB). The SSM/SIB (SSM for submarines and SIB for surface forces) are the primary descriptive and operating manuals for non-propulsion plant ship systems. They are designed as a class manual and are the basic source of information for locating, describing and operating the following non-propulsion plant systems:

(1) Mechanical.

(2) Piping.

(3) Electrical.

(4) Electronic.

These manuals do not provide detailed maintenance information but do reference sources of information on maintaining, testing, troubleshooting, installing and removing these systems and equipment. SSMs and SIBs must be turned over to the ship prior to or at OCT or custody transfer of the system or equipment.

b. Engineering Drawings. All engineering drawings belong to one of two groups: ship construction drawings or equipment drawings. Each group is made up of several types of drawings.

(1) Ship Construction Drawings. These drawings are developed for building the ship and to reflect installed systems. These drawings are each assigned a seven-digit NAVSEA number and depending upon the platform a three-digit Component Identification Number/Ship Work Breakdown Structure/Expanded Ship Work Breakdown Structure may appear on the drawing. The NAVSEA number identities the drawing and the Component Identification Number/Ship Work Breakdown Structure/Expanded Ship Work Breakdown Structure assigns the drawing to a group of related drawings. Ship construction drawings are usually "class drawings" however, ships of a class, built at different times, may vary from the original design as improvements are made. This necessitates the development of hull unique construction drawings which have been verified by the shipbuilder and Supervising Authority to reflect an individual ship's configuration. Systems requiring these Selected Record Drawings (SRD) are identified in the ship's building specifications.

(2) Equipment Drawings. Equipment drawings describe equipment shown on ship construction drawings. They are prepared by industrial activities and/or equipment manufacturers and may be called vendor drawings. Equipment drawings are rarely assigned NAVSEA or any other government controlled number. These drawings are identified by a Commercial and Government Entity code with a manufacturer's drawing number.

c. Drawing Types. Engineering practices have developed common titles that are used on most drawings. By understanding the kind of technical information associated with each title, the drawing needed for a given job can be determined. The following is a list of common drawing types (they may be either equipment or ship construction drawing group types).

(1) System diagrams - A system diagram shows how a system is designed and describes the relationship among system components. System diagrams do not include physical or dimensional data, but normally refer to other drawings and documents that contain detailed information.

(2) Arrangement drawings - Arrangement drawings show locations, dimensions, and other system component information necessary to make correct installation on the ship.

(3) Assembly and subassembly drawings - Assembly and subassembly drawings show how individual parts fit together to form a larger component or equipment.

(4) Installation drawings - Installation drawings show piping, foundations, ventilation ducting, and other installation details. Installation drawings are used to install systems and equipment in the ship.

(5) Outline drawings - Outline drawings show the outward appearance of major system components and contain dimensions and service requirements necessary to install the component.

(6) Detail drawings - Detail drawings show dimensions and other manufacturing data for individual parts of components.

(7) Electrical drawings - Electrical drawings have a family of titles similar to those of other engineering drawings. Proceeding from the general to the detailed the following are the common electrical drawing types:

(a) Electrical system wiring diagrams - Electrical system wiring diagrams show how the overall system is intended to function.

(b) Cabling drawings - Cabling drawings describe cable runs in greater detail (similar to piping system diagrams).

(c) Wireway drawings - Wireway drawings show how cables are routed from one point to another in the ship (similar to system arrangement drawings).

(d) Schematic wiring diagrams - Schematic wiring diagrams describe individual wires inside the cables and how they connect to components.

(e) Wiring tables - Wiring tables provide detailed point-to-point data for connecting ship's wiring between components.

d. Technical Variance Documentation (TVD). Drawings may be amended with supplementary information called TVD. A set of TVD is a collection of documents describing how the as-built configuration of a ship differs from the class drawing design. TVD is not intended to be a revision to a drawing. Liaison Problem and Solution Sheets, Engineering Notices, Waivers and Deviations are some of the documents that make up TVD.

e. Format of Onboard Drawings. Very few drawings are provided to ships and shore facilities in hard copy form. Most are on microfilm aperture cards or microfiche, collectively known as microform. For selected platforms, Compact Disc Read Only Memory (CD-ROM) is being utilized. However, some of the more important SRDs are provided in hard copy as well as in other mediums.

f. Ship Drawing Index (SDI). The SDI lists all drawings for a class of ship. Using the SDI is the only way to determine a drawing's applicability. In addition to drawing applicability, it provides drawing revision applicability and TVD applicability. The SDI will also identify whether a drawing contains Submarine Safety (SUBSAFE) information, Noise Control information or is an SRD.

3.6.2 Unrestricted Operations Maintenance Requirement Cards (Submarines only).

a. Reference (ac) establishes the maintenance requirements and identifies the responsibilities and actions required to support continued unrestricted submarine operations to design test depth. This program is invoked on all SUBSAFE certified submarines. To support this program the Ship Program Manager issues individual manuals containing required, periodic SUBSAFE maintenance actions for each class and in some instances particular ships.

b. Loadout of Unrestricted Operations (URO) MRCs will be accomplished in conjunction with PMS installation. SUBMEPP representatives will provide to the ship's 3-M Coordinator the ship's copy of the "URO Book" during Phase II PMS installation. SUBMEPP manages the URO program for submarine Program Managers.

c. Additional information concerning the URO program can be found in Volume VI, Chapter 25 of this manual.

3.7 OPERATIONAL CONTROL TRANSFER. OCT, depending on the platform, will happen in one of several ways. The entire ship is turned over at one specific time (ship custody transfer), compartments/spaces are turned over as completed, or systems are turned over as completed without regard to space completion.

a. The shipbuilder will:

(1) Ensure all testing is complete to the most practical extent possible.

(2) Provide Ship's Force and the Supervising Authority with a turnover schedule.

(3) Conduct a review of all existing work/deficiencies with Ship's Force and the Supervising Authority and determine those items that must be cleared or resolved to support a safe and operational system turnover.

(4) Verify system, space or ship ready for turnover.

(5) Conduct walk-through with Ship's Force.

(6) Execute turn-over.

b. Ship's Force should be prepared to:

(1) Provide system experts for walk-throughs.

(2) Address concerns regarding turn-over to the Supervising Authority's Ship Manager.

(3) Ensure all work/deficiencies are cleared or resolved to ship's satisfaction prior to acceptance.

(4) Assume maintenance responsibility upon receipt. (PMS installation should be scheduled to support OCT).

**NOTE: IN SOME INSTANCES SYSTEMS MAY BE TURNED OVER THAT REQUIRE TEMPORARY SUPPORT SYSTEMS. THE INDUSTRIAL ACTIVITY WILL PROVIDE OPERATING INSTRUCTIONS, DRAWINGS (AS NECESSARY) AND OPERATING INDOCTRINATION TO SHIP'S FORCE. FOLLOWING THE REMOVAL OF TEMPORARY SUPPORT SYSTEMS, SHIP'S FORCE AND THE SHIPBUILDER SHOULD BE PREPARED TO CONDUCT ADDITIONAL WALK-THROUGHS.**

3.7.1 Sound Silencing Programs Unique to New Construction (MHC/SSN only).

a. Isolation System Survey. During the construction process, the shipbuilder, through Noise Reduction Program requirements, periodically inspects the ship to identify incorrect installation and poor construction techniques relating to the silencing nature of the ship. It is imperative that no sound shorts exist between sound isolated systems/components and the hull structure. Ship's Force can play a major role in the inspection process by identifying deficiencies. This survey is the basis for acoustic measurements to be completed in subsequent surveys. Additional information concerning submarine noise reduction surveys is addressed in Volume VI, Chapter 23 of this manual.

b. (Submarines only) Topside and Housekeeping Survey. During the construction process, this survey is completed to accomplish two aspects of silencing. First, the topside inspection checks the outside of the pressure hull, especially flow exposed areas, to ensure that tones or rattles are not caused by loose gear, fairing plates, and other discontinuities. Secondly, the housekeeping inspection checks the inside of the pressure hull to ensure sound shorts do not occur as a result of installation of lockers and locker doors, stowage, clogged ventilation ducts or filters, etc. This survey usually identifies problems associated with items not covered by ship design, but those items typically handled by the ship.

c. Structureborne and Overside Surveys. Upon installation of Noise Critical components and their associated operating systems, structureborne noise surveys are accomplished to check the acoustic nature of the installation. Proper installation of isolation features and proper maintenance of the component during any lay up is crucial to the success of this survey. Ship's Force must continually be aware of the installation practices of the shipbuilder and thoroughly inspect the installation for sound shorts and proper alignment prior to system/component turnover. The Overside Survey is accomplished outside the hull (pressure hull for submarines) as an indication of radiated noise. Proper operation of systems and components during this process is crucial to satisfactory acoustic levels. Reference (ad) provides additional information concerning acoustic surveys for submarines.

# APPENDIX A

## AREAS TO BE EVALUATED DURING ARRIVAL ASSISTS

1. As a minimum, the following areas should be evaluated. Duplicate inspection of areas covered by other inspections need not be made.

1.1 Training program which should include instructions in the following:

a. Industrial activity organization, including management and working levels.

b. Industrial activity procedures and practices, including:

(1) OCT.

(2) Tag-Out.

(3) Ripout.

(4) Industrial Activity Deficiency Correction.

(5) General Testing Requirements. Personnel should be familiar with references (ae) and (af).

(6) The industrial activity system for accomplishing planned maintenance on equipment under their cognizance.

c. General schedule of Key Events and phases of work and testing.

d. Safety requirements including Ship's Force and industrial activity responsibilities for:

(1) Dry Dock Safety.

(2) Fire Watches.

(3) Watertight Integrity.

(4) Reactor Plant Safety.

1.2 Status of administrative preparations, including:

a. Ship and department organization manuals and directives to ensure administration is in accordance with current requirements.

b. Ship and departmental training plans for implementation during construction.

c. Procedures for qualifying underway/steaming watchstanders and maintaining proficiency for inport watchstanders, including:

(1) Formal provisional qualification procedures.

(2) Qualification goals for Key Events, such as undocking/launching, operational testing of ship and propulsion plant systems, steam testing, initial criticality, etc. The goals for Fast Cruise should include a three section watch capability for the entire crew.

d. Procedures for maintenance and security of Ship's Force barge or office spaces.

e. General plan for Ship's Force responsible actions including provisions for:

(1) Barge, berthing and messing facilities.

(2) Routine ship and barge watch bill.

(3) Scheduling of required shore based schools and leave for personnel.

(4) Ship's Force planned maintenance routines.

(5) Provisions for shift work during known periods of intensive testing (e.g., Hot Ops, Power Range Testing).

(6) Target dates for completion of key ship and department directives and procedures.

1.3 Evaluate the capability of the crew to perform industrial activity type evolutions including:

a. Ability to review industrial activity Work Authorization Forms, major system tag-outs, and test procedures.

b. Inport and dry dock watchstanding procedures including special inspection requirements for systems in abnormal lineups or partially removed.

c. Ability to inspect and monitor ship conditions in relation to the special requirements for watertight integrity. This evaluation should include observation of a trim/draft change calculation by the Ship's Safety Council representative.

1.4 Ensure that Ship's Force has a satisfactory understanding of the following:

a. Relationship with the industrial activity and Supervising Authority including ship's responsibility regarding weekly management meetings.

b. Relationships with the ISIC and the TYCOM Type Desk, including the ship's responsibility for reporting problem areas.

c. Relationship with the local Naval Reactors Representative.

d. Functions and responsibilities of the Joint Test Groups (Nuclear/Hull, Propulsion and Auxiliaries/Weapons) and the Ship's Safety Council.

e. Control mechanisms for work/tests affecting ship's condition.

f. Relationship with the TYCOM industrial activity representative (if assigned).

(This Page Intentionally Left Blank)

# APPENDIX B

## AREAS TO BE EVALUATED DURING MONITORING INSPECTIONS

1. Procedures and administrative steps for provisional watchstation qualifications.

2. Department organization manuals.

3. Department instructions and administrative procedures.

4. Ship's instructions and administrative procedures.

5. Equipment logs, operating instructions and casualty procedures.

6. Ship's standard operating procedures and the Ship's Organization and Regulations Manual.

7. Training planned and conducted to support initial qualifications for watchstander proficiency.

8. Watchstanding performance.

9. Spot checks of ship's records and logs in use.

10. Status of Ship's Force work.

11. Status of Ship's Force responsible planned maintenance.

12. Inspect installed equipment for cleanliness and adequate protection from damage.

13. Tag-Out and Work Authorization Logs. Spot check for compliance in accordance with current directives.

14. Inspect ship for hazards.

15. Inspect provisions for casualty control including watertight integrity.

16. Verify that items are drawn from the ship's Coordinated Shipboard Allowance List (COSAL) stock only on an emergency basis and that such issues are well documented with appropriate adjustments to the inventory records.

17. Evaluate general safety practices.

18. Evaluate the response of the Supply System to requisitions in support of Ship's Force work. (Post Shakedown Availability requirement only).

19. Status of technical manuals, drawings, maintenance documentation, etc., onboard.

(This Page Intentionally Left Blank)

**APPENDIX C**

**SAMPLE PRE-REACTOR SAFEGUARD EXAMINATION NOTICE**

(Ship Name) NOTE 3540

PCU (Ship Name and Hull No.) NOTICE 3540

Subj: PRE-REACTOR SAFEGUARDS EXAMINATION (RSE)

Encl:
(1) Schedule of Examination
(2) Officer Roster
(3) Crew Roster
(4) Initial Criticality and Power Range Testing Watchbill
(5) Interview Schedule
(6) ELT Evolution Schedule
(7) Status of Propulsion Plant Systems and Spaces for Initial Criticality

1. Purpose. To promulgate information pertinent to the conduct of the Pre-RSE.

2. Discussion. A Pre-RSE is scheduled for PCU (Ship Name) on (Date). All examination activities will be conducted in the crew spaces in Building ___ at _____ Shipyard with the exception of observed drills and evolutions which are to be conducted onboard.

3. Inspection Team Conference Rooms. The Wardroom in Building ___ will be available for the private use of the Inspection Team throughout the examination. During the drill periods, the Wardroom aboard (Ship Name) will be available for use by the Inspection Team.

4. Responsibilities.

a. The Executive Officer is responsible for the overall coordination and execution of the examination per the schedule contained in enclosure (1). Crew members as designated by enclosures (2) and (3) will participate.

b. Enclosure (4) provides the intended watchbill for manning watches throughout initial criticality preparations and power range testing.

(Ship Name) NOTE 3540

5. Interviews. All interviews will be conducted in accordance with the schedule contained in enclosure (5). Personnel shall not discuss the interviews until all interviews are complete.

| Interview (Subject Area) | Locations | Groups Interviewed |
|---|---|---|
| A Fluids | WEPS/SUP Office | EOOW/EWS and M Div |
| B Reactor Theory | NAV Office | EOOW/EWS, RC Div and 2 EPCP/2 SPCP Operators |
| C Electrical | ENG Office | EOOW/EWS, E Div and RC Div |
| D CHEM/RADCON | XO Office | EOOW/EWS and all ELTs |
| E Integrated Plant Ops | CO Office | EOOW |

6. Records Review. Record reviews will be conducted in a large classroom. Records will be pre-staged in the logroom or designated area and moved to the classroom just prior to the scheduled review.

7. Meals. The (Name & Location of Mess Facility) will be available for meals. Working lunches in the (Name & Location of Mess Facility) are available.

A.B. SKIPPER

Distribution:

RSE Team (7)

(Ship Name) NOTE 3540

**PRE-RSE SCHEDULE OF EXAMINATION**

| DD/MM | |
|---|---|
| 0600 | Relieve the watch: Section I. |
| 0700 | RSE Team arrives at PCU (Ship Name). |
| 0700-0730 | Continental Breakfast in the Wardroom. |
| 0730-0800 | Team meets with Commanding Officer, Executive Officer, and Engineer Officer to discuss the examination. |
| 0730 | Long Form Pre-Critical Check off. |
| 0800-1000 | ELT Evolution per enclosure (6). |
| 1000-1300 | Individual interviews per enclosure (5). |
| 1100-1130 | Relieve the watch: Section II. |
| 1130-1300 | Observed evolutions and material inspection. Section II. |
| 1300-1330 | Lunch. |
| 1330-1530 | Individual interviews continued. Sections I, III. |
| 1330-1530 | ELT chemistry/dosimetry observations per enclosure (6). |
| 1330-1530 | Observed evolutions and material inspection continued. |
| 1500-1530 | Relieve the watch: Section III. |
| 1530-1630 | Drill Team brief shipboard in Wardroom. |
| 1530-1600 | Inspection Team meeting in Wardroom (onboard). |
| 1630-1800 | Drills: Section III. |
| 1800-1830 | Relieve the watch: Section I. |
| 1830-2000 | Drills: Section I. |
| DD/MM | |
| 0700 | Relieve the watch: Section II. |
| 0700-0745 | Continental Breakfast in the Wardroom. |
| 0730-0750 | ELT Evolution per enclosure (6). |
| 0800-1000 | Individual interviews per enclosure (5). |
| 0800-0900 | EWS Group interview (Location). |
| 0800-1000 | Training Records/Qualification Record review in large classroom. |
| 0900-1000 | EOOW Group interviews. |
| 1000-1100 | Watch Section Seminar. Section I. |
| 1000-1200 | Admin review in large classroom. |
| 1200-1230 | Lunch. |
| 1230-1630 | Critique Preparations. |
| 1300 | Relieve the watch: Section I. |
| 1630-1730 | Critique, large classroom. |

Encl (1)

NOTE 3540

**SAMPLE OFFICER ROSTER**

| Name | Rank | Report Date | Billet | EOOW Qual Status | Prototype | Experience |
|---|---|---|---|---|---|---|
| IOWA STATE, '73, BS CHEMICAL ENGINEERING | CDR | 91NOV21 | CO | QUALIFIED | S1W JUN74-JAN75 | SSN 637/E, MPA; S8G PROTOTYPE/ INST/DEPT HEAD; SSN 650/ENG; CSG2/ENG READINESS SSN 607/EXEC OFF |
| NROTC, '78, RPI, BS MECHANICAL ENGINEERING | LCDR | 91NOV21 | XO | QUALIFIED | S1C FEB79-AUG79 | CMD NUC QUALIFIED; SSN 689/CRA/MPA, SONAR/FT, WEPS; SSBN 642/ENG; SSN 571/OIC |
| OCS, '83, PURDUE UNIVERSITY, BS CHEMICAL ENGINEERING | LCDR | 91NOV21 | ENG | QUALIFIED | S8G JUN84-DEC84 | QUALIFIED ENG/S8G; SSBN 730/DCA, RCA |
| NROTC, '83, UNIVERSITY OF KANSAS, BS ELECTRICAL ENGINEERING | LT | 91NOV21 | NAV | QUALIFIED | S3G JUN84-DEC84 | QUALIFIED ENG/S5W; SSN 661/E, MPA, TM, COMM; S1C PROTOTYPE INSTRUCTOR |
| NROTC, '84, MARQUETTE UNIVERSITY, BS ELECTRICAL ENGINEERING | LT | 92JAN14 | WEPS | QUALIFIED | A1W JAN85-JUN85 | CMD NUC QUALIFIED; QUALIFIED ENG/S5W; SSN 683/CRA, RCA, E, SONAR; SSBN 659/NAV |
| OCS, '88, CLARKSON UNIVERSITY, BS ELECTRICAL ENGINEERING | LT | 91NOV21 | | QUALIFIED | S3G JUL89-JAN90 | QUALIFIED ENG/S6G; SSBN 654/DCA, RCA, AWEPS |

NOTE 3540

**SAMPLE ELECTRICAL DIVISION ROSTER**

| Name | Rate/NEC | Report Date | Senior Special Quals | Watch in Training % Progress | Prototype | Experience |
|---|---|---|---|---|---|---|
| | EMC/3364 | 91NOV21 | EWS/EDPO | QUALIFIED | S1C JUL76-DEC76 | SSBN 635/EO, SRO SSN 690/EWS, EDPO |
| | EM1/3364 | 91NOV21 | EO/SRO | EWS/60% | D1G JUL76-DEC76 | SSBN 598/EWS; S8G PROTOTYPE INSTRUCTOR/EWS; SSN 605/EWS; SSN 754/EWS; AS 11/R-10 |
| | EM1/3364 | 91NOV21 | EO/SRO | EWS/60% | S7G OCT82-APR83 | SSBN 636/SRO; SSN 725/SRO, EWS; CSS2/PMT |
| | EM1/3364 | 91NOV21 | EO/SRO | EWS/60% | S1C APR81-OCT81 | SSBN 626/EWS; NUC FIELD A SCOL INSTRUCTOR; SSN 650/EO, SRO |
| | EM2/3354 | 92MAY25 | AEA/SEO | EO/20% | S1C OCT91-APR92 | |
| | EM2/3354 | 91NOV21 | AEA/SEO | EO/50% | S1C APR91-OCT91 | |
| | EM2/3354 | 92FEB14 | EO | SRO/90% | D1G MAY89-NOV89 | D1G STAFF INSTRUCTOR/SRO |
| | EM2/3354 | 91NOV21 | AEA/SEO | EO/20% | A1W APR91-OCT91 | |

NOTE 3540

**SAMPLE REACTOR CONTROLS DIVISION ROSTER**

| Name | Rate/NEC | Report Date | Senior Special Quals | Watch in Training % Progress | Prototype | Experience |
|---|---|---|---|---|---|---|
| | ETC/3363 | 91NOV21 | EWS/EDPO | QUALIFIED | A1W<br>AUG82-FEB83 | SSBN 641 (G) /RO<br>SSBN 641 (B) /SRO<br>SSBN 635/SRO<br>NPTU INSTRUCTOR |
| | ET1/3363 | 91NOV21 | SRO/RO | QUALIFIED | S8G<br>APR81-OCT81 | SSN 650/SRO<br>SSN 709/SRO<br>NSSF NLON/R8<br>QUALITY ASSURANCE |
| | ET1/3363 | 91NOV21 | SRO/RO | QUALIFIED | S1W<br>FEB84-AUG84 | SPU S1W/RO<br>SSN 662/RO, SRO,<br>EDPO, EWS |
| | ET1/3363 | 91NOV21 | SRO/RO | QUALIFIED | S7G<br>DEC82-JUN83 | SSBN 634/RO, SRO<br>NSSF RADCON |
| | ET2/3353 | 92JAN20 | RT/SEO | RO/80% | D1G<br>MAY91-DEC91 | |
| | ET2/3353 | 92JAN19 | RT/SEO | RO/80% | D1G<br>MAY91-DEC91 | |
| | ET2/3353 | 92FEB14 | RT/SEO | RO/30% | S1C<br>JAN90-JUL90 | |
| | ET2/3353 | 91DEC27 | RT/SEO | RO/50% | S1C<br>MAY91-<br>NOV91 | |

**SAMPLE MACHINERY DIVISION ROSTER**

| Name | Rate/NEC | Report Date | Senior Special Quals | Watch in Training % Progress | Prototype | Experience |
|---|---|---|---|---|---|---|
| | MMCS/3365 | 92APR24 | EWS/EDPO | QUALIFIED | D1G JUL73-JAN74 | SSN 588/EWS; S8G PROTOTYPE/EWS AS 37/NUC PLANNING; SSN 712/EWS NSSF NUC PLANNING SSN 705 NSSF QUALITY ASSURANCE |
| | MMC/3365 | 91NOV21 | EWS/EDPO | QUALIFIED | D1G JUL82-JAN83 | SSN 717/EWS, EDPO CSS7/PMT |
| | MM1/3365 | 91NOV21 | ERS | EWS/50% | S1C FEB82-AUG82 | SSN 591/ERS SSN 678/EWS, EDPO |
| | MM1/3365 | 92JAN16 | ERS | EWS/90% | S1W SEP81-MAR82 | SSN 707/EWS, EDPO CSG7/MATERIAL |
| | MM1/3365 | 91NOV21 | ERS | EWS/25% | S7G OCT83-MAR84 | SSBN 728/ERS |
| | MM1/3365 | 91NOV21 | ERS | EWS/25% | S1W MAR83-SEP83 | SSBN 654/ERS NSSF NLON/NUC REPAIR |
| | MM1/3365 | 91NOV21 | ERS | EWS/25% | S8G JAN87-AUG87 | SSN 719/ERS |
| | MM1/3365 | 91DEC16 | ERS | EWS/50% | S8G JAN88/JUL88 | SSBN 658/EDPO, EWS |

NOTE 3540

**SAMPLE REACTOR LABORATORY DIVISION ROSTER**

| Name | Rate/NEC | Report Date | Senior Special Quals | Watch in Training % Progress | Prototype | Experience |
|---|---|---|---|---|---|---|
| | MM1/3366 | 91NOV21 | EWS/EDPO/LELT | QUALIFIED | S1W AUG83-MAY84 | SSN 598/SRW<br>SSN 607/ELT<br>NSSF R-5/RCM<br>SSN 725/EWS, EDPO, LELT<br>SSN 762/EWS, EDPO, LELT |
| | MM1/3356 | 91NOV21 | ERS | EWS/10% | S5G OCT88-APR89 | S5G PROTOTYPE/ERS, ELT |
| | MM2/3356 | 91DEC31 | ERUL | ERS/30% | S3G DEC88-JUN89 | S3G PROTOTYPE/ELT, SRW |
| | MM2/3356 | 91NOV21 | ERLL/ERF | ERUL/30% | MTS-635 JAN91-JUN91 | |
| | MM2/3356 | 91NOV21 | ERLL/ERF | ERUL/30% | S1C JAN91-JUN91 | |
| | MM3/3356 | 92JUL17 | ERF | ERLL/50% | S7G JUN91-MAR92 | |

NOTE 3540

**SAMPLE**
**ENGINEERING DEPARTMENT**
**INITIAL CRITICALITY**
**WATCHBILL**

| Watch Station | Section I | Section II | Section III |
|---|---|---|---|
| **EOOW** | | | |
| **EWS** | | | |
| **ERS** | | | |
| **RO** | | | |
| **EO** | | | |
| **RT** | | | |
| **AEA** | | | |
| **CH/CD** | | | |
| **ELT** | | | |
| **ROD CONTROL MONITOR** | | | |
| **SRW** | | | |
| **SSW** | **CO** | **XO** | **ENGINEER** |
| **NI MONITORS** | | | |

**OTHERS: PERSONNEL NOT ON WATCH:**

**NOTES:**

Encl (4)

NOTE 3540

**SAMPLE**
**ENGINEERING DEPARTMENT**
**POWER RANGE TESTING**
**WATCHBILL**

| Watch Station | Section I | Section II | Section III |
|---|---|---|---|
| **EOOW** | | | |
| **EWS** | | | |
| **ERS** | | | |
| **RO** | | | |
| **EO** | | | |
| **RT** | | | |
| **AEA** | | | |
| **FEED STATION** | | | |
| **ELT** | | | |
| **ERLL** | | | |
| **ERUL** | | | |
| **ERF** | | | |
| **MANEUVERING PHONE TALKER** | | | |
| **HOTWELL LEVEL CONTROLLER** | | | |
| **STEAM DUMP 1**<br>**2**<br>**3** | | | |
| **SSW** | **CO** | **XO** | **ENGINEER** |

**OTHERS: PERSONNEL NOT ON WATCH:**

**NOTES:**

Encl (4)

NOTE 3540

**SAMPLE INTERVIEW SCHEDULE**

INTERVIEWER – A_____
SUBJECT AREA - FLUIDS
LOCATION:_____

| (DATE)<br>TIME | SENIOR<br>WATCHSTATION | NAME(S) |
|---|---|---|
| 0800 | EOOW | |
| 0830 | EWS | |
| 0900 | ERS/ERF | |
| 0930 | ERS | |
| 1000 | ERS | |
| 1030 | EOOW | |
| 1100 | ERUL | |
| 1130 | ERUL | |
| 1200 | EWS/ERS | |
| 1230 | ERS | |
| 1300 | LUNCH | |
| 1330 | ERF | |
| 1400 | EOOW | |
| 1430 | EOOW | |
| 1500 | ERS/ERUL | |

Note: Personnel not interviewed: (List)

SHIP'S MONITORS
PRIMARY:_____
ALTERNATE:_____

Encl (5)

NOTE 3540

**SAMPLE INTERVIEW SCHEDULE**

INTERVIEWER - B -_____
SUBJECT AREA - REACTOR THEORY
LOCATION:_____

| (DATE) TIME | SENIOR WATCHSTATION | NAME(S) |
|---|---|---|
| 0800 | EWS | |
| 0830 | EO | |
| 0900 | EWS | |
| 0930 | EOOW | |
| 1000 | RO | |
| 1030 | RT | |
| 1100 | EOOW | |
| 1130 | EOOW | |
| 1200 | EOOW | |
| 1230 | EWS | |
| 1300 | LUNCH | |
| 1330 | TH | |
| 1400 | RO | |
| 1430 | RT | |
| 1500 | | |

Note: Personnel not interviewed: (List)

SHIP'S MONITORS
PRIMARY:_____
ALTERNATE:_____

Encl (5)

NOTE 3540

**SAMPLE INTERVIEW SCHEDULE**

INTERVIEWER - C -_____
SUBJECT AREA - ELECTRICAL
LOCATION:_____

| (DATE) TIME | SENIOR WATCHSTATION | NAME(S) |
|---|---|---|
| 0800 | EWS | |
| 0830 | EWS | |
| 0900 | RO/RO/RT | |
| 0930 | EO | |
| 1000 | EOOW | |
| 1030 | EWS | |
| 1100 | EOOW | |
| 1130 | EOOW | |
| 1200 | EO/EO/RT | |
| 1230 | AEA | |
| 1300 | LUNCH | |
| 1330 | EO | |
| 1400 | AEA | |
| 1430 | RO/RO/RT | |
| 1500 | EOOW | |

Note: Personnel not interviewed: (List)

SHIP'S MONITORS
PRIMARY:_____
ALTERNATE:_____

Encl (5)

NOTE 3540

**SAMPLE INTERVIEW SCHEDULE**

INTERVIEWER - D -_____
SUBJECT AREA - CHEMISTRY/RADIOLOGICAL CONTROLS
LOCATION:_____

| (DATE) TIME | SENIOR WATCHSTATION | NAME(S) |
|---|---|---|
| 1000 | EOOW | |
| 1030 | EOOW | |
| 1100 | EOOW | |
| 1130 | ELT | |
| 1200 | EWS | |
| 1230 | LELT | |
| (DATE) | | |
| 0800 | EOOW | |
| 0830 | EOOW | |
| 0900 | ELT | |
| 0930 | EWS | |

Note: Personnel not interviewed: (List)

SHIP'S MONITORS
PRIMARY:_____
ALTERNATE:_____

Encl (5)

**SAMPLE INTERVIEW SCHEDULE**

INTERVIEWER - E -_____
SUBJECT AREA - INTEGRATED PLANT OPERATIONS
LOCATIONS:_____

| (DATE) TIME | SENIOR WATCHSTATION | NAME(S) |
|---|---|---|
| 0800 | EOOW | |
| 0830 | EOOW | |
| 0900 | EOOW | |
| 0930 | EOOW | |
| 1000 | N/A | |
| 1030 | N/A | |
| 1100 | N/A | |
| 1130 - 1300 | Observed Evolutions and Material Inspection | |
| 1300 - 1330 | LUNCH | |
| 1330 - 1530 | Observed Evolutions and Material Inspection | |

Note: Personnel not interviewed: (List)

SHIP'S MONITORS
PRIMARY:_____
ALTERNATE:_____

NOTE 3540

**SAMPLE**
**ELT EVOLUTION SCHEDULE**

| (DATE) | TIME | NAME | EVOLUTION |
|---|---|---|---|
| | 0800 | | PRIMARY SAMPLE |
| | 0900 | | SECONDARY SAMPLE |
| | 0930 | | SECONDARY SAMPLE |
| | 1330 | | SECONDARY SAMPLE |
| | 1400 | | SECONDARY SAMPLE |
| | 1430 | | DOSIMETRY |
| | 1450 | | DOSIMETRY |
| | 1510 | | DOSIMETRY |

Encl (6)

NOTE 3540

**SAMPLE**
**STATUS OF PROPULSION PLANT SYSTEMS AND SPACES**
**FOR INITIAL CRITICALITY**

1. Systems required for initial criticality not yet under the operational control of Ship's Force include:

(List those systems or portions of systems and components which are required for initial criticality but are not yet under the operational control of Ship's Force.)

2. Systems under operational control of Ship's Force include:

(List the systems, components and spaces under the control of Ship's Force.)

3. Significant propulsion plant material deficiencies:

(List significant propulsion plant material deficiencies.)

Encl (7)

NOTE 3540

**SAMPLE**
**STATUS OF PROPULSION PLANT SYSTEMS AND SPACES**
**FOR INITIAL CRITICALITY**
**(Cont'd)**

**TEMPORARY SYSTEMS INSTALLED TO SUPPORT TESTING**

(List the temporary systems installed to support testing.)

**DRILL SIMULATIONS AND LIMITATIONS**

(List the conditions and limitations of simulations. System status and conditions which are outside the normal parameters and normal configuration will be defined. Staging of "temporary" equipment or identification of expected simulations shall be specified.)

Encl (7)

NOTE 3540

**SAMPLE**
**STATUS OF PROPULSION PLANT SYSTEMS AND SPACES**
**FOR INITIAL CRITICALITY**
**(Cont'd)**

**SIGNIFICANT ENGINEERING DEPARTMENT ADMINISTRATIVE DEFICIENCIES**

Departmental

1. Qualifications. Due to significant shiftwork delays for Post-Core Fill and Hot-Ops, Phase II (Initial Criticality) qualifications are not complete. They will be completed by (Date).

2. CO RSE Interviews/Qualifications. Due to delays in qualifications noted in paragraph (1), these are not complete. The CO has issued a letter (Date) to the Engineering Department detailing the scope and conduct of these interviews. A copy of this letter has been provided to the Senior Member.

3. Change 11 to the qualification instruction is not implemented in all qualification cards (to be promulgated (Date)).

4. Some Department and EOOW/EWS exams from (Date) do not have reexam for exam failures.

Machinery Division

1. Material History

   a. Hull and tank information recorded on Material History Cards vice Hull Cards.

   b. No QA records - no QA work performed, no QAIs qualified.

Reactor Controls Division

1. Material History. Rod Control and SVFC Material History has not been updated with data that has just been received from recent Hot Operation Testing.

Electrical Division

1. Superseded cyclic primary PMS schedule has been accidentally destroyed.

Reactor Laboratory

(List deficiencies concerning the Reactor Laboratory.)

Encl (7)

(This Page Intentionally Left Blank)

## APPENDIX D

## IN-SERVICE COMPARTMENT SURVEILLANCE GUIDE

1. As directed by OPNAVINST 4700.8, approximately two to four weeks for submarines, or two to four months for Nuclear Powered Aircraft Carriers, prior to the first Sea Trial, a nuclear ship is to be placed "In-Service". A prerequisite to placing the ship "In-Service" is satisfactory habitability conditions. There still remains industrial and fitting out work prior to ship completion and readiness for Sea Trials. The accepting authority must take the action above into consideration when scheduling the habitability inspection prior to the crew moving on board. The purpose of this inspection is to ascertain whether or not the spaces within which the crew will live, primarily berthing and messing, are clean, safe, and ready to receive the crew.

2. Spaces that are considered finished and have been inspected by Ship's Force should be complete to approved plans.

3. The following is a list of attributes which should be checked for completeness during "In-Service" inspections of spaces in the final phases of construction.

a. Cable hanger/banding - properly installed.

b. Cleanliness - equipment, equipment space, and bilge area free of industrial dirt and debris (there may be areas of light dust).

c. System completeness - handwheels, spray shields, etc. are installed.

d. Bilges - free of standing oil.

e. Compartment free of damage - pipe scars, arc strikes, etc.

f. Grounding straps - properly installed.

g. Lockers - stowage and shelving solidly attached and operable.

h. Compartment lighting - installed and operable.

i. Compartments - to be free from construction material and any unsecured objects that may cause a threat to personnel safety.

j. Safety chains, ladders, and handrails - installed, fastened in place and per plan.

k. Permanent deck plates - corners bolted down, well fitted, and do not present a tripping hazard (deck plates over bilge areas need not be bolted at this time).

l. Welding - all structures complete.

m. Preservation paint - neat and complete, with approved color schemes. Basic preservation applied to all structures and equipment (areas of minor rust and bare ferrous metal are acceptable at this time in compartments in the final phases of construction).

n. Appearance paint (applied for cosmetics rather than preservation) - applied to routinely visible surfaces and presents a neat appearance.

o. Accessibility of equipment - convenient for operation, repairs, replacement, maintenance, testing, and visible use.

p. Store Rooms - complete (installations and painting).

q. Marking of equipment - valve labels, name plates, instruction and warning plates installed and readable.

r. Protection of equipment from any damage - as required by plans or planned maintenance guidance (e.g., Scott Foam).

s. Berthing/Messing arrangement - proper type, accessibility, clearance, seating capacity, etc. per plan.

t. Joiner work - compartment bulkheads/overhead structures, moldings, and furniture installation complete and presents a neat appearance; formica will be free of damage.

u. Condition of deck coverings (Tile/Terazzo) - free of any damage and major discoloration.

v. Watertight and non-watertight doors - installation complete, well fitted, with proper operation (ease of opening and closing) and protection devices installed.

# APPENDIX E

## SAMPLE PRE-COMMISSIONING HABITABILITY INSPECTION CHECKLIST FOR NEW CONSTRUCTION SHIPS

Ref: (a) OPNAVINST 4700.29 - Pre-Commissioning Habitability Inspection of New Construction Ships
(b) OPNAVINST 4700.8 - Trials, Acceptance, Commissioning, Fitting Out, Shakedown and Post Shakedown Availability of U.S. Naval Ships Undergoing Construction or Conversion

1. A pre-commissioning habitability inspection is required for new construction ships by references (a) and (b). The purpose of the inspection is to verify that living and messing spaces are clean, safe and ready to receive the crew. Upon completion of the inspection, the inspection team leader will provide copies of the deficiency list to the Ship Program Manager's representative, the Supervising Authority, the Commanding Officer of the ship's pre-commissioning unit and the TYCOM.

2. This assessment is not of the magnitude or detail required by the Supervising Authority to ensure shipbuilder compliance with all building specifications in the contract or by the Board of Inspection and Survey during acceptance trials. This assessment is a qualitative judgment of the ability of the crew to live on board safely and comfortably during the fitting out period. This assessment does not fulfill shipboard system certification requirements or other inspection requirements related to food service sanitation, laundry and dry cleaning, potable water and marine sanitation devices.

3. Areas to be inspected include general safety and sanitation, galley, scullery, messing, dry food storage spaces, refrigerated food storage spaces, berthing spaces, washrooms, showers, heads, lounges and potable water. Only spaces designated to support initial crew move aboard will be inspected. For example, if only the aft galley will be used at move aboard, the forward galley will not be inspected.

4. It is understood that not all equipment, spaces and systems aboard the ship will be completed and transferred to Ship's Force at the time of the assessment. If a space/system to be inspected has not been transferred to the crew, the shipbuilder and Supervising Authority will present the space/system to the inspector. If a space/system has been accepted by the crew, the crew will present the space; cognizant shipbuilder and Supervising Authority personnel should be present. As remaining habitability related spaces/systems are completed after crew move aboard, the Supervising Authority and Ship's Force are responsible for inspecting spaces/systems per the turnover procedure specified in the contract.

5. The pre-commissioning habitability inspection team will evaluate the following areas utilizing the enclosed inspection checklists:

A. General
B. Food Service
C. Living Spaces
D. Freshwater
E. Collection, Holding and Transfer (CHT) System (See Note)
F. Laundry and Dry Cleaning (See Note)

Note: Although not identified in reference (a), operational laundry facilities and waste removal systems are considered desirable to support crew move aboard. If requested by the Supervising Authority the inspection team will assess the readiness of these areas during the habitability inspection. Other crew support spaces, such as Barber Shops, may also be included in the inspection if requested by the Supervising Authority and agreed upon by the inspection team.

(This Page Intentionally Left Blank)

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| **A. GENERAL** (OPNAVINST 4700.29) | | |
| 1. All trash and rubbish removed. | | |
| 2. Spaces neat, clean and in a usable condition. | | |
| 3. Wireways and other exposed areas that could serve as a path for rats are free of foreign matter. | | |
| 4. Electrical wires or plugs are not located so as to be easily tripped over. | | |
| 5. Drains open with covers attached. | | |
| 6. Ventilation (heating and cooling) and lighting adequate to maintain healthful and comfortable conditions. | | |
| 7. Electrical outlets required for habitability are installed and operable. | | |
| 8. Spaces are free of major safety discrepancies. | | |
| 9. Damage Control equipment installed per ship plan and labeled. | | |
| **B. FOOD SERVICE** | | |
| 1. Facility | | |
| a. Decks sloped properly to allow drainage into deck drains. | | |
| b. Adequate and convenient hand washing facilities with hot and cold running water, dispensed soap and single service disposable towels provided in or adjacent to food service facility (OPNAVINST 5100.19, Section IV CH2, Part D.2). | | |
| c. Drain lines from refrigerators, ventilator hoods and other food service equipment drain through an air gap into a deck drain or funnel with removable grating (NAVSUPINST 4061.11; GEN SPECS sect. 528 (if cited in the contract)). | | |

Inspector: _____ Date: _____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| d. Signs posted reminding personnel to wash hands and to not smoke (NAVMED P-5010, Article 1-6). | | |
| e. Equipment operating and safety instructions prominently posted on or conspicuously near the equipment to which it relates (OPNAVINST 5100.19, Section V). | | |
| f. Steam and hot water lines properly lagged and sheathed (OPNAVINST 5100.19, Enclosure (1), Section III). | | |
| g. Furniture installed in prescribed arrangement and neat, clean and in usable condition (OPNAVINST 4700.29) | | |
| h. Racks and bins installed in storerooms. | | |
| 2. Equipment | | |
| a. Deck mounted equipment sealed to the deck or elevated on legs that provide at least 8 inches of clearance between the deck and equipment (NAVMED P-5010, Article 1-8). | | |
| b. Decks in food service areas maintained in good repair (NAVMED P-5010, Article 1-15). | | |
| c. All equipment accessible. | | |
| d. Food contact surfaces made of smooth, corrosion resistant, non-toxic (FDA Food, Drug and Cosmetic Act guidelines), stable non-absorbent materials that will not impart odors, color or taste, nor contribute to adulteration of food (NAVMED P-5010, Article 1-8 (3)). | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| e. Vegetable peelers, vegetable slicers, can openers, meat slicers, ranges, ovens, grills, deep fat fryers, microwave ovens, toasters, mixing machines, pressure cookers, steam jacketed kettles, steam tables, steam table and salad bar inserts, soft ice cream machines, baking and roasting pans, cooking and serving utensils, food carts, storage racks and shelving properly installed, sanitized and operationally tested (NAVMED P-5010, Article 1-17; NAVSUP P-421, Chapter 2). | | |
| f. On/off toggle switches on food service equipment have toggle switch guards installed to prevent inadvertent operation (OPNAVINST 5100.19, Section V). | | |
| g. Safety interlocks on food preparation equipment maintained in proper operating condition. | | |
| h. Steam Jacketed Kettles. | | |
| (1) Equipped with functional steam safety release valve (GEN SPECS, Section 528, Article C 1905 g(4)) if applicable. | | |
| (2) Chains at least 18 inches long attached to steam safety release valves (GEN SPECS, Section 528, Article C1905 g(4)) if applicable. | | |
| (3) Steam discharge piped down to kettle coamings and directed away from operators feet (GEN SPECS, Section 651 b) if applicable. | | |
| i. Equipment free from salt water connections except NAVMEDCOM approved garbage grinders or refrigeration units (NAVMED P-5010, Article 1-8 (3)). | | |
| j. Food service spaces and equipment free from cross connections with non-potable liquids or submerged freshwater inlets (NAVMED P-5010, Articles 1-47, 1-61 and 1-8 (3)). | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| 3. Ventilation | | |
| a. Grease filters and hoods are installed in appropriate places, are free from grease buildup and can be washed at least weekly (NAVMED P-5010, Article 1073; NAVSUPINST 4061.11). | | |
| b. Ventilation grease interceptor hoods (Gaylords) are installed in proper places and are able to be cleaned daily (NAVSUPINST 4061.11). | | |
| c. Spaces adequately ventilated to keep them free of excessive heat, steam, condensation, vapors, smoke or gases. | | |
| d. Vent ducts free of excessive grease and debris which could be a fire hazard. | | |
| 4. Lighting | | |
| a. Illumination levels adequate. | | |
| b. Lighting fixtures in food service areas shielded. | | |
| 5. Refrigeration | | |
| a. Frost build-up no more than 1/4 of an inch (NAVMED P-5010, Article 1-34). | | |
| b. Refrigeration spaces clean (NAVMED P-5010, Article 1-31). | | |
| c. One portable or built-in air measurement thermometer provided in all refrigerated storage spaces which is accurate to +/- 3°F. | | |
| d. Refrigerated spaces maintained at (NAVMED P-5010, Article 1-34): | | |
| (1) Freezers 0°F or lower. | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| (2) Chilled Bulk Storage 33-36°F. | | |
| (3) Thaw Boxes 36-38°F. | | |
| (4) Dairy Products Box 32-34°F. | | |
| (5) Milk Dispenser Cabinet 32-40°F. | | |
| (6) Reach-in Refrigerator 34-40°F. | | |
| e. Interior safety release latches installed and operable in all bulk refrigeration and freezer units (NAVSUPINST 4061.11). | | |
| 6. Serving Lines and Salad Bars | | |
| a. Serving line areas clean. | | |
| b. Functional sneeze shields installed on serving lines and salad bars (NAVMED P-5010, Article 1-40). | | |
| c. Serving line inserts heatable to a minimum of 140°F (NAVMED P-5010, Article 1-40). | | |
| d. Salad bars capable of being maintained at 40°F or below (NAVMED P-5010, Article 1-40). | | |
| 7. Milk Dispensers and Holding Cabinets | | |
| a. Bulk milk dispenser and holding cabinets capable of being maintained at 32-40°F (NAVMED P-5010, Article 1-21). | | |
| b. Dispenser and holding cabinets have accurate temperature gages or thermometers. | | |
| c. Dairy box capable of being maintained at 33-34°F (NAVMED P-5010, Article 1-34). | | |
| 8. Ice Machines | | |
| a. Ice compartment drains are aligned to the deck drains with an air gap (NAVMED P-5010, Article 1-36). | | |

Inspector: _____ Date: _____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| b. Ice scoop, stored handle up, in a covered and freely draining bracket outside ice storage compartment or inside the ice machine on a bracket above the highest level of the ice (NAVMED P-5010, Article 1-36). | | |
| 9. Manual Dishwashing | | |
| a. Utensils move from dirty to clean side of wash area without risk of cross contamination by handling or splashing. | | |
| b. A three compartment sink installed for washing pots, pans and utensils. | | |
| c. Booster heater installed and functional. | | |
| d. Temperature gage installed or thermometer used to monitor wash and rinse temperatures. | | |
| e. Wash water temperature ranges between 95-125°F. | | |
| f. Final rinse water temperature reaches at least 170°F. | | |
| g. Long-handled dip baskets available. | | |
| 10. Dishwashing Machine | | |
| a. Center and end curtains installed. | | |
| b. Temperature gages accurate to +/- 3°F. | | |
| c. Multiple tank conveyor dishwashing machine meets following requirements (NAVMED P-5010, Article 1-9): | | |
| (1) Wash temperature 150-160°F for 7 seconds. | | |
| (2) Rinse temperature 160-180°F for 7 seconds. | | |
| (3) Final rinse temperature 180-195°F with a conveyor speed of 15 feet per minute at 15 - 25 psi or as specified in the machine technical manual. | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| d. Operating instructions posted on, or conspicuously near, the machine (OPNAVINST 5100.19, Section V. 16). | | |
| **C. LIVING SPACES** | | |
| 1. Bunks and lockers neat and in usable condition and bunk curtains installed (OPNAVINST 4700.29). | | |
| 2. Plumbing fixtures installed in washrooms, showers and water closets, including shower heads and soap dishes and other necessary items (OPNAVINST 4700.29). | | |
| 3. Prescribed deck covering installed (OPNAVINST 4700.29). | | |
| 4. Adequate furniture and equipment installed to provide reasonable comfort, relaxation and entertainment in lounge areas (OPNAVINST 4700.29). | | |
| 5. Berthing spaces are clean, adequately ventilated and well illuminated (OPNAVINST 9640.1 and NAVMED P-5010, Chapter 2). | | |
| 6. Drinking fountains are of the jet-angle type with clean bowls, orifices and orifice guards (NAVMED P-5010, Chapter 2). | | |
| 7. No Category I flammables, combustibles or aerosol containers stored in berthing spaces (NSTM 670). | | |
| 8. Sinks, urinals and commodes are clean, odor free and operable (NAVMED P-5010, Chapter 2). | | |
| 9. The temperature of the hot water supplied for personal use of the crew does not exceed 130°F (NSTM 533). | | |
| 10. Temperatures in berthing and messing spaces do not exceed 80°F (OPNAVINST 9640.1). | | |
| 11. Temperatures in living, sanitary, messing, medical, control spaces, and normal working stations are not lower than 65°F (OPNAVINST 9640.1). | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| 12. There are separate sleeping quarters for males and females (OPNAVINST 1300.17). | | |
| **D. FRESHWATER** | | |
| 1. Surveillance | | |
| a. Halogen residual present (NAVMED P-5010, Chapter 6, Article 52). | | |
| b. Bacterial analysis obtained from points representative of the entire distribution system (NAVMED P-5010, Chapter 6, Article 53). | | |
| c. Ice machines tested for bacterial contamination (NAVMED P-5010, Chapter 6, Article 53). | | |
| d. Potable water processed or obtained from an approved source (NAVMED P-5010, Chapter 6, Article 54). | | |
| 2. Bromination System and Equipment (when applicable) | | |
| a. Brominators are properly installed and functional (NAVMED P-5010, Chapter 6, Article 21). | | |
| b. Warning plate installed next to unit (NSTM Chapter 533, Section 3.1.3.2.3 and Figure 533-5). | | |
| c. Four foot hose with quick opening valve and vacuum breaker installed nearby (NSTM Chapter 533, Section 3.1.3.2.2). | | |
| d. Bromine cartridges stored in dry, clean, well-ventilated storeroom (NSTM Chapter 533, Section 3.1.3.2.1). | | |
| e. Locker or bin has label plate inscribed "Bromine Cartridges" (NSTM Chapter 533, Section 3.1.3.2.1). | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| f. Storage locker has warning plate (NSTM Chapter 533, Section 3.1.3.2.1 and Figure 533-6). | | |
| 3. Chlorination System and Equipment | | |
| a. HTH stored in a metal box with three 1/4" holes, painted gray and labeled with red letters on white or black background "HAZARDOUS MATERIAL, CALCIUM HYPOCHLORITE" (OPNAVINST 5100.19, Chapter 23). | | |
| b. HTH lockers not installed in machinery space, flammable liquids store room, berthing space or oil and water test lab areas (OPNAVINST 5100.19, Chapter 23). | | |
| 4. Sounding Tubes | | |
| a. Equipped with screw caps (NAVMED P-5010, Article 6-8.3). | | |
| b. Screw caps have keeper chains attaching them to sounding tubes (NAVMED P-5010, Article 6-8.3). | | |
| c. Padlocks secure caps (NSTM, Chapter 533, Section 2.3.6). | | |
| d. Label plates present (NAVMED P-5010, Article 19.1). | | |
| e. Caps color coded dark blue (NAVMED P-5010, Article 19.1). | | |
| 5. Potable Water Hoses | | |
| a. New hoses disinfected with solution not less than 100 ppm FAC for at least 2 minutes (NSTM, Chapter 533, Section 3.3.3). | | |
| b. Labeled "Potable Water Only" at 10 foot intervals (NAVMED P-5010, Article 6-19 and NSTM Chapter 533, Section 2.1.3). | | |
| c. End couplings color coded dark blue (NAVMED P-5010, Article 6-19). | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| d. Stored with ends capped or coupled together (NSTM, Chapter 533, Section 2.1.3). | | |
| e. Hoses not used for any other purpose (NAVMED P-5010, Article 6-8 and NSTM Chapter 533, Section 2.1.3). | | |
| 6. Potable Water Hose Lockers | | |
| a. Located at least 18 inches off deck and hose disinfecting instructions posted in a conspicuous location in the hose storage areas (NAVMED P-5010, Article 6-8 and NSTM 533, Section 2.1.3). | | |
| b. Padlocked, vermin proof and labeled "Potable Water Hose" (NAVMED P-5010, Article 6-8 and NSTM 533, Section 2.1.3). | | |
| 7. Potable Water Receiving Connections | | |
| a. Located at least 18 inches off deck, are not cross connected with any non-potable waterline or system and are turned down to protect against contamination (NAVMED P-5010, Article 6-8 and NSTM 533, Section 2.1.2). | | |
| b. Conspicuously designated by warning plate "Potable Water Only", closed with screw cap when not in use, and cap has keeper chain attached to riser (NAVMED P-5010, Article 6-8 and NSTM 533, Section 2.1.2). | | |
| c. Valve handwheel color coded dark blue (NSTM 505). | | |
| 8. Cross Connections | | |
| a. Potable water connections to the following equipment provided with either an air gap of at least two supply pipe diameters, or a vacuum breaker backflow preventer installed at least six inches above the maximum potable fill level (NSTM, Chapter 533, Sections 2.3.3.1 and 2.3.5.2): | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| (1) X-ray and photo developing equipment and associated chemical mixing tanks. | | |
| (2) Laundry washing machines. | | |
| (3) Diesel engine cooling jackets. | | |
| (4) Garbage disposals. | | |
| (5) Gaylord hood automatic washdown system (vacuum breaker installed upstream from detergent injector) (GEN SPECS, Section 532b3) if applicable. | | |
| (6) Steam tables, steam kettles, potato peelers, sinks and other food service equipment. | | |
| (7) Bridge/helicopter control tower window washer tanks. | | |
| (8) Other equipment containing non-potable liquids. | | |
| b. Continuous pressure backflow preventer with intermediate vent provided wherever a permanent or hose connection is made below the overflow level of equipment containing non-potable liquids and a manual or automatic cutout valve is installed downstream of the vacuum breaker (GEN SPECS, Section 532bl) if applicable. | | |
| c. Reduced pressure backflow preventer provided wherever a permanent or hose connection is made to equipment or a system that could subject the potable water system to a positive pressure such as the chill water expansion tank (GEN SPECS, Section 532bl) if applicable. | | |
| d. Sink and space faucets with standard 3/4 inch hose threads equipped with a hose connection vacuum breaker (NSTM 533, Section 2.3.5.1). | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| e. Laboratory and shop (photo and battery shop) sinks with non-standard hose connections equipped with either an integral vacuum breaker or hose vacuum breaker (NSTM 533, Section 2.3.5.2). | | |
| f. Hose connections to the potable water system disconnected when not in use (NSTM 533, Section 2.3.4). | | |
| g. Label plate having the following wording in one inch high red letters installed in a conspicuous location near each hose connection to the potable water system: "CAUTION DISCONNECT HOSE WHEN NOT IN USE" (NSTM 533, Section 2.3.4). | | |
| h. Two check valves installed in the potable water supply to carbonated beverage dispensers with no copper, brass or bronze pipe, valves or fittings downstream of check valves (GEN SPECS 532, Section 532bl) if applicable. | | |
| **E. CHT SYSTEM** | | |
| 1. Personal Hygiene | | |
| a. Handwashing facilities located in or near pump rooms or comminutor spaces (OPNAVINST 5100.19, C1504.1.(6) and NSTM 593, Section 4.2.14.7). | | |
| b. Signs posted in CHT spaces near each sewage pump controller requiring hand washing with soap and water prior to leaving area, and prohibiting eating, drinking and smoking while work is in progress (NAVMED P-5010, Chapter 7, Article 19(6) and NSTM 593). | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| 2. Pump Room Safety | | |
| a. Slightly negative pressure exhaust ventilation with duct installed 9 inches from the deck in CHT pump rooms (NAVMED P-5010, Chapter 7, Article 22 and NSTM 512). | | |
| b. Indicator light installed outside compartment indicating ventilation system is operating (NAVMED P-5010, Chapter 7, Article 22). | | |
| c. Two emergency escape breathing devices (EEBD) placed in each CHT pump room (NAVMED P-5010, Chapter 7, Article 22 and NSTM 593, Section 4.2.21.3.1.4). | | |
| d. Placard installed at the access of each CHT pump room outlining safety precautions to be followed if a sewage spill occurs (NAVMED P-5010, Chapter 7, Article 22d). | | |
| e. Warning sign posted near each sewage pump controller: "CAUTION, WHEN HIGH LEVEL ALARM SOUNDS DIVERT UPPER DECK DRAINS OVERBOARD AND CLOSE ISOLATION VALVES ON DRAINS BELOW OVERBOARD DISCHARGE" (GEN SPECS 593a) if applicable. | | |
| f. Audible and visual alarms for high and low sewage tank levels wired to signal in a continuously manned station and in the CHT pump room (NSTM 593, Section 4.2.5 and GEN SPECS 593a). | | |
| 3. Ship-Shore Transfer | | |
| a. Sewage fuser properly labeled (GEN SPECS 593a). | | |
| b. Label plates at each deck discharge connection with warning against disconnecting sewage hose while it is pressurized, hose hook-up/disconnect procedures and sanitary and health precautions (GEN SPECS 593a) if applicable. | | |
| 4. Surveillance | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| a. Removable drip pans installed beneath comminutors mounted off deck, or a two to four inch coaming around deck-mounted comminutors to aid in detection of possible leakage (NSTM 593, Section 4.2.14). | | |
| b. Removable drip pans provided in health sensitive areas under valves and take-down joints to detect possible leakage (NSTM 593, Section 4.2.14). | | |
| 5. General Requirements | | |
| a. CHT space capable of containing sewage spills (NSTM 593, Section 4.2.14 and GEN SPECS 593a). | | |
| b. Proper color-coding of handwheels, valves, fusers and caps (NSTM 505, Table 505-16). | | |
| c. Functional eductor or sump pump installed in CHT spaces (NSTM 593, Section 4.2.14). | | |
| **F. LAUNDRY AND DRY CLEANING** | | |
| 1. Laundry and dry cleaning facilities are operational (OPNAVINST 9640.1). | | |
| 2. Adequate ventilation available (NAVMED P-5010, Article 2-40.1). | | |
| 3. Fixtures and appliances connected to prevent backflow or cross-connection with the potable water supply (NAVMED P-5010, Article 2-37.3). | | |
| 4. Adequate drinking water furnished by drinking fountain (NAVMED P-5010, Article 2-37.4). | | |
| 5. Rooms or spaces designed, and machines and equipment arranged, so that a separate flow of clean and soiled garments will be maintained through the laundry or cleaning process (NAVMED P-5010, Article 2-37.8). | | |

Inspector: _____ Date:_____

**SAMPLE PRE-COMMISSIONING HABITABILITY**
**INSPECTION CHECK LIST FOR NEW CONSTRUCTION SHIPS (Cont'd)**

Compartment Number: _____ Division:_____

| | YES | NO |
|---|---|---|
| 6. All steam and hot water pipes are insulated with approved (non-asbestos) lagging (NAVMED P-5010, Article 2-40.2). | | |
| 7. Adequate lighting levels are provided (NAVMED P-5010, Article 2-40.3). | | |
| 8. Automatic safety devices on all equipment clearly identified and operational (NAVMED P-5010, Article 2-40.7). | | |
| 9. Guard rails are installed for ironers, compressors, and other dangerous pieces of equipment. Drive shafts, exposed belts, and gears should be enclosed (NAVMED P-5010, Article 2-40.8). | | |

Inspector: _____ Date:_____

(This Page Intentionally Left Blank)

# VOLUME I

# CHAPTER 4

# TRIALS

REFERENCES.

(a) OPNAVINST 9080.3 - Procedures for Tests and Trials of Navy Nuclear Powered Ships Under Construction, Modernization, Conversion, Refueling and Overhaul
(b) COMNAVAIRLANTINST 9080.2 - Conduct of Trials and Inspections Incident to Construction, Overhauls or Availabilities of Nuclear Powered Aircraft Carriers (CVN)
(c) COMNAVAIRLANT/COMNAVAIRPACINST 3500.20 - Aircraft Carrier Training and Readiness Manual
(d) OPNAVINST 4700.8 - Trials, Acceptance, Commissioning, Fitting Out, Shakedown and Post Shakedown Availability of U.S. Naval Ships Undergoing Construction or Conversion
(e) COMNAVSURFLANT/COMNAVSURFPACINST 3502.2 - Surface Force Training Manual
(f) INSURVINST 4730.2 - Trials and Material Inspections of Submarines
(g) NAVSEA S9086-C4-STM-000 - NSTM Chapter 094 (Trials)
(h) INSURVINST 4730.1 - Trials and Inspections of Surface Ships
(i) NAVSEAINST C9094.2 - Submarine Valve Operation Requirements for Builders and Post-Overhaul Sea Trial Test Dives
(j) OPNAVINST C3000.5 - Operation of Naval Nuclear Powered Ships
(k) OPNAVINST 5420.53 - General Precept for the Conduct of Trials and Material Inspections of Ships and Service Craft
(l) INSURVINST 4730.11 - Preparation of Deficiency Forms
(m) NAVSEAINST 4790.8/OPNAVINST 4790.4 - Ships' Maintenance and Material Management (3-M) Manual
(n) NAVSEA S0300-B2-MAN-010 - Supervisor of Shipbuilding, Conversion and Repair Operations Manual
(o) OPNAVINST C9210.2 - Engineering Department Manual for Naval Nuclear Propulsion Plants
(p) COMNAVSUBFOR OPORD 2000
(q) COMSUBLANTINST 5400.4/COMSUBPACINST 5400.7 - Submarine Force, U.S. Atlantic/Pacific Fleet Regulations

LISTING OF APPENDICES.

A Specific Dock Trial Test Areas
B Minimum Fast Cruise Requirements
C Listing of Tests to Be Performed During Nuclear Powered Aircraft Carrier Builder's Trials
D Listing of Tests to Be Performed During Initial Tightness Dive
E Escort Ship Capabilities for Submarine Sea Trials
F Listing of Tests to be Performed Prior to, During and Following First Dive to Test Depth
G Submarine Sea Trial Situation Report (SITREP)

4.1 PURPOSE. To identify the Trials incident to new construction, provide a brief description of each, identify unique support requirements and list specific test areas.

4.2 DOCK TRIALS.

4.2.1 Purpose. To demonstrate that major systems and equipments are ready to support Fast Cruise and Sea Trials.

4.2.2 Conduct. Dock Trials are conducted by Ship's Force in accordance with reference (a) for nuclear powered ships and in accordance with the Builder's Contract for non-nuclear ships. Normally a period of one day is assigned for integrated Dock Trials, tests and evolutions.

4.2.3 Scheduling. Dock Trials must take place prior to crew certification for submarines, prior to Fast Cruise for Nuclear Powered Aircraft Carriers and prior to the first Ship's Force underway period for non-nuclear surface ships. Dock Trials should be scheduled by mutual agreement between the ship, shipbuilder and the Supervising Authority. Dock Trials should be completed with adequate time allowed to correct deficiencies.

**NOTE: THE SHIPBUILDER/SUPERVISING AUTHORITY MAY DESIRE TO CONDUCT "MACHINERY CHECKOUT" OR SYSTEM CHECKS PRIOR TO DOCK TRIALS IN ORDER TO TEST SHIP SYSTEMS. COMPLETION OF REPAIRS AND MODIFICATIONS ARE NOT REQUIRED EXCEPT FOR SYSTEMS THAT DIRECTLY SUPPORT THE TESTS. IN ORDER TO SUPPORT THESE EVOLUTIONS, CLOSE LIAISON BETWEEN THE PROSPECTIVE COMMANDING OFFICER (PCO)/OFFICER IN CHARGE (OIC) AND THE SHIPBUILDER/SUPERVISING AUTHORITY WILL BE REQUIRED.**

4.2.4 Specific Test Areas. There are specific tests which relate to both system and ship safety which must be conducted in preparation for Fast Cruise and Sea Trials. Appendix A of this chapter lists the minimum alongside tests to be conducted by Ship's Force during Dock Trials. References (b) and (c) provide additional information for Nuclear Powered Aircraft Carriers.

4.3 FAST CRUISE.

4.3.1 Purpose. To train the crew and determine the crew's ability to safely take the ship to sea.

4.3.2 Conduct.

a. Fast Cruise is conducted in accordance with references (a), (d), and (e).

b. In addition to the normal underway routine, the Commanding Officer (CO) or OIC shall have all equipment operated to check for proper operation and to determine the state of training of the crew. Fast Cruise shall, as far as is practical, simulate at-sea operating conditions. It is to be conducted by Ship's Force and is to be unhampered by construction or repair work or by movement of industrial activity personnel through the ship. Neither the shipbuilder nor the Supervising Authority shall schedule any trials, tests or other work on the ship during this period.

c. The ship will be operated as if underway, simulating the various evolutions required for safe operation. Each underway watch section shall be exercised in the evolutions which are normally performed on a section basis. Check out all communication systems during each evolution. Ensure that each is in proper working order and that, where duplicate systems exist, a priority system is designated.

d. (Submarines only) The Fast Cruise should be a minimum of four days in duration for nuclear ships and two days for non-nuclear submarines. It should be completed within a five-day period. It should end not more than three days prior to underway trials. Normally, the ship will go to sea for underway trials within a day after completion of Fast Cruise. Should the 72 hour period be exceeded, the Type Commander (TYCOM) may direct an additional Fast Cruise.

4.3.3 Scheduling. Fast Cruise is scheduled immediately prior to underway trials. Approximately 7 days prior to the first underway trial, the Supervising Authority with the concurrence of the CO/OIC notifies the Ship Program Manager that the ship is ready to commence Fast Cruise (Volume I, Chapter 2, paragraph 2.4.1.v of this manual refers).

4.3.4 Specific Test Areas. Appendix B of this chapter lists the minimum evolutions and drills to be conducted during Fast Cruise. Additional drills and evolutions are at the discretion of the PCO or OIC. References (b) and (c) provide additional information for Nuclear Powered Aircraft Carriers, reference (e) for non-nuclear surface ships.

4.3.5 Reports (Nuclear Powered Ships only). The Supervising Authority with concurrence from the PCO/OIC reports the successful completion of Fast Cruise using the format of Volume I, Chapter 2, Appendix $B_7$ of this manual (submarines only). Volume I, Chapter 2, paragraph 2.4.1 of this manual refers.

4.4 SEA TRIALS.

4.4.1 General.

a. The policies, procedures and responsibilities pertaining to Sea Trials for ships undergoing construction are set forth with reference (d). References (a), (f), (g) and (h) augment the basic instruction.

b. Sea Trials for the various platforms undergoing construction differ in complexity, conduct and scope of Ship's Force involvement. Non-nuclear platforms such as the DDGs or LHDs go through Builder's Trials (BT) which for the most part are conducted with little to no involvement by Ship's Force. Industrial activity employees take the ship to sea and perform the majority of system/equipment testing. Paragraph 4.4.2 of this chapter provides additional information concerning BTs.

c. Nuclear powered ships' Sea Trials, however, are much more orientated to Ship's Force involvement. Ship's Force is responsible for taking the ship to sea and operating all shipboard equipment. The terms Alpha Trial, Bravo Trial, Charlie Trial, Combined Trial (CT) and Guarantee Material Inspection (GMI) are most often associated with submarine Sea Trials whereas Nuclear Powered Aircraft Carriers undergo BTs prior to Acceptance Trials (AT). Subsequent paragraphs provide amplifying information concerning these trials.

d. Underway trials following construction, particularly initial submerged and test depth trials for submarines, must be undertaken with the knowledge that the crew lacks recent experience operating as a unit and that the ship's structure and fittings have not been tested in an at-sea environment. All tests and procedures must be conducted carefully and methodically. In the case of submarines, systems and components designed to operate at test depth should not be exercised at test depth for the sole purpose of proving the design. They should be operated at the deepest depth at which they might be used. Trials and tests which are inherently hazardous should not be conducted. For example, a submarine's hovering system should not be demonstrated at test depth. Reference (i) provides additional information concerning the testing of submarine seawater systems during underway Sea Trials. Sea Trials following new construction are normally conducted with a significant number of "riders". These riders represent Naval Sea Systems Command (NAVSEA), TYCOM, Shipbuilder and Board of Inspection and Survey (INSURV) personnel onboard to observe various tests and trial evolutions. The ship's normal loadout of Lithium Hydroxide canisters, Emergency Air Breathing (EAB) masks, Steinke Hoods/Submarine Escape Immersion Ensemble suits (as applicable), and Lithium Hydroxide curtains is not sufficient to support this increase in personnel. Therefore, four additional Lithium Hydroxide canisters, one EAB mask, one Steinke Hood/Submarine Escape Immersion Ensemble suit (as applicable), and four Lithium Hydroxide curtains must be carried for each rider exceeding normal crew manning. Lithium Hydroxide canisters, EABs, Steinke Hoods/Submarine Escape Immersion Ensemble suits (as applicable), and Lithium Hydroxide curtains are to be obtained from the industrial activity.

e. The following general conditions apply:

(1) A shipbuilder generated, Supervising Authority/Ship Program Manager/ TYCOM approved agenda is required for each Sea Trial.

(2) All trial periods must be organized such that each member of the crew has an opportunity to get six uninterrupted hours of sleep during each 24 hour period. Sea Trial elements which can be accomplished by a normal watch section may be conducted concurrently with crew rest periods.

(3) Sea Trials should normally be scheduled to allow at least three weeks between CT/AT and the scheduled delivery date.

(4) The prerequisites for Nuclear Powered Aircraft Carrier and submarine Sea Trials are a Pre-Critical Reactor Safeguard Examination (RSE), Crew Certification, Dock Trials and Fast Cruise.

(5) Each submarine watch section shall be provided with approximately two hours experience submerged at moderate speeds prior to the deep dive or full power run.

(6) Critical operation of reactors while naval nuclear powered ships are in a Naval or private industrial activity will be governed by reference (j). Prior to delivery, permission to conduct critical reactor plant operations must be obtained by the Supervising Authority from NAVSEA Nuclear Propulsion Directorate (08).

(7) During inspections, deficiencies should be limited to those items for which a correction is mandatory to ensure safe operation during Sea Trials.

(8) At the start of Fast Cruise the ship should be ready in all respects for the commencement of Sea Trials with the exception of the additional training the crew will receive during Fast Cruise.

(9) Inspectors must determine that all work/testing necessary to support Sea Trials has been completed or identified for completion prior to commencement of Fast Cruise including the following:

(a) All ship systems which affect safe operation during Sea Trials must be operable.

(b) All work necessary for safe operation of the ship during Sea Trials has been satisfactorily completed and tested. Included must be a check for any special configuration or installations ensuring that they have been authorized by the proper authority (NAVSEA and TYCOM), that their impact has been fully assessed and that the Sea Trial agenda addresses these impacts or limitations.

(10) NAVSEA and the Supervising Authority are expected to properly discharge their responsibilities for quality assurance and control of authorized industrial work (e.g., it is not necessary for the Immediate Superior in Command (ISIC) inspections to inspect the quality of the pressure hull radiographs or other nondestructive test records of the industrial activity).

(11) Following completion of the required training and material readiness certification, the CO/OIC must keep the ISIC fully informed of any changes in personnel, training and/or material status which could affect the validity of certification. Prompt notification is required to permit revision of Operational Orders and services required.

(12) Sea Trial Situation Reports (SITREP) (Submarines only). Ships executing Sea Trials associated with a new construction program shall submit daily SITREPs using the message format in Appendix G in accordance with the SITREP guidelines contained in Volume II, Part I, Chapter 3, paragraph 3.6.8.3.9 of this manual.

4.4.2 Builder's Trials. BTs conducted by a private shipbuilder are normally comprised of a Builder's Dock Trial (BDT) and one or more Builder's Sea Trials (BST). Some DDGs are currently undergoing three BSTs. The first BST, referred to as an Alpha Trial by the DDG community, is primarily a propulsion plant trial. The second BST, referred to as a Bravo Trial, primarily covers Combat System evolutions and the third BST is the AT. While the actual content of BSTs will be dependent upon the platform, the primary purpose is still the same; the validation of ship's equipment and systems in preparation for Charlie Trials/AT. Appendix C of this chapter provides a sample listing of tests to be performed during a Nuclear Powered Aircraft Carrier's BT.

4.4.3 Alpha Sea Trial (Submarines only). A submarine's first underway period primarily conducted for propulsion plant testing and the initial tightness dive. (First ship of each class normally conducts a dive to Test Depth during this trial).

a. Testing. The tests and evolutions to be carried out while on the surface en route to the test dive area, just prior to the initial dive and during the initial dive are identified in Appendix D of this chapter.

b. Restrictions. The following rules apply to the conduct of trials and tests associated with ship construction, Ship Program Manager sponsored Trials/Tests or any other situation where the ship is requested to conduct trials or tests:

(1) No test or trial event shall be conducted that requires crew intervention to avoid exceeding normal operating limits. Trial agendas will be based on the expectation that the ship will remain within normal operating limits of the Submerged Operating Envelope (SOE) and at angles less than 30 degrees.

(2) The trial director must be prepared to project whether the next event might exceed normal operating limits based on the empirical results of the previous event. A run that is predicted to exceed normal operating limits should be deleted along with the more demanding runs of that sequence.

(3) Any run which will result in exceeding normal limits of the SOE or 30 degree angles but which is essential to provide adequate test data must be specifically approved by the TYCOM. The test/trial sponsor will obtain this permission.

(4) A violation of the SOE limit or exceeding a 30 degree angle, not previously approved, shall be reported by unit Situation Report (SITREP). No further testing or trials shall be conducted until TYCOM concurrence is obtained.

(5) Specific written approval by the TYCOM is not required to operate outside the upper limits of the SOE, i.e., shallow and fast, while conducting the following operations during Sea Trials or tests in accordance with an agenda approved by the ISIC, Ship Program Manager or higher authority:

(a) Conducting full power runs or cavitation curves.

(b) Ship Program Manager sponsored acoustic trials in accordance with an approved acoustic trial agenda.

(6) The first underway will be limited in scope. The initial tightness dive will be a deliberate, planned, step-by-step evolution as defined in Appendix D of this chapter, using conservative angles and moderate speed. The maximum water depth for this dive shall be 400 feet, as prescribed by Appendix D of this chapter.

c. Escort.

(1) The submarine shall be accompanied by an escort properly equipped with sonar communication equipment. The escort ship must have the capabilities identified in Appendix E of this chapter. Specifically an escort is required for:

**NOTE: FOR ALPHA SEA TRIAL, A BACK-UP ESCORT WILL BE ASSIGNED AND READY IN CASE OF FAILURE OF THE PRIMARY ESCORT.**

(a) Initial tightness dive after construction and the first dive to any deeper depth.

(b) Initial deep dive after construction.

(c) Emergency Main Ballast Tank (EMBT) blow test under the following conditions:

- Blow for first time from each depth. Trial agenda will specify depths.
- Any blow from greater than 400 feet. Rationale is to give submarine added protection to prevent interference from any surface contact.

**NOTE: IN ALL CASES, HULL STRENGTH/TIGHTNESS AND VALVE OPERATIONS WILL HAVE BEEN TESTED TO A DEPTH EQUAL TO OR GREATER THAN EMBT BLOW DEPTH BEFORE TESTING EMBT BLOW SYSTEM.**

(d) The second and subsequent underway periods if major hull and system work has been accomplished since the last Sea Trial.

(2) Alternate Escort. If a surface ship meeting the requirements of Appendix E of this chapter is not available, then a submarine with the required capabilities will be assigned. In any event, each situation must be examined on a case basis and approval by the TYCOM must be obtained to conduct the initial tightness or test depth dives.

(3) When an escort ship is other than a submarine, an officer qualified in submarines (Gold Dolphins) must be embarked during the escort duty.

(4) Assignment of Deep Submergence Rescue System (DSRS). A DSRS consisting of a designated Deep Submergence Rescue Vehicle (DSRV) and a DSRV support ship, will be placed in a modified alert status at the beginning of those Sea Trials requiring an escort for:

(a) Ship's initial tightness and deep dive events.

(b) Subsequent Sea Trials until the completion of the initial dive to design test depth.

(c) If, in the TYCOM's judgement, a Sea Trial requires an escort due to major hull cuts, etc., the TYCOM shall obtain Ship Program Manager concurrence when determining the need for escort/DSRS services. The ship conducting Sea Trials will notify Commander, Submarine Development Squadron Five and Commander Naval Sea Systems Command (COMNAVSEASYSCOM) when DSRS is no longer required due to completion of the events necessitating the alert status or due to delays in completing Sea Trials.

(d) The cognizant shipyard activity and Commander Submarine Force Atlantic/Commander Submarine Force Pacific shall notify COMNAVSEASYSCOM and Commander, Submarine Development Squadron Five 30 Days prior to the DSRS need date. All changes in the requested modified alert date will be immediately identified to COMNAVSEASYSCOM and Commander, Submarine Development Squadron Five. Sample messages in Volume II, Part I, chapter 3, Appendices BM and CP of this manual.

(e) Commander Submarine Force Atlantic/Commander Submarine Force Pacific shall identify the DSRV mother submarine in the tasking message. The TYCOM shall ensure Airport/Seaport verification checks are current or accomplished to support DSRV activation.

d. Reporting Criteria. The Supervising Authority is responsible for reporting the satisfactory completion of Alpha Sea Trial to the Ship Program Manager. Volume I, Chapter 2, Appendix C of this manual refers.

4.4.4 Bravo Sea Trial (Submarines only). Bravo Sea Trial is generally the submarine's second underway period and first dive to Test Depth.

**NOTE: THE FIRST SHIP OF EACH CLASS NORMALLY CONDUCTS ITS FIRST DIVE TO TEST DEPTH DURING ALPHA TRIAL.**

a. Testing. The tests and evolutions to be carried out following the initial tightness dive and prior to the deep dive, during the deep dive, submerged following the deep dive, and on the surface following the deep dive, are identified with Appendix F of this chapter.

b. Restrictions. As specified in paragraph 4.4.3.b of this chapter.

c. Escort. As specified in paragraph 4.4.3.c of this chapter.

d. Reporting Criteria. With the exception of reporting the deficiencies during the trial, reporting of the completion of Bravo Trial is not required. Daily SITREPs to the Supervising Authority and the Supervising Authority's message concerning the completion of all trials (Volume I, Chapter 2, Appendix D of this manual refers) satisfies the reporting requirements.

4.4.5 Charlie Sea Trial (Submarines only). Charlie Sea Trials are conducted prior to CT. Bravo Trial retest items are also included in this trial. The standard restrictions and escort requirements as specified per paragraphs 4.4.3.b and 4.4.3.c of this chapter apply.

4.4.6 Acoustic Trials (Platform and Radiated) (Submarines only). New construction acoustic trials, performed by the shipbuilder, are accomplished to determine, under various conditions of operation, the radiated and platform acoustic signatures of the submarine, the controlling noise offenders including those which are speed dependent, and whether or not the submarine meets its underway noise objectives. Proper operation of systems/components and the use of proper personnel quieting techniques is vital for successful acoustic measurements. Acoustic trials performed by Naval Surface Warfare Center (NSWC) are used to establish the ship's baseline signature for normal operating conditions by performing independent measurements under preset conditions of speed, depth, aspect angle, and machinery line up. It is imperative that Ship's Force understand that this trial will determine its future operating conditions during various "patrol quiet" conditions.

4.4.7 Shock Trials. Shock Trials are designed to test the survivability characteristics of a ship under deliberate and controlled conditions. Normally scheduled for the first ship of a class just before Post Shakedown Availability (PSA); Shock Trials satisfy Congressionally mandated Live Fire Test and Evaluation requirements. Ship Program Managers are responsible for the development of a management plan for the conduct of Shock Trials.

4.4.8 Acceptance Trials/Combined Trials/Final Contract Trials/Guarantee Material Inspection.

a. Reference (d) tasks the INSURV with conducting an independent verification of the readiness of a newly constructed ship prior to its acceptance into Naval Service. Reference (k) states that the procedures for conducting trials and inspections shall be specified by the President, INSURV. References (f) and (h) provide those procedures for submarines and surface ships respectively. References (f) and (h) are augmented by reference (a) in their application to nuclear powered ships. References (l) and (m) provide detailed information concerning the documentation of deficiencies. In addition, each Supervising Authority, TYCOM, the Naval Ships' Technical Manual (NSTM) and reference (n) all provide additional information concerning AT/CT/GMI/Final Contract Trials (FCT). TYCOM directives are identified in the applicable TYCOM 5215 Notice.

b. Prior to the acceptance and delivery of a new ship, all machinery, electronics and weapons systems installed shall be subjected to ATs to determine that the installations are capable of meeting performance specifications. Depending upon the platform type these trials are referred to as either ATs, or CTs. This independent verification of the ship's readiness for acceptance and recommendation for fleet introduction, as specified in reference (d), is the responsibility of the President, INSURV.

c. These trials are generally two part evolutions. There is an underway portion during which time the INSURV observes the performance of the ship and all equipment and systems. Upon completion of the underway portion, trial board designated equipment and associated components are disassembled for post trial examination (the open and inspect evolution). References (f) and (h) provide amplifying information concerning this issue.

d. CTs, usually the norm for submarines, is a combination of ATs and FCTs. The AT for non-submarine platforms results in a conditional acceptance primarily based on the fact that the ship still requires fitting out. Submarines go through the fitting out period during the construction phase which produces a completed ready for sea vessel at delivery. The standard restrictions and escort requirements as specified per paragraphs 4.4.3.b and 4.4.3.c of this chapter apply.

e. FCTs are conducted after the ship has been fully equipped, armed, made complete and ready for service. These trials are normally held just prior to PSA and prior to the end of the guarantee period. Their objective is to determine if there are any defects, failures or deterioration, other than that due to normal wear and tear, directly related to shipbuilder fault which have not been corrected or resolved. The scope of FCTs is essentially the same as AT.

f. A GMI is a material inspection, conducted on submarines prior to PSA by an INSURV in accordance with reference (f).

g. INSURV reports from previous ships as held by the Supervising Authority provide familiarity with problems and corrective actions already taken. In addition, these reports provide a baseline for conducting shipboard inspections and generating inputs for the PCO's monthly progress reports.

(This Page Intentionally Left Blank)

## APPENDIX A

## SPECIFIC DOCK TRIAL TEST AREAS

| Test Area | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AOE | CVN | DDG | LHD | LPD | LSD | MHC | SSN |
| 1. Check all sound powered/interior communications circuits between all stations. | X | X | X | X | X | X | X | X |
| 2. Test all alarms, i.e., General Quarters, Collision, etc. | X | X | X | X | X | X | X | X |
| 3. Test each indication on Ballast Control Panel. | | | | | | | | X |
| 4. Test whistle. | X | X | X | X | X | X | X | X |
| 5. Check emergency lights. | X | X | X | X | X | X | X | X |
| 6. Operate all hydraulic plants using each installed pump. | X | X | X | X | X | X | X | X |
| 7. Conduct a complete air charge using only ship's compressors. | | | | | | | | X |
| 8. Conduct a normal battery charge using only ship's power and equipment. | | | | | | | | X |
| 9. Conduct low pressure blow of all MBTs. Thereafter conduct dockside operation portion of URO MRC 022. | | | | | | | | X |
| 10. Flood sanitary tanks and then blow/pump them. | | | | | | | | X |

| Test Area | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| 11. Operate each main vent valve in hand and power. Following operation, with vent valves shut, conduct a controlled removal of MBT vent covers, one at a time, to check MBT vents for leaks. | | | | | | | | X |
| 12. Operate the outboard induction valve in hand and power. | | | | | | | | X |
| 13. Operate the diesel engine exhaust valve in hand and power. | | | | | | | | X |
| 14. Operate inboard induction valves. | | | | | | | | X |
| 15. Raise, train and lower periscopes, snorkel, radar and antenna masts and fairings. | | | | | | | | X |
| 16. Test operation of all radio transmitters and receivers using all antennas. | X | X | X | X | X | X | X | X |
| 17. Operate all radar equipment at rated conditions. | X | X | X | X | X | X | X | X |
| 18. Operate all sonar equipment at rated conditions. | | | X | | | | X | X |
| 19. Take and plot fixes using all navigation equipment and each antenna. | X | X | X | X | X | X | X | X |
| 20. Test operation of drain pump(s) from all operating locations using each bilge suction. | | | | | | | | X |

| Test Area | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| 21. Test operation of trim/ballast control/list control system and pump by pumping to and from each tank and by pumping to and from sea (from all operating locations). | X | X | X | X | X | X | | X |
| 22. Calculate and enter the diving trim compensation. | | | | | | | | X |
| 23. Test operation of portable submersible pump from each installed outlet. | X | X | X | X | X | X | X | X |
| 24. Fire waterslugs from torpedo room. | | | | | | | | X |
| 25. Fire waterslugs from weapons launch console. | | | | | | | | X |
| 26. Test magazine/pyro flooding system. | X | X | X | X | X | X | X | X |
| 27. Operate each lube oil system, including pumps, controllers, purifiers and indicators. | X | X | X | X | X | X | X | X |
| 28. Energize the Navigation System and gyrocompass; determine that they settle out; take azimuth; check all repeaters. | X | X | X | X | | X | | X |
| 29. Check fresh water system, have water samples analyzed. | X | X | X | X | X | X | X | X |
| 30. Test capstans. | X | X | X | X | X | X | X | X |
| 31. Test bow and stern planes in all modes in accordance with applicable class operating procedures. | | | | | | | | X |

| Test Area | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| 32. Operate steering system. Test normal and emergency rudder angle indicators, if applicable. | X | X | X | X | X | X | X | X |
| 33. Check alignment of periscopes, TBTs and all bearing and range repeaters. | | | | | | | | X |
| 34. Test engine order telegraphs. | X | X | X | X | X | X | X | X |
| 35. Test ABTs. | X | X | X | X | X | X | X | X |
| 36. Operate each watertight door and hatch. | X | X | X | X | X | X | X | X |
| 37. Check operation of escape hatch/scuttle fittings. | X | X | X | X | X | X | X | X |
| 38. Operate each bulkhead flapper and each inter-compartment air salvage valve. | | | | | | | | X |
| 39. Operate Signal Ejector by impulse and by hand. Demonstrate satisfactory operation of the Signal Ejector both locally and remotely by firing waterslugs and operating the hand rammer through one complete cycle. | | | | | | | | X |
| 40. Turn on and check navigation/running lights for brightness and proper lenses (to be done at night). Includes Flight Deck lighting. | X | X | X | X | X | X | X | X |
| 41. Check air conditioning, chill water, ventilation, and heating systems. | X | X | X | X | X | X | X | X |
| 42. Check underwater log. | X | X | X | X | X | X | X | X |

| Test Area | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| 43. Check operation of all 400 cycle generating equipment. | X | X | X | X | X | X | X | X |
| 44. Check out all galley, messing, and ship's service equipment. | X | X | X | X | X | X | X | X |
| 45. Check fathometer. | X | X | X | X | X | X | X | X |
| 46. Check bilge flooding alarms. | X | X | X | X | X | X | X | X |
| 47. Check dummy log. | X | X | X | X | X | X | X | X |
| 48. Check all HP and LP air system. | X | X | X | X | X | X | X | X |
| 49. Operate distilling units. | X | X | X | X | X | X | X | X |
| 50. Check out anchor windlass and brake operation. | X | X | X | X | X | X | X | X |
| 51. Check battery water system. | | | | | | | | X |
| 52. Check out atmosphere monitoring equipment, both installed and portable. | | X | | | | | | X |
| 53. Operate oxygen generator, $CO_2$ scrubbers, CO burners, and emergency air breathing system. | | | | | | | | X |
| 54. If possible, lower, train (if applicable), operate and raise secondary propulsion motor(s). | | | | | | | | X |
| 55. Ensure that all required planned maintenance to ship depth detectors is complete. | | | | | | | | X |
| 56. Operate the diesel. | X | X | X | X | X | X | X | X |
| 57. Engage and disengage the clutch. | | | X | | | | | X |

| Test Area | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| 58. Test Main Engines; Submarines jack main engines. | X | X | X | X | X | X | X | X |
| 59. Ensure 5 day supply of oxygen onboard. | | | | | | | | X |
| 60. Check out all TV monitoring systems. | X | X | X | X | X | X | X | X |
| 61. Check out SASS upper and lower trolley cars. | | X | | | | | | |
| 62. Check out small arms lockers and security devices. | X | X | X | X | X | X | X | X |
| 63. Check out all IFF equipments. | X | X | X | X | X | X | X | X |
| 64. Check out degaussing equipment (where applicable). | X | X | X | X | X | X | X | X |
| 65. Check out Hangar Bay doors. | X | X | X | X | | | | |
| 66. Check out damage control equipment. | X | X | X | X | X | X | X | X |
| 67. Inspect and operate oxygen and nitrogen systems. | X | X | | X | | X | | X |
| 68. Check out all tank level indicating systems. | X | X | X | X | X | X | X | X |
| 69. Check out Flight Deck communications. | X | X | X | X | | X | | |
| 70. Check out meteorological equipment. | X | X | | X | | X | | |
| 71. Check out graphics preparation/display equipment. | X | X | X | X | X | X | X | |

| Test Area | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| 72. Check out Weapon Systems. Check to include loading of dummy missile at each launch station, transmission of fire control signals and operation of launchers in all modes. | X | X | X | X | | X | X | X |
| 73. Operate all electrical/mechanical medical equipment. | X | X | X | X | X | X | X | X |
| 74. Inspect all compartments for proper stowage and cleanliness. | X | X | X | X | X | X | X | X |
| 75. Inspect boiler and diesel fuel oil systems. | X | X | X | X | X | X | X | X |
| 76. Test and inspect jet blast deflectors. | | X | | | | | | |
| 77. Test and inspect JP-5 fuel systems. | X | X | X | X | X | X | | |
| 78. Test and inspect all aircraft starting and handling equipment. | X | X | X | X | X | X | | |
| 79. Test and inspect aircraft landing equipment including landing signal officer equipment, arresting gear, crash barriers, as applicable. | X | X | X | X | X | X | | |
| 80. Operate all RAS equipment. | X | X | X | X | X | X | X | |
| 81. Inspect paint lockers and sprinkling systems. | X | X | X | X | X | X | X | |
| 82. Operate all accommodation ladders. | X | X | X | X | X | X | X | |
| 83. Operate all conveyors. | X | X | X | X | | X | | |

| Test Area | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| 84. Launch and raise motor whaleboat. | X | X | X | X | X | X | X | |
| 85. Operate all boats. | X | X | X | X | X | X | X | |
| 86. Test and inspect lifeboat/life raft stowage and launch equipment. | X | X | X | X | X | X | X | |
| 87. Test and inspect all elevators in all modes of operation. | X | X | X | X | X | X | | |
| 88. Test and inspect all fire fighting systems. | X | X | X | X | X | X | X | X |
| 89. Test and inspect refrigeration systems. | X | X | X | X | X | X | X | X |
| 90. Test and inspect all seawater cooling systems. | X | X | X | X | X | X | X | X |
| 91. Operate stern gate doors. | | | | X | X | X | | |
| 92. Operate boat handling cranes. | | | | X | X | X | | |
| 93. Conduct URO MRC 029. | | | | | | | | X |
| 94. Test and inspect Torpedo Handling System. | | | | | | | | X |
| 95. Test and inspect aircraft elevators. | | X | | X | | | | |
| 96. Test and inspect aircraft launching equipment including catapults. | | X | | | | | | |
| 97. Record megger readings of all antennas where meggering is permissible. (Note: This evolution is not required for PSA unless antennas/hull fittings are specifically worked during PSA.) | | | | | | | | X |

## APPENDIX B

## MINIMUM FAST CRUISE REQUIREMENTS

| Requirement | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AOE | CVN | DDG | LHD | LPD | LSD | MHC | SSN |
| 1. Make all preparations for getting underway. | X | X | X | X | X | X | X | X |
| 2. Station the maneuvering watch/sea and anchor detail. | X | X | X | X | X | X | X | X |
| 3. Station the normal underway watch (section watches). | X | X | X | X | X | X | X | X |
| 4. Simulate getting underway and return to port. (Day and Night) | X | X | X | X | X | X | X | X |
| 5. Walk through all major Sea Trial evolutions. | X | X | X | X | X | X | X | X |
| 6. Walk through the cycling of hull and back-up valves to be tested during the deep dive. | | | | | | | | X |
| 7. Exercise the reduced visibility detail. | X | X | X | X | X | X | X | X |
| 8. Spot check storage and availability of spare parts and tools. Verify adequacy of stores and provisions. | X | X | X | X | X | X | X | X |
| 9. Rig for dive and rig for surface. | | | | | | | | X |
| 10. Simulate diving and surfacing. | | | | | | | | X |
| 11. Rig for deep submergence. | | | | | | | | X |
| 12. Conduct the following emergency drills: | | | | | | | | |
| a. Fire | X | X | X | X | X | X | X | X |

| Requirement | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| b. Collision | X | X | X | X | X | X | X | X |
| c. Flooding | X | X | X | X | X | X | X | X |
| d. Toxic Gas | | | | | | | | X |
| e. Abandon Ship | X | X | X | X | X | X | X | X |
| f. Man Overboard | X | X | X | X | X | X | X | X |
| g. Submarine Escape | | | | | | | | X |
| h. Loss of AC Power | X | X | X | X | X | X | X | X |
| i. Emergency Ventilation | | | | | | | | X |
| j. Loss of Air Conditioning/ACW | | X | | | | | | X |
| k. Loss of Lighting | X | X | X | X | X | X | X | X |
| l. Loss of Interior Communications | X | X | X | X | X | X | X | X |
| m. Loss of Steering | X | X | X | X | X | X | X | X |
| n. Engine Casualty Control | X | X | X | X | X | X | X | X |
| o. Flight deck and hangar deck crash/fire drills, barricade drills, and MOVLAS drills | | X | | | | | | |
| 13. Set General Quarters. Exercise the crew at battle stations. | X | X | X | X | X | X | X | X |
| 14. Conduct communication and ECM drills. | X | X | X | X | X | X | X | X |
| 15. Conduct an air charge to all air banks. | | | | | | | | X |

| Requirement | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| 16. Bleed oxygen and ventilate ship. Ensure 5 day supply of oxygen onboard. | | | | | | | | X |
| 17. Anchor (walk-through). | X | X | X | X | X | X | X | X |
| 18. Exercise damage control party with emergency and damage control equipment. | X | X | X | X | X | X | X | X |
| 19. Operate atmosphere control equipment and take air samples. | | | | | | | | X |
| 20. Perform the minimum Fast Cruise requirements for nuclear propulsion plants contained in reference (o). | | X | | | | | | X |
| 21. Operate air conditioning plants to demonstrate ability to carry the maximum existing ship's air conditioning load or 100% capacity. | X | X | X | X | X | X | X | X |
| 22. Operate fresh water/seawater heat exchangers at sufficient load to demonstrate proper operation. | | | | | | | | X |
| 23. Simulate underway conditions, performing all evolutions and operating all equipment. | X | X | X | X | X | X | X | X |
| 24. Simulate boat transfer at sea. | X | | X | X | X | X | X | |

| Requirement | Class of Ship | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AOE** | **CVN** | **DDG** | **LHD** | **LPD** | **LSD** | **MHC** | **SSN** |
| 25. Conduct competitive and non-competitive drills and exercises such as aircraft tracking and aircraft control. | X | X | X | X | X | X | | |
| 26. Light-off main propulsion plant, shift to ship's power and run all engines with steam for a short period of time. | X | X | X | X | X | X | X | X |
| 27. Man Towing/Salvage/Fueling Stations. | X | X | X | X | X | X | X | |
| 28. Set Flight Quarters as applicable. | X | X | X | X | X | X | X | |

## APPENDIX C

## LISTING OF TESTS TO BE PERFORMED DURING NUCLEAR POWERED AIRCRAFT CARRIER BUILDER'S TRIALS

1. The following systems and components will be tested during Nuclear Powered Aircraft Carrier Builder's Trials:

   a. Auxiliaries

      Emergency Diesel Generators
      $O_2N_2$ Plants (Forward and Aft)
      Steering Gears
      Motor Driven Fire Pumps and Eductors
      Anchor Windlass
      Stores Conveyors
      Hot Water Heaters
      HP Air Compressors
      Ship Service and Control Air Compressors
      Air Filter Cleaning
      Air Conditioning/Refrigeration Systems
      Turbine Generator and Diesel Generator (Load Transfer Operations)

   b. Aviation

      Aircraft Elevators 1, 2, 3, 4
      Aircraft Starting and Servicing Power
      Boat and Airplane Crane
      Flight Deck Night Lighting
      Arresting Gear
      Aircraft Barricade
      Jet Engine Test Facility
      Elevator Doors and Hangar Bay Division Doors
      Landing Officer's Console and Windscreen
      Visual Landing Aid
      Catapults (No Load Launching)
      Jet Blast Deflectors
      Integrated Catapult Control Stations
      Hangar Bay Darken Ship Switches
      JP-5 Filling, Transfer and Service System

   c. Combat Systems

      Upper Stage Weapons Elevators
      Flight Deck Hatches
      Magazine Sprinkling and Alarms
      Lower Stage Weapons Elevator 7 Hatches
      Inspect Masts

d. Damage Control

Halon Fire Protection System
Machinery Space and Pump Rooms 2 and 3 AFFF
Diesel Driven Portable Pumps
Aqueous Potassium Carbonate System
Miscellaneous Sprinkling Systems
Electrical Driven Portable Pumps
List Control Pumps
Magazine Sprinkling and Alarms Systems
$CO_2$ Hose Reels
Hydraulically Operated Valves
Hangar Bay and Weapons Elevator AFFF
Turbine Driven Fire Pumps

e. Deck

Ship's Boats
Boat and Airplane Crane
Anchor Windlass
Sliding Padeyes
Replenishing-At-Sea Winches
Trash Burners
Mooring and Warping Capstans
Replenishing-At-Sea Support Legs

f. Electrical

Ship Service and Coolant Turbine Generators
Aircraft Elevators 1, 2, 3, 4
Emergency Diesel Generators
Aircraft Starting and Servicing Power
Steering Gear
Gyro-Compass Standby Power Supply
Anchor Windlass
Miscellaneous Alarms (Non-Navigational)
IC CKTs: BZ/JB, CX, DA, 1DL, 3DL, 4FD, 14FD
Degaussing System
General, Chemical and Collision Alarms From All Stations
Flight Deck Crash Alarms
Flight Deck Night Lighting
Navigation Lights
Hangar Bay Darken Ship Switches:
Turbine Generator and Diesel Generator Load Transfer Operations
Mooring and Warping Capstans
400 HZ MG Set Parallel Operations

g. Environmental Protection

Collection, Holding and Transfer (CHT) Dockside Pumping
CHT SYS - Switch To Holding Mode
CHT SYS - Switch To At-Sea Mode
CHT Valve Rooms 3 Thru 9 Valve Operations (4th Deck)
NOTE: All Scuppers Must Be Operated For CHT Certification

h. Main Propulsion

Shaft Seals Including Inflatable Seals

i. Medical and Dental

Brominators

j. Navigation

Steering Gear
Engine Order Telegraph
Rudder Angle Indicating System
Gyro-Compass Standby Power Supply
General Announcing System
Bridge Announcing System
Ship's Whistles
Pelorus, Signal Lights and Big Eyes
Degaussing System
Visibility - Pilot House, Bridge and Lookout Stations
Navigation Lights
AN/SRN-25 Radio Navigation
AN/SRN-9 Satellite Navigation
AN/SPS-64 Navigation Radar
AN/WRN-6 GPS
Wind Direction
DRTs and DRAI
Magnetic Compass
AN/WSN-1 Navigation System
MK 19 Compass

k. Supply

Stores Conveyors
Laundry
Dumbwaiter
Bridge Crane
Scullery

(This Page Intentionally Left Blank)

# APPENDIX D

## LISTING OF TESTS TO BE PERFORMED DURING INITIAL TIGHTNESS DIVE

1. The following tests and evolutions will be carried out on the surface en route to the test dive area and prior to the initial tightness dive:

a. Underway. Rig for dive (for Alpha Trial, rig for deep submergence is required for the initial dive). Compensate. Start-up evaporator.

b. Ship's Force instruct Sea Trial riders on the proper use of EAB masks.

c. Conduct operational test of rudder in normal and emergency modes.

d. Navigation system check. Take fixes by all electronic, celestial, and visual means and compare.

e. Check underwater log(s) using measured mile or navigational fixes to determine accuracy.

f. Check accuracy of all bearing transmitters and indicators. Compare sonar, visual and radar bearings.

g. Check operation of all radar.

h. Check all radio transmitters, receivers and electronic equipment.

i. Inspect stern tube packing gland/seals and circulating water flow.

j. Check Dead Reckoning Analyzer Indicator (DRAI), Dead Reckoning Analyzer (DRA), Dead Reckoning Tracers (DRT) and RPM indication.

k. Test fathometer(s) and compare with charted soundings.

l. Run ahead at full power long enough for temperatures to reach a stable value. After readings have stabilized, operate rudder through full throw in each direction in normal and emergency power. Time evolution and compare with design values. Check out hand modes.

m. Ahead flank to back emergency.

n. Run astern up to full power for 10 minutes or to meet the intent of a more restrictive Industrial Activity Test Form. Operate rudder through full throw in each direction in normal and emergency power (measure degrees per second travel and compare with design value).

o. Fire Control System operation. (See Note 1).

p. Check operation and accuracy of ship's gyrocompass.

q. Check operation of magazine/pyro locker flooding if not tested in industrial activity. (See Note 1).

r. Rendezvous with escort. Conduct radio and sonar communications checks. (See Note 2).

s. Test all bottomside sonar.

t. Test bow/sail and stern plane operations in all modes.

u. Flood variable tanks to computed compensation.

v. Record megger readings of all antennas where meggering is permissible. (See Notes 1 and 10).

w. Operate trim and drain pumps. (See Note 3).

x. Test variable ballast system for proper operation.

**NOTE: CONDUCT PARAGRAPHS 1 AND 3 OF URO MRC 022 (DOCKSIDE OPERATION OF EMBT BLOW SYSTEM VALVES) OR EQUIVALENT SHIPYARD TEST PROCEDURE DURING DOCK TRIALS PER APPENDIX A OF THIS CHAPTER FOR THE TEST OF THE EMBT BLOW SYSTEM. ENSURE THE REMAINING PORTIONS OF URO MRC 022, THE TEST OF THE EMBT BLOW SYSTEM, ARE COMPLETED PRIOR TO INITIAL DIVE TO TEST DEPTH ON ALPHA SEA TRIAL (INITIAL BUILDER'S SEA TRIAL).**

y. Perform a low pressure, normal and EMBT blow for as long as necessary to verify system operability. A static blow shall not be used to test the EMBT blow system.

z. Operate on the Emergency Propulsion Motor (EPM) for 10 minutes. (See Note 1).

aa. Motor generator set operation. (See Note 1).

ab. Ventilate ship. (See Note 1).

ac. Start atmosphere control equipment.

ad. Additional requirements may be imposed at the discretion of the CO.

2. The following tests and evolutions will be carried out immediately prior to or during the initial tightness dive:

a. Obtain navigational fix and take sounding. Maximum depth of water is 400 feet as specified in reference (p).

b. Conduct a dive to periscope depth. Obtain stop trim, if practical, at periscope depth. If sea state requires deeper submergence, proceed slowly to 150 feet for SSN 688 Class submarines (155 feet for SSN 774 Class submarines), (160 feet for SSN 21 and SSBN/SSGN 726 Class submarines) to obtain stop trim. Maximum keel depth shall be per Table 1 of Appendix F.

c. Check operation of ship control systems, including depth indication. (See Note 4).

d. Shoot pyrotechnics from each ejector by hand and impulse methods, as applicable (see Notes , 5, and 6).

e. Communicate with escort on WQC at each depth increment or at ten minute intervals, whichever is sooner. If communications are lost, return to depth at which communications can be established before continuing (see Note 2).

f. All hands inspect for leaks and report them to the Sea Trial coordinator.

g. Vent the fuel system if sea pressure compensated.

h. Operate all periscopes, checking optics and for leakage. Operate all masts.

i. Test full throw of rudder and planes at slow speeds. (See Note 1).

j. Test operation of trim and drain systems.

k. Check all sonar equipment on each hydrophone.

l. Run ahead at maximum speed allowed by SOE. Operate torpedo tube shutters and ejection pump shutters. If shutters do not open, gradually reduce speed until shutters open. This establishes "stall speed" for each shutter.

m. Comply with the Command Control Systems (CS/CCS) Test Program regarding the shooting of waterslugs. This event is not required by the TYCOM if not required by the CS/CCS Test Program (see Notes 1, 5, and 6).

n. Snorkel, test operation of stills and air compressors (see Notes 1, 6, and 7).

o. Operate all hull and back-up valves and equalize sea pressure on all systems designed for test depth (see Notes 6, 8 and 9).

p. Check hovering system (where applicable) (see Notes 1 and 6).

q. Ensure air banks are charged to within 200 psi of full pressure.

r. Line up MBT blow system for maximum blow rate.

s. Conduct EMBT blow from 200 feet keel depth. Check bank pressure before and after surfacing. Surfacing with EMBT blow may be delayed to permit additional testing, commencing pre-transit valve operating cycling or transit submerged. However, first surface after initial tightness dive must be by EMBT blow from 200 feet.

t. Additional requirements may be imposed at the discretion of the CO.

**NOTES**

1. **Evolution not required for PSA unless specific equipments/systems were worked or disturbed during PSA.**

2. **In the execution of any Sea Trial, whether escorted or not, submarine COs are reminded of their responsibility to communicate with escorts and/or shore authorities within prescribed, previously agreed upon time limits to avoid initiation of inadvertent lost contact or submarine disaster procedures.**

3. **Pumps should be tested in the industrial activity prior to Sea Trials, to determine that they can pump against a test depth head.**

4. **Compare all depth and pressure gages. Depth and pressure gages should be checked as soon as the next specified depth is reached.**

5. **Integrity of launchers or signal ejectors shall be established by admitting sea pressure through equalizing lines or flooding connection and the muzzle valve/door operated before conducting operational tests. Shoot water slugs from specified launchers or signal ejectors, at specified depths, as required by the CS/CCS test program. Shoot pyrotechnics on initial dive and at test depth on the deep dive. Shooting of pyrotechnics during the initial dive shall be accomplished in conjunction with the 200 foot EMBT Blow. Shooting of pyrotechnics at test depth during the deep dive shall be accomplished in conjunction with the test depth EMBT blow.**

6. **Those seawater systems which are not required for normal safe operation of the ship at test depth but which have been designed for and may be subjected to test depth pressure should not be subjected to submergence pressure during the initial dive to any specified depth (e.g., a blown sanitary tank). (See reference (i)).**

7. **Check operation of electrodes; head valve and each snorkel safety circuit.**

8. **Depth increments for cycling vital sea valves are as set forth in reference (i).**

9. **This evolution (initial operation of hull and back-up valves in fully submerged condition) at depths other than specified in reference (i) is intended for crew training and is not technically required. Evolution may be abbreviated or deleted on a case basis with concurrence of the embarked TYCOM representative.**

10. **Meggering of antenna may be accomplished during dock trials but must be accomplished prior to initial deep dive.**

## APPENDIX E

## ESCORT SHIP CAPABILITIES FOR SUBMARINE SEA TRIALS

1. Radio Communication:

   a. Ability to transmit and receive on two Ultrahigh Frequency (UHF) and on High Frequency (HF) circuits simultaneously including 243.0 MHZ or equivalent system capabilities (Very High Frequency (VHF) and INMARSAT-C).

   b. Equipped to tape record all non-secure radio transmissions between the submarine and the escort.

   c. Capability to communicate on the submarine UHF/HF or equivalent system capabilities (VHF/INMARSAT-C) circuits.

2. Sonar and Sonar Communications:

   a. Equipped with underwater telephone capable of communicating to the submarine's test depth or equivalent system capabilities.

   b. Sufficient operators to man underwater telephone on a continuous basis, including a Continuous Wave (CW) capable operator on call if the requirement for CW communication develops.

   c. Equipped to tape record (installed or portable) all transmissions between the submarine and the escort by underwater telephone.

   d. Explosive charge signals or active sonar called for by AXP-1.

3. Navigation:

   a. Equipped with an operable LORAN C, Global Positioning System (GPS) or the latest accurate off-the-shelf navigational equipment.

   b. Equipped with an operable DRT or equivalent system capability.

   c. Possess navigational capability to fix his position to two miles average accuracy.

   d. Fathometer.

   e. Gyrocompass.

   f. Underwater log or equivalent system capability.

4. Sea keeping and speed:

   a. Ability to remain at sea for one week in State 6 seas.

   b. Be capable of making 10 knots. Escorts will keep the submarine informed of any speed or sea state limitations. In addition, if the escort has an unfaired WQC hydrophone, it shall notify the submarine of the maximum sea state and speed which will not restrict WQC communications. If the submarine requires a speed above this limit, the submarine should run a track about the escort within WQC range.

(This Page Intentionally Left Blank)

# APPENDIX F

## LISTING OF TESTS TO BE PERFORMED PRIOR TO, DURING AND FOLLOWING FIRST DIVE TO TEST DEPTH

1. The following tests and evolutions, as summarized in Table 1 of this appendix, will be carried out following the initial tightness dive and prior to the deep dive:

a. Six hours of Independent Ship Exercise for crew training. (see Note 1).

b. Charge air banks and battery if necessary. The ship may be submerged while charging air banks provided the depth of the ship does not exceed other guidelines in this instruction, or those of the flooding bill or ship's operating procedures.

c. Operate IFF and ESM equipment. If possible use aircraft. (see Note 2).

2. The following tests and evolutions, as summarized in Table 1 of this appendix, will be carried out immediately prior to or during the first deep dive. Per Volume V of this manual, a second deep dive must be performed to complete valve cycling and operation of systems not required for normal safe operation of the ship, i.e., torpedo tubes, Trash Disposal Unit (TDU), hovering, plumbing. (see Note 3).

a. Ensure that air banks are charged to within 200 psi of full pressure.

b. Ensure all MBT blow systems are fully operational and in a normal line up configuration.

c. Take sounding. Maximum water depth is given in reference (p). Accurately fix the ship's position within the specified dive area (reference (p)).

d. Conduct a dive to periscope depth. Obtain speed trim, if practical, at periscope depth. If sea state requires deeper submergence, proceed slowly to (150 feet for SSN 688 Class submarines), (155 feet for SSN 774 Class submarines), (160 feet for SSN 21 and SSBN/SSGN 726 Class submarines) to obtain speed trim. (see Note 4).

e. Obtain stop trim. Take readings and water samples required to make a check of ballasting. Stop trim should be conducted at the most desirable time during the trials.

f. Trim ship to maintain neutral buoyancy. (see Note 5).

g. Line up propulsion plant for maximum reliability in accordance with ship's instructions.

h. Rig ship for deep submergence. All systems should be in the maximum secure condition with unnecessary sea systems isolated. (see Note 6).

i. Station personnel throughout the ship to inspect for leaks.

j. At depths specified in reference (i):

(1) Inspect for leaks.

(2) Adjust trim. (see Note 5).

(3) Communicate with escort at each 100 feet depth increment or at 10 minute intervals, whichever is sooner. If communications are lost, return to depth at which communications can be reestablished before continuing. (see Note 7).

k. At depths listed for hull valve cycling in reference (i) (as applicable) per NAVSEA approved Deep Dive Test Form:

(1) Check accuracy of gages and repeaters.

(2) Conduct operational test of signal ejectors. (see Note 8).

(3) Check shaft bearings and stern tubes for excessive heating, leakage and noise. Sealol shaft seals must be tested at each depth and for the required time, as specified in the approved class test form.

(4) Cycle rudder and planes through full throw to check for binding. (see Note 9).

(5) Operate all hull and back-up valves (using remote closures, as applicable, from flooding control stations) of seawater systems required to maintain propulsion and other functions vital to the ship's operation at increments of depth specified in reference (i). Required systems are listed in paragraph 4.b. of reference (i). Observe restrictions on operation of systems listed in paragraph 4.d. of reference (i).

(6) Check operation of bulkhead flappers and watertight doors for binding.

(7) Operate trim and drain pumps, discharging to sea.

(8) Cycle components of each torpedo tube. Check for leakage. Establish integrity of torpedo tubes by admitting sea pressure through equalizing lines or flooding connection before cycling components (see Notes 3, 8 and 16).

(9) Vent negative tank inboard (if installed). (see Notes 3 and 10).

(10) Cycle main vents to check for binding.

l. At maximum authorized operating depth:

(1) Repeat item 2.k.(1) of this appendix - Depth gages and repeaters.

(2) Operate each signal ejector by impulse and hand, as applicable. (see Notes 3 and 8).

(3) Repeat item 2.k.(3) of this appendix - Shafting and bearings.

(4) Repeat item 2.k.(5) of this appendix - Hull and back-up valves.

(5) Repeat item 2.k.(6) of this appendix - Bulkhead flappers and watertight doors.

(6) Repeat item 2.k.(7) of this appendix - Trim and drain pumps.

(7) Repeat item 2.k.(8) of this appendix - Torpedo tubes. (see Notes 3 and 16).

(8) Repeat item 2.k.(9) of this appendix - Negative tank (if applicable).

(9) Equalize TDU with sea pressure through trim line. During conduct of the Deep Dive Test Form on new construction submarines, the TDU Hull Valve will be cycled at depths specified by reference (i) in order to meet material certification requirements. (see Note 3).

(10) Equalize sea systems and cycle hull and back-up valves as specified in reference (i).

(11) Repeat item 2.k.(10) of this appendix - Cycle main vents and check for binding.

m. After each deep dive, surface fully with EMBT blow from the depth required per the NAVSEA approved EMBT Test Procedure and the approved Sea Trial Agenda. Check air bank pressures before and after blow.

n. Additional requirements may be imposed at the discretion of the CO.

3. The following tests and evolutions will be carried out submerged following the deep dive:

a. Steering and diving operation at full speed. (see Notes 4 and 11).

b. Full power run. (see Notes 11, 12 and 13).

c. Steep angles - operate the ship through several depth changes using large up and down angles to check operation of ship machinery. (see Notes 11 and 14).

d. Time raising each periscope and mast at maximum depth and speed for which they were designed. Check training feature where applicable.

e. Run and observe air conditioning plants throughout trials. Operate the air conditioning plant to demonstrate ability to carry entire maximum existing ship's air conditioning load, or 100 percent capacity.

f. Run and observe refrigeration plant throughout trials.

g. Missile fire control erection performance tests (Vertical Launch System (VLS) on SSN).

h. Missile fire control alignment (VLS on SSN).

i. Missile tube muzzle hatch operation (VLS on SSN).

j. Missile compensation system operation submerged (VLS on SSN).

k. Additional requirements may be imposed at the discretion of the CO.

l. Comply with the CS/CCS test program with regard to firing of water slugs and testing of torpedo tubes. (see Notes 3, 8 and 16).

4. The following tests and evolutions will be carried out on the surface following the deep dive:

   a. Note condition of periscope optics.

   b. Measure resistance to ground of all external electrical cables.

   c. Take radio antenna megger readings immediately after surfacing, again in one-half hour, and compare with readings obtained in Appendix D, step 1.v. of this chapter.

   d. With ship proceeding at full speed, conduct low pressure blow (if installed) to check whether or not circulation water systems and machinery become air bound.

   e. Measure resistance, across and to ground from each side, of all sonar hydrophones, projectors and transducers. (see Note 15).

**TABLE 1. SUMMARY OF SIGNIFICANT UNDERWAY TRIAL REQUIREMENTS**

| Sea Trials | Initial Tightness Dive | Transit | Deep Dive |
|---|---|---|---|
| Policy References | Appendix D, paragraph 2 of this chapter. | Appendix F, paragraph 1 of this chapter. | Appendix F, paragraph 2 of this chapter. |
| Start Depth | Surface | Surface to 400 ft. | Surface to 400 ft. |
| Conduct Depth | Periscope depth or about 150 ft for SSN 688 Class (155 ft for SSN 774 Class), (160 ft for SSN 21 and SSBN/SSGN 726 Class) if sea state dictates for trim. Remaining events of Appendix D, paragraph 2 of this chapter no deeper than 200 ft. | Surface to 400 ft but not to exceed deepest depth previously escorted or valve cycling accomplished. Additional trials and testing permitted within the Independent Ship Exercise, crew rest and other requirements of this instruction. | 200 ft increments to one half Maximum Authorized Operating Depth, then 100 ft increments to Maximum Authorized Operating Depth. |
| Maximum Keel Depth | 200 ft. | One half test depth. | Maximum Authorized Operating Depth. |
| Finish Event | Surface from 200 ft with EMBT blow.* | Rendezvous with escort. | Deep dive will be terminated with an EMBT blow from Maximum Authorized Operating Depth Appendix F section 2. |
| Escort Required | Yes** | No | Yes** |
| Water Depth | 400 ft per reference (p) | Unlimited. | Reference (p). |

* May be delayed to permit additional testing, commencing pre-transit valve operating cycling or transit submerged. However, first surface after initial tightness dive must be by EMBT blow from 200 feet.

** An escort is required on the initial tightness dive and on subsequent first dive to any deeper depths, i.e., the first dive to any depth requires an escort. EMBT blow escort requirements given in paragraph 4.4.3.c of this chapter.

NOTES

1. Each person involved in Sea Trials should be allowed a minimum of six hours of continuous, uninterrupted sleep during any 24 hour period encompassed by the Sea Trial.

2. Event is optional with regard to sequence. May be conducted at any time during Sea Trials and is not a prerequisite to the deep dive. If listed with initial tightness dive events, completion is not mandatory prior to proceeding with remainder of trials.

3. Those seawater systems which are not required for normal safe operation of the ship at test depth but which have been designed for and may be subjected to test depth pressure should not be subjected to submergence pressure during the initial dive to any specified depth (e.g., a blown sanitary tank). (See reference (i)).

4. At maximum safe speed, operate the rudder and planes through full throw in both directions in normal and emergency power. Time evolutions and check against design values.

5. Deep dive should be conducted using moderate speed, or as approved by NAVSEA, and constantly adjusting trim, at depths specified in reference (i), to maintain neutral buoyancy. Moderate speed shall be defined as that range of speed that allows the ship to recover from a loss of stern plane control or flooding casualty.

6. Reference (i) prescribes procedures for systems operation during deep dive.

7. In the execution of any Sea Trial, whether escorted or not, submarine COs are reminded of their responsibility to communicate with escorts and/or shore authorities within prescribed, previously agreed upon time limits to avoid initiation of inadvertent lost contact or submarine disaster procedures.

8. Integrity of launchers or signal ejectors shall be established by admitting sea pressure through equalizing lines or flooding connection and the muzzle valve/door operated before conducting operational tests. Shoot water slugs from specified launchers or signal ejectors, at specified depths, as required by the CS/CCS test program. Shoot pyrotechnics on initial dive and at test depth on the deep dive. Shooting of pyrotechnics during the initial dive shall be accomplished in conjunction with the 200 foot EMBT Blow. Shooting of pyrotechnics at test depth during the deep dive shall be accomplished in conjunction with the test depth EMBT blow.

9. Cycling of rudder and planes through full throw should be limited to 90% of test depth.

10. Test to demonstrate the ability of the tank to withstand external pressure.

11. The required sequence of events is initial dive, deep dive, full power run submerged, then high speed maneuverability and steep angle tests. On initial propulsion plant trials for new construction nuclear powered submarines, the deep dive will be to test depth minus 300 feet unless otherwise approved by NAVSEA or the TYCOM and reflected in the Sea Trial Agenda.

12. Run full power submerged for at least two hours. COs may schedule the full power run for four hours if deemed necessary. Operate at minimum non-cavitating depth but not to exceed 400 feet. Water depth is not limited for this event.

13. Propulsion Plant Tests. The full power trial for new construction submarines will be in accordance with building specifications or directions from the Ship Program Manager. Submarine depth during the submerged full power trials should be limited to 400 feet. The submerged full power ahead test for commissioned nuclear powered submarines shall be terminated by a back emergency bell. The duration of the back emergency bell shall be limited to 45 seconds, to be followed immediately by an appropriate ahead bell. Caution must be exercised to avoid stern way.

14. Completion of full power, deep dives and EMBT Blow Test Forms are prerequisites for the high speed maneuverability and steep angle tests. Initial high speed ship control tests, steep angle tests and exercises of major casualties shall be conducted in water that does not exceed one and one-half times design test depth, which equates to collapse depth.

15. The spherical array need not be done if an array purge or power into the array measurements are scheduled at a later date.

16. Fire water slugs from torpedo tubes at the depths and speeds required by the CS/CCS test program (or Combat Systems Assessment or Non-Propulsion Electronic System Operability, Verification and Evaluation, as applicable).

(This Page Intentionally Left Blank)

## APPENDIX G

## SUBMARINE SEA TRIAL SITUATION REPORT (SITREP)

FM USS <SHIP NAME>//
TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//N4//
INFO CNO WASHINGTON DC//N77//
COM<LANT/PAC>FLT <NORFOLK VA/PEARL HARBOR HI>N43//
COMNAVSEASYSCOM WASHINGTON DC//PMS 392/08O//
DIRSSP WASHINGTON DC//205// {For SSBN/SSGN Only}
<SUBOPAUTH>// {IF OTHER THAN PARENT TYCOM}
COMSUBDEVRON FIVE SILVERDALE WA//N3//
COMSUBGRU <NO.>//N5//
COMSUB<RON/GRU NO.>//
<SUPERVISING AUTHORITY>//<CODES>//
(OTHER UNITS IN AREA IF APPLICABLE)//
BT
UNCLAS //N09094//
MSGID/GENADMIN/USS <SHIP NAME>//
SUBJ/(TYPE AVAILABILITY) SITREP (SEQUENTIAL NUMBER)//
REF/A/DOC/COMFLTFORCOM/<DATE>//
REF/B/DOC/AS APPLICABLE/<DATE>//
NARR/ REF A IS COMFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL, VOLUME II.
RMKS/1. CO'S SUMMARY, EVENTS 1-9 COMPLETED WITH THE FOLLOWING DEFICIENCIES NOTED:
A. SUBSAFE/URO DEFICIENCIES.
1) #1 SCOPE HULL GLAND LEAK 1 DPM AT 20% TD
2) TDU VENT, TD-104 LEAKS 3 DPM AT 65% TD.
3) STERN PLANES AUX ANGLE INDICATOR ON BCP DOES NOT ILLUMINATE, URO-16
B. NON-SUBSAFE/URO DEFICIENCIES.
1) SCULLERY DRAIN LEAKING AT FITTING F-18, 27 DPM
2) 3 FLOOR TILES IN CREWS MESS LIFTED AFFECTING SANITATION
3) CO HOT WATER SHOWER RECIRC PUMP FAILED

2. PREVIOUS DEFICIENCIES REPORTED AND STATUS.
(LIST ALL PREVIOUS DEFICIENCIES AND CURRENT STATUS-THE GOAL IS TO CAPTURE THE COMPLETE MATERIAL CONDITION IN EACH MESSAGE) STATUS = REPAIRED (R), CORRECTIVE ACTION REQUIRED (CAR), NOT APPLICABLE (NA)

EXAMPLE –

1) SCULLERY DRAIN LEAKING AT FITTING F-18, 27 DPM -R
2) 3 FLOOR TILES IN CREWS MESS LIFTED AFFECTING SANITATION - CAR
3) CO HOT WATER SHOWER RECIRC PUMP FAILED - CAR
4) #1 SCOPE HULL GLAND LEAK 1 DPM AT 20% TD - CAR
5) TDU VENT, TD-104 LEAKS 3 DPM AT 65% TD - CAR
6) STERN PLANES AUX ANGLE INDICATOR ON BCP DOES NOT ILLUMINATE, URO-16 - R
3. ADDITIONAL INFO.
1) DESCRIBE ANY ADDITIONAL INFO DESIRED OR LIST "NONE".
4. **TYCOM, NAVSHIPYD, AND NAVSEA REPS CONCUR-DO NOT CONCUR (AS APPROPRIATE).//**
BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH NTP-3 FORMAT AND CURRENT PLAIN LANGUAGE ADDRESS DIRECTORY (PLAD) IS UTILIZED.**

(This Page Intentionally Left Blank)

# VOLUME I

## CHAPTER 5

## POST DELIVERY DEFICIENCIES

REFERENCES.

(a) NAVSEAINST 4790.8/OPNAVINST 4790.4 - Ships' Maintenance and Material Management (3-M) Manual
(b) INSURVINST 4730.1 - Trials and Inspections of Surface Ships
(c) INSURVINST 4730.2 - Trials and Material Inspections of Submarines

LISTING OF APPENDICES.

A Sample Page of 4760-1 Report with Representative Data
B Legend and Explanation of Symbols Used in Report 4760-1
C Preparation for Guarantee Material Inspection/Final Contract Trials

5.1 PURPOSE. The purpose of this chapter is to provide a procedure to identify and document deficiencies found in new construction ships. This chapter focuses on the period from initial Acceptance Trials (AT) until the termination of funding responsibility under the Shipbuilding and Conversion, Navy (SCN) appropriation. Proper management of these deficiencies is necessary to ensure:

a. Final settlement of the construction contract with the shipbuilder.

b. Correction of the maximum number of shipbuilder responsible deficiencies under terms of the construction contract.

c. Correction of the maximum number of government responsible deficiencies under the SCN appropriation.

d. Identification of all new construction deficiencies which must be corrected subsequent to the guarantee period under appropriations other than SCN, and identification of improvement items which have class application.

Deficiency items not adjudicated prior to Combined Trials (CT) and the Guarantee Material Inspection (GMI) for submarines or during ATs and Final Contract Trials (FCT) for all other ships are identified to the Navy by the Board of Inspection and Survey (INSURV). Additional items are identified during Naval Sea Systems Command (NAVSEA) Acoustic Trials, Combat System Certification Trials (CSCT) and by the Commanding Officer (CO) of the ship during the contract guarantee period and reported to the Supervising Authority.

5.2 DEFICIENCY CORRECTION. Deficiencies are addressed in terms of three general categories. The procedure for initiating corrective action for a deficiency is determined by the category.

5.2.1 Government Responsible Items. The obligation and work limiting date for all shipbuilding programs under the SCN appropriation will normally be at the end of the 11th month following completion of the fitting out period. For submarines, the fitting out period ends at delivery. Government responsible work accomplished in support of a new construction ship and funded under SCN is limited to work which can be completed prior to the end of this 11 month period. Authorization for correction of non-reactor plant government responsible deficiencies is provided by the Ship Program Manager based on a priority assignment by the ship and recommendations from the Type Commander (TYCOM). Authorization for correction of reactor plant government responsible deficiencies is provided by NAVSEA Nuclear Propulsion Directorate (08).

5.2.2 Shipbuilder Responsible Items. Construction contracts with private industrial activities contain a guarantee clause. The rights of the government concerning deficiencies identified during the guarantee period are set forth in the contract. Deficiencies must be identified and reported to the shipbuilder and cognizant government agencies prior to the end of the guarantee period in order for corrective action to be established. Correction of deficiencies designated shipbuilder responsible can be accomplished during any subsequent period that the ship is made available to the shipbuilder. Availability of the ship is usually limited to the Post Shakedown Availability (PSA), except under special circumstances when immediate corrective action prior to PSA is required to permit the ship to meet operational commitments. The ship may also be made available to the shipbuilder after PSA to permit follow-up corrective action on shipbuilder responsible deficiencies identified during the guarantee period but not satisfactorily corrected during PSA.

5.2.3 Recommended Changes in Characteristics, Design Specifications, or Plans. Improvements to the ship recommended by INSURV will be investigated by the Ship Program Manager. Action, as appropriate, will be initiated by a government approved change. This change may be in the form of a Field Modification Request (FMR), Headquarters Modification Request (HMR), Ship Alteration (SHIPALT), Ordnance Alteration (ORDALT), Strategic Systems Programs Alteration (SPALT), Service Change, Machinery Alteration (MACHALT) and Field or Engineering Change Proposal. Changes of this nature usually have application to more than one ship of the class. Improvements to the ship recommended by Ship's Force should be forwarded by the CO in accordance with Volume VI, Chapter 3 of this manual to the Ship Program Manager via the Supervising Authority.

5.3 REQUIRED REPORTS. The responsibility for ensuring deficiencies are corrected rests jointly with the CO, the Supervising Authority and the Ship Program Manager. The method of corrective action varies with the type of deficiency and may involve the coordinated action of several activities. In order to effectively prosecute each deficiency, special reporting and handling procedures are necessary. The Ship's Maintenance Data System shall be implemented not later than delivery in accordance with reference (a). This will provide a smooth transition into the Maintenance Resources Management System (MRMS) and permit Maintenance and Material Management (3-M) documentation of all INSURV deficiencies for use with the Consolidated Report. The Consolidated Report provides follow-up action on all deficiencies and minimizes administrative effort.

a. Consolidated Report. A Consolidated Report, compiled by the Ship Program Manager, combines into one document the screening actions, reports of completed actions and significant information as listed below (as applicable):

(1) AT/CT INSURV Report.

(2) FCT/GMI INSURV Report.

(3) Post Delivery Deficiency Items (PDDI).

(4) CSCT.

(5) Silencing Deficiencies.

(6) HMRs.

(7) Ship Program Manager action on all deficiencies.

(8) Shipbuilder Delivery Letter.

(9) Supervising Authority evaluation of shipbuilder comments on Deficiency Items.

(10) Priority assignment of all deficiencies.

(11) TYCOM action on all deficiencies.

(12) Authorized action for PSA for appropriate items.

(13) Final status of all deficiencies at the end of the SCN funding period (PSA Completion Report).

(14) TYCOM final action on each item uncorrected at the end of the SCN funding period.

(15) Identification of deficiencies requiring Ship Program Manager action to develop corrective action.

(16) Estimated cost to the government for correction by Forces Afloat of shipbuilder responsible deficiencies.

(17) Antenna Inspection Deficiency Items.

b. Report Format. Appendix A of this chapter is an example of a completed page of the Consolidated Report, containing sample entries from various parts. The symbols used in defining the action taken by each activity are described in Appendix B of this chapter along with a discussion of the use of each column. The Consolidated Report typically consists of the following parts:

| | | |
|---|---|---|
| (1) | Part A | Key Definitions for Symbols used in the PSA Work Package. |
| (2) | Part B | INSURV Deficiencies. |
| (3) | Part C-I | Non-Nuclear HMRs. |
| (4) | Part C-II | Other Non-Nuclear Items. |
| (5) | Part C-III | Non-Nuclear CSCT Items. |
| (6) | Part D | Antenna Inspection Deficiency Items. |
| (7) | Part E | PDDIs. |
| (8) | Part F | Silencing Deficiencies. |

c. Preparation.

(1) Part B:

(a) List of INSURV deficiency items: Prepared by the Ship Program Manager and distributed following CT/AT.

(b) List of INSURV GMI/FCT items: Prepared by the ship in accordance with Appendix C of this chapter immediately following the GMI/FCT for use by NAVSEA at the GMI/FCT Card Conference. The Ship Program Manager will distribute a finalized GMI/FCT list following the GMI/FCT Card Conference.

(2) Part C-I, C-II, C-III, D and F: Prepared and distributed by the Ship Program Manager.

(3) Part E: Prepared by the ship as discussed in section 5.6 of this chapter.

d. Reporting.

(1) Thirty days after delivery, the ship will submit marked up copies of Part B indicating the priority assignment of each uncorrected CT/AT deficiency (Ship Program Manager, TYCOM, Immediate Superior in Command (ISIC), Supervising Authority).

(2) The Ship Program Manager will prepare and distribute marked up copies of Parts C-I, C-II, C-III, D and F as the information becomes available.

(3) Priority assignment for Part B deficiencies (including review of all uncorrected CT/AT deficiencies) is determined at the GMI/FCT Card Conference. Marked up copies are retained by all participants. (Ship Program Manager, TYCOM, ISIC, Ship, Supervising Authority).

(4) The ship will report deficiencies discovered after GMI/FCT and before the end of the SCN period in accordance with section 5.6 of this chapter.

(5) Deficiencies listed in the Consolidated Report which are corrected by Forces Afloat are to be reported in writing to the Ship Program Manager with copies to the TYCOM, the Supervising Authority as appropriate, and the scheduled PSA activity. This report will normally be submitted by the ship at the end of a refit or maintenance period. Negative reports are not required.

(6) The ship will submit a marked up copy of the Consolidated Report to the TYCOM; copy to the ISIC, Ship Program Manager, Supervising Authority, Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) Activity (for submarines) and the President of the INSURV Board thirty days after PSA or at the end of the guarantee period, whichever is later. This report will indicate the final status of all deficiencies identified during the guarantee period.

5.4 COMBINED TRIALS/ACCEPTANCE TRIALS. The CT/AT is scheduled by the Supervising Authority and conducted by the INSURV Board. The Supervising Authority in conjunction with the ship's CO will present to the INSURV Board known deficiencies which require correction.

5.5 GUARANTEE MATERIAL INSPECTION/FINAL CONTRACT TRIALS. GMIs/FCTs are scheduled by the TYCOM and conducted by the INSURV Board after shakedown, prior to the end of the guarantee period. These inspections/trials provide a formal evaluation of the material condition of each newly constructed ship after limited service. GMIs/FCTs are conducted sufficiently in advance of PSA to allow "lead time" for the procurement of material and the advanced planning required for the correction of deficiencies during the availability. The CO will present the ship's material status to the INSURV Board following the guidance in Appendix C of this chapter. GMIs are conducted for submarines; all other ships will undergo an FCT.

5.6 POST DELIVERY DEFICIENCY ITEMS. The CO is responsible for reporting deficiencies not otherwise identified by INSURV, until the end of the SCN period in accordance with the following procedures. By using the same format for PDDI reporting as for INSURV items and by extending the use of the Consolidated Report to include these items, the same management attention is afforded to all construction deficiencies.

a. The following types of problems should be reported as PDDIs:

(1) Recurring failures in a piece of equipment or machinery such that the reliability is considered unsatisfactory.

(2) Major equipment or component malfunction which requires outside assistance to correct (vendor or industrial activity).

(3) Symptoms of major machinery problems which require investigation to determine the extent of the problem. (Improper temperatures, pressures, leakage, vibration, noise, etc.).

(4) Insufficient supply support for specific equipments or machinery based on operational experience. Allowance deficiencies reported as PDDIs should be supplemented by submission of Allowance Change Requests/Configuration Change Reports as appropriate.

(5) Excessive or accelerated wear, erosion, or corrosion determined through inspection.

(6) Improper bonding of preservation on surfaces that must be protected.

(7) Any casualty which results in a Casualty Report (CASREP). Insert an amplification data set immediately after the Parts Identification data set consisting of "AMPN/PDDI:___- ___//", ensuring that the CASREP includes all appropriate PDDI addressees. A separate PDDI must also be submitted.

(8) Identification of any condition or defect which requires a Departure from Specification request.

(9) Improper alignment, clearance, or resistance to ground which indicates an unaccounted for change from baseline data.

(10) Significant internal and external valve leakage. (Primary, seawater, steam, air, hydraulics, etc.).

(11) Any significant AT/CT deficiency item reported corrected which has recurred. Refer to the AT/INSURV number in the text of the deficiency description.

(12) Any AT/CT deficiency item reported corrected by the shipbuilder which is not considered by the ship to be complete. Refer to the AT/INSURV number in the text of the deficiency description.

**NOTE: DEFICIENCIES AND MATERIAL PROBLEMS WHICH ARE CORRECTED BY SHIP'S FORCE WITHOUT ASSISTANCE SHOULD NOT BE REPORTED AS PDDIs.**

b. Reporting.

(1) Between delivery and GMI/FCT, uncorrected deficiencies of the nature described above should be documented in the Current Ship's Maintenance Project (CSMP) and presented to the INSURV Board for consideration during GMI/FCT.

(2) Problems requiring corrective action prior to PSA, or of such significance that planning will have to commence as early as possible, should be reported by message OPNAV 4790/2K/Streamlined Alternative Logistics Transmission System (SALTS) without delay. The OPNAV 4790/2K must contain the sequential identification number of the PDDI and a brief description of the problem being reported. Multiple PDDIs per report are encouraged. Items reported by message OPNAV 4790/2K/SALTS should be included in the next regular PDDI report. The message shall be addressed to the Supervising Authority, with information copies to the Ship Program Manager, TYCOM (N40), the ISIC, and NAVSEA 08 (for items with nuclear cognizance).

(3) Routine PDDIs shall be reported by OPNAV 4790/2K and summarized at least monthly after the GMI/FCT.

(4) All PDDIs shall be assigned a sequential number identifying the item for administrative purposes and a priority in the "ship" column of the 4760-1 Report. This forms Part E of the Consolidated Report. Report Form 4760-1 will be provided to the ship at the GMI/FCT Card Conference.

(5) Distribution of the PDDI report by the ship will be as follows:

(a) Advance copy to the Supervising Authority.

(b) Advance copy to the Ship Program Manager. (Nuclear deficiencies to NAVSEA 08).

(c) Copy to the ISIC.

(d) Original to the Supervising Authority via the TYCOM and the Ship Program Manager.

(6) All PDDIs shall be assigned a Job Sequence Number (JSN) in the ship's JSN log prior to input into the ship's CSMP. The CSMP summary line (Block 37, OPNAV 4790/2K) will contain the PDDI sequential number for cross reference.

## APPENDIX A

## SAMPLE PAGE OF 4760-1 REPORT WITH REPRESENTATIVE DATA

USS_____

REPORT 4760-1

| Item | Description | N/S Action | K | SOS | Ship | TY | PSA | Final | Tycom | N/S |
|---|---|---|---|---|---|---|---|---|---|---|
| 1K1ax (CT) | Snorkel safety circuit high vacuum trip does not function. | K | KA | XK | XK | -- | -- | -- | -- | -- |
| 1A509ax (GMI) | Nitrogen stowage capacity insufficient to support requirements of oxygen generator operation for extended operations. | NA3 ShipAlt will be accomp IAW FMP | -- | A | A | | SA | SSN 1070K | | NA3 |
| 594-16 (PDDI) | SPM inoperable due to zero ground. | | | | A | A | KA | XK | -- | -- |
| SI-2 (CSCT) | Bow area rattle, affects BQA-8 hydrophones #3 and #4. | K | | | | | K | XF | -- | -- |

Page

(This Page Intentionally Left Blank)

## APPENDIX B

## LEGEND AND EXPLANATION OF SYMBOLS USED IN REPORT 4760-1

1. Each activity will enter in the applicable column the appropriate symbol to indicate status, position, priority, responsibility or authorization for each item.

2. Extra pages shall be added to the package as necessary to provide history, results of investigations or comments to clarify the position or the item itself.

3. The action taken for each item in each of the columns from the "N/S Action" column through the "PSA" column will be an integrated action by all concerned following INSURV CT/AT, GMI/FCT, and PSA related conferences.

4. The following is a brief description of the purpose of each column:

a. Column "N/S Action" - Indicates Ship Program Manager assignment of responsibility. No government SCN funded work is authorized in this column. Authorization of work will be as stated under the "PSA" column for each line item in the work package.

b. Column "K" - Column "K" is used to indicate the position of the shipbuilder for an item indicated in column "N/S Action" as being the responsibility of the shipbuilder to correct. The shipbuilder may prepare insert pages for comments as appropriate. A rationale is to be provided for all items not accepted (marked "KZ") by the shipbuilder.

c. Column "SOS" - This column is used to indicate the position of the Supervising Authority for each of the items as feasible but especially for those items on which the shipbuilder has responded in column "K".

d. Column "Ship" - This column is used by the ship to indicate the status or action desired for each item still considered open, including a priority assignment regardless of the responsibility/action indicated by INSURV or assigned by the Ship Program Manager or reported corrected by the Supervising Authority. Comments from Ship's Force providing further information and clarification as insert pages are especially helpful in planning correction of any item.

e. Column "TY" - This column indicates the position of the TYCOM on the priority assignment of the ship.

f. Column "PSA" - This column is used by NAVSEA. Authorization of SCN funded work appears only in this column.

g. Column "Final" (Ship and Supervising Authority) - This column is used to indicate the final status of each deficiency at the end of the SCN funded period. This column may be used by the shipbuilder to report to the Supervising Authority the status of deficiencies at the end of the guarantee period. This column is used by Supervising Authority to provide the final status of all authorized work (government and shipbuilder) as reported by the shipbuilder at completion of PSA. This information should be used as a portion of the Departure Report which is to be forwarded to the Ship Program Manager not later than 50 days following the end of the ship's PSA. Comments and recommendations by the Supervising Authority advising correction or non-correction of open items are required.

h. Column "TYCOM" (Final) - This column is used to indicate the action desired by the TYCOM on all items still open at the end of the PSA period. This data will be reviewed at a "Disposition Conference" to be convened and chaired by the Ship Program Manager.

i. Column "N/S" (Final) - This column will be used by the Ship Program Manager to report on agreements made between the TYCOM and the Ship Program Manager during the "Disposition Conference" for each open deficiency item.

5. The following list of symbols is provided in alphabetical order for ease of use. In the interest of simplification, many symbols have been combined.

| Key | Used In The Following Columns | Definition |
|---|---|---|
| A | Ship, TY, PSA | Ship Program Manager authorize correction of the item by the industrial activity as an item for first priority. |
| B | Ship, TY, PSA | Ship Program Manager authorize correction of the item by the industrial activity as a highly desirable second priority item of work. |
| C | Ship, TY, PSA | Ship Program Manager authorize correction of the item by the industrial activity within available funds as third order of priority. |
| F | N/S Action thru N/S | Forces Afloat to correct using TYCOM funds. This includes TYCOM Alteration and Improvement (A&I) Items. |
| FL | Final, TYCOM | Ship's Force submit request for alteration or request for change to ship's allowance. |
| FU | Ship, Final | Forces Afloat will follow-up on material through procurement and correct the deficiency. |
| FV | Ship thru Final | Forces Afloat will correct with technical assistance from equipment manufacturer/vendor or the Ship Program Manager. |
| G | N/S Action | Government responsible to correct condition noted as necessary to comply with shipbuilding specifications. No work authorized except by specific Ship Program Manager action. |

| Key | Used In The Following Columns | Definition |
|---|---|---|
| G/F | N/S Action, PSA | Government responsible to approve for accomplishment for Forces Afloat. Ship Program Manager/Supervising Authority will provide material or technical/design assist as required. |
| GI | All | Ship Program Manager investigate and authorize correction as appropriate. |
| G/V | N/S Action, PSA | Government responsible - equipment still under guarantee. Vendor responsible for correcting condition as noted. Supervising Authority responsible to ensure vendor is available and correction is taken under vendor supervision. |
| K | N/S Action, PSA | Shipbuilder responsible, authorized to correct condition noted as necessary to comply with shipbuilding specifications. |
| KA | K | Shipbuilder accepts responsibility for correction with or without comment. Comment on attached supplementary page. |
| K/F | N/S Action, PSA | Shipbuilder responsible to make installations and all repair work. Shipboard testing approved for accomplishment by Forces Afloat. |
| K/G | N/S | Shipbuilder responsible, authorized to investigate and correct condition noted as necessary to comply with shipbuilding specifications. Government responsible for defects in Government Furnished Equipment (GFE) or Government Furnished Information (GFI). No work authorized for government portion of item without separate specific Ship Program Manager action. |
| KI | K | Shipbuilder accepts item for investigation with determination of responsibility to be made after investigation. |
| KZ | K | Shipbuilder does not accept the item as his responsibility. Rationale to be provided on attached supplementary page. |
| NA | N/S Action | Not authorized using SCN funds:<br><br>1. Cost not commensurate with gain.<br>2. No longer considered a deficiency.<br>3. Recommend correction be accomplished by a SHIPALT during future availability. |
| SA | Final, TYCOM, N/S | Recommend SHIPALT be developed to correct. |
| SC | SOS | Comments of shipbuilder are accepted and concurred with by the Supervising Authority. |
| SI | N/S Action | Silencing deficiency items with responsibility and authorization to be determined by separate Ship Program Manager action. |

| Key | Used In The Following Columns | Definition |
|---|---|---|
| SM | PSA | Supervising Authority is authorized to procure material and turn same over to Ship's Force for installation. A copy of the requisitioning document will be provided to Ship's Force to allow supply follow-up action if necessary. |
| SZ | SOS | Item remains controversial. Comments of the Supervising Authority are provided on attached supplementary page. |
| TY | PSA | Approved for correction by the industrial activity when authorized and funded by the TYCOM. |
| V | Ship, TY, PSA | Government provide vendor service for Forces Afloat to assist during PSA. |
| XF | SOS thru Final | Item was corrected by Forces Afloat. |
| XG | SOS thru Final | Item was corrected by shipbuilder or other industrial activity under a work specification, job order, or FMR funded by the government. |
| XK | SOS thru Final | Shipbuilder has completed corrective action. |
| # | N/S Action, PSA | Changes to Ship Program Manager action. |
| * | PSA | Authority to be provided separately by NAVSEA 08 action. |

## APPENDIX C

## PREPARATION FOR GUARANTEE MATERIAL INSPECTION/FINAL CONTRACT TRIALS

1. To properly prepare for and document deficiencies for the GMI/FCT conducted by the INSURV Board and conduct the GMI Card Conference, the following guidance is provided.

a. Pre-GMI/FCT Documents

(1) Ship's Force provide to the INSURV Board:

(a) For previously reported CT/AT items, provide two copies of the Ship Program Manager's Initial PSA Consolidated List with all INSURV items considered complete by Ship's Force lined out. Do not obliterate items lined out.

(b) Document all new deficiencies which have occurred since CT/AT on OPNAV 4790/2Ks in accordance with reference (a).

(2) Upon arrival, Ship's Force provide to Ship Program Manager representative(s) one complete set of each of the Pre-GMI/FCT documents as outlined in paragraph 1.a.(1) above.

(3) Ship's Force submit required number of copies of all documents for entry into the CSMP in accordance with reference (a).

b. Action on Final GMI/FCT Documents

(1) The INSURV Board will return the complete listing of GMI/FCT findings to the Ship Program Manager representative(s) for follow-up action. This listing will include all items in format per paragraph 1.a.(1) above. The Ship Program Manager will assemble this listing and prepare the GMI/FCT Consolidated Report, Section B, as required by this instruction. Type only the new documented findings from the OPNAV 4790/2Ks (1.a.(1)(b) above).

(2) Ship's Force will provide working spaces and administrative support as required by references (b) and (c).

(This Page Intentionally Left Blank)

# VOLUME I

## CHAPTER 6

## POST SHAKEDOWN AVAILABILITY

REFERENCES.

(a) OPNAVINST 4700.8 - Trials, Acceptance, Commissioning, Fitting Out, Shakedown, and Post Shakedown Availability of U.S. Naval Ships Undergoing Construction or Conversion
(b) NAVSO P 1000 - Navy Comptroller Manual
(c) OPNAVINST 9110.1 - Policy Concerning Submarine Test and Operating Depths
(d) NAVSEAINST 4790.8/OPNAVINST 4790.4 - Ships' Maintenance and Material Management (3-M) Manual
(e) INSURVINST 4730.11 - Preparation of Deficiency Forms
(f) OPNAVINST 3540.3 - Naval Nuclear Propulsion Examining Boards
(g) COMSUBLANT/COMSUBPACINST C3500.1 - Submarine Force Training Manual
(h) COMNAVSUBFOR OPORD 2000
(i) NAVSEAINST C9094.2 - Submarine Valve Operation Requirements for Builders and Post-Overhaul Sea Trial Test Dives
(j) NAVSEA S9086-DA-STM-000 - NSTM Chapter 100 (Hull Structures)

LISTING OF APPENDICES.

A Major Funding Milestones During Construction/Conversion
B Post Shakedown Availability Planning Events Milestone Schedule
C Summary of Major Milestones for Post Shakedown Availability
D Minimum Post Shakedown Availability Sea Trial Requirements for a Submarine Deep Dive

6.1 PURPOSE.

a. Post Shakedown Availability (PSA) is an industrial activity availability assigned to correct deficiencies found during the shakedown cruise or to accomplish other authorized improvements. PSAs are scheduled to commence after delivery and to be completed prior to the Shipbuilding and Conversion, Navy (SCN) obligation work limiting date. This date occurs at the end of the 11th month after the month in which the Fitting Out Period completed for surface units or at the end of the 11th month after the month in which delivery occurs for submarines. Appendix A of this chapter, taken from reference (a), reflects the Major Milestones during Construction related to funding. Funding guidelines for PSA are outlined in reference (b).

b. The length of time designated for PSAs will vary dependent on the platform. Acceptance Trial (AT), Final Contract Trial (FCT), Combined Trial (CT) and Guarantee Material Inspection (GMI) related deficiencies constitute the majority of the PSA workload. Ship Program Manager planned, authorized and funded modifications may also be included.

6.2 PLANNING AND EXECUTION. The events leading to a successful completion of PSA involve several activities and a variety of actions and reports. Appendix B of this chapter outlines the schedule of PSA planning events.

6.3 TRIALS, INSPECTIONS AND CREW CERTIFICATION. Refer to Volume II, Part I, Chapter 3, paragraph 3.6.8 of this manual for PSA trial, inspection and crew certification requirements. Appendix C of this chapter provides a summary of major milestones required for PSA.

6.4 SEA TRIALS.

6.4.1 General.

a. Sea Trials are required to test work completed during PSA. The mandatory submarine requirements for the initial tightness dive are identified in Volume I, Chapter 4, Appendix D of this manual. Appendix D of this chapter identifies the minimum PSA Sea Trial requirements for a submarine deep dive. Volume II, Part I, Chapter 3, Appendix K of this manual provides a list of the minimum tests to be performed during Sea Trials for non-nuclear powered surface ships. The industrial activity shall include at least two days in the availability for Sea Trials. The industrial activity shall prepare an agenda for Sea Trials conducted after a PSA. Nuclear powered ships shall submit the Sea Trial Agenda to the Immediate Superior in Command (ISIC) for approval, with an information copy to the Type Commander (TYCOM). Extensions or reductions of the Sea Trial period may be granted where warranted by the scope of work accomplished. Where an extension of Sea Trial and a change in the availability schedule is required, requests for such extensions must be submitted by the industrial activity to the TYCOM as early as practical. All deficiencies resulting from Sea Trials shall be satisfactorily resolved prior to completion of the availability. If no Sea Trial deficiencies are found, the availability may be completed with TYCOM concurrence at the completion of Sea Trials.

b. (Submarines only) All trial periods must be organized such that each member of the crew has an opportunity to get six uninterrupted hours of sleep during each 24 hour period. Sea Trial events which can be accomplished by normal watch sections may be conducted concurrently with crew rest periods. Sea Trials following PSA are normally conducted with a significant number of "riders". These riders represent Naval Sea Systems Command (NAVSEA), TYCOM, Shipbuilder, and Board of Inspection and Survey (INSURV) personnel onboard to observe various tests and trial evolutions. The ships normal loadout of Lithium Hydroxide canisters is not sufficient to support this increase in personnel. Therefore, two additional canisters must be carried for each rider exceeding normal crew manning. Lithium Hydroxide canisters are to be obtained from the industrial activity.

**NOTE: SUBMARINES ARE REQUIRED TO PERFORM AN EMERGENCY MAIN BALLAST TANK (EMBT) BLOW FOR EACH SEA TRIAL FOLLOWING PSA. THE EMBT BLOW SHALL BE CONDUCTED IN ACCORDANCE WITH THE APPLICABLE UNRESTRICTED OPERATION (URO) MAINTENANCE REQUIREMENT CARDS (MRC) AND DOES NOT REQUIRE AN ESCORT FOR AN EMBT BLOW AT DEPTHS OF 400 FEET OR LESS.**

6.4.2 Assignment of Escort Ship (Submarines only).

a. In accordance with reference (c), the requirement for providing an escort during deep dive submergence trials upon completion of PSA will be evaluated by NAVSEA on a case basis. NAVSEA will advise the Fleet Commander (Submarine Force Commander) in writing, whether or not an escort will be required based on the scope of work in the availability. In general, PSAs should not require an escort, since the work typically performed in these availabilities is limited in scope, is carefully controlled and does not result in substantial risk of unidentified or incomplete work adversely affecting the Submarine Safety (SUBSAFE) boundary.

b. Waiver of escort requirements may be requested by message when necessary. The ISIC will request the waiver as soon as possible. The TYCOM will pass the request to NAVSEA for approval. An escort waiver request message will include all of the following specific statements, as applicable:

(1) A ( ) inch by ( ) inch hull cut between frames ( ) and ( ) including a ( ) inch section of frame ( ) was the only major hull integrity work accomplished during the availability. If no hull frame cut was made, a positive statement to that effect is required.

(2) The hull cut weld satisfactorily passed Radiographic Testing (RT) and seven day Magnetic Particle Testing (MT) nondestructive tests.

(3) Post repair frame circularity check readings are within specifications.

6.4.3 Assignment of Deep Submergence Rescue System Services (Submarines only). Assignment of Deep Submergence Rescue System services are to be carried out in accordance with the guidance provided in Volume I, Chapter 4, paragraph 4.4.3.c of this manual.

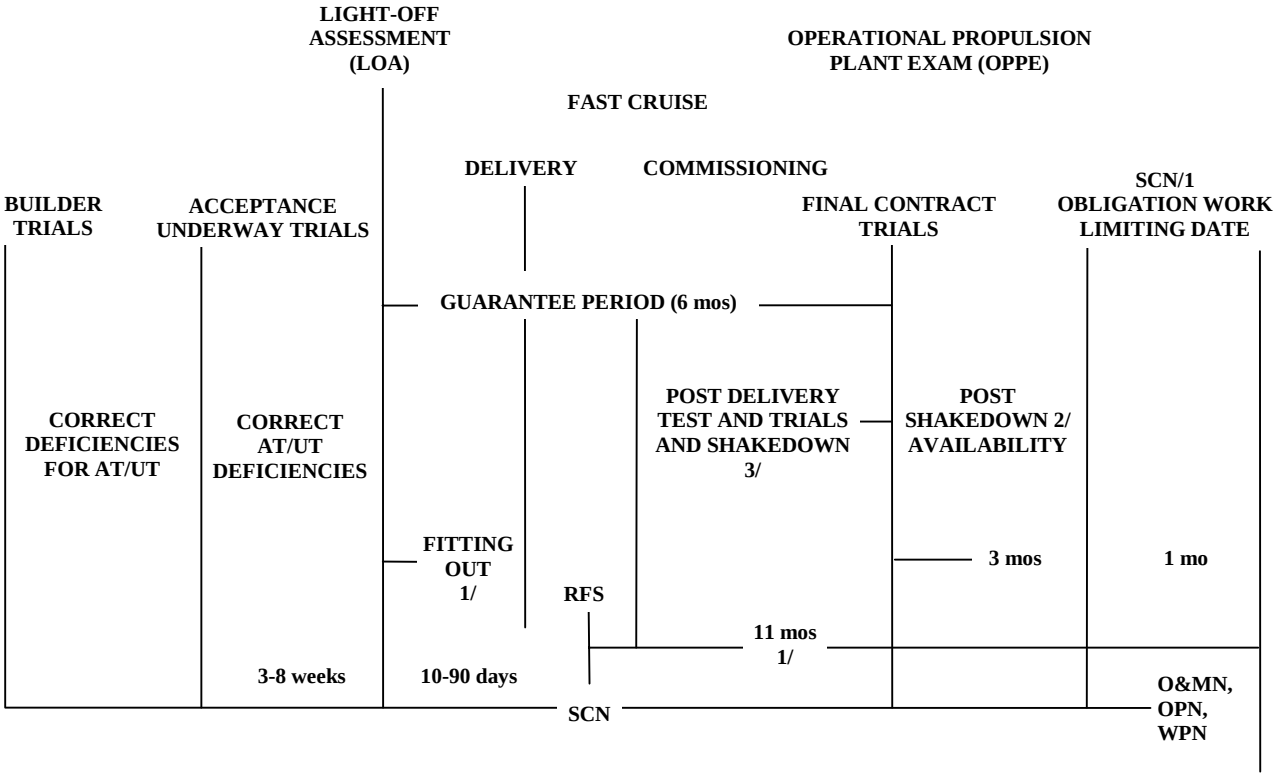
6.5 DEFICIENCY CORRECTION PERIOD. A deficiency correction period will be scheduled after Sea Trials and prior to PSA completion. The scheduled length of this deficiency correction period shall be determined by the type and magnitude of the remaining deficiencies.

6.6 PERIOD FOLLOWING POST SHAKEDOWN AVAILABILITY. Depending on the PSA contract, the industrial activity will normally guarantee work accomplished during an availability for a period of 90 days from the completion of the availability. This does not include responsibility for malfunctioning machinery and equipment due to normal wear, improper adjustment, or tuning by Ship's Force and failure of limited life components. Ship's Force is required to report guarantee items to the industrial activity prior to the guarantee period expiration date. If operational commitments prohibit reporting prior to the 90 day period, the ship should report problems as soon as operations permit. A message is the preferred method of reporting these items. The message outlining specific deficiencies should be submitted to the Supervising Authority with a copy to the TYCOM, the ISIC and the Ship Program Manager who will pass a copy to NAVSEA 04, and to NAVSEA 08 for nuclear cognizant issues. Additionally, any Casualty Reports (CASREP) submitted during the guarantee period must also be addressed to the Supervising Authority and the Ship Program Manager with passing instructions to NAVSEA 04, and to NAVSEA 08 for nuclear cognizant issues.

(This Page Intentionally Left Blank)

## APPENDIX A

## MAJOR FUNDING MILESTONES DURING CONSTRUCTION/CONVERSION




**NOTE:**

1. **SSN/CVN fitting out is complete prior to delivery. Hence, the SCN obligation work limiting date is at the end of the 11th month after the month in which delivery occurs.**
2. **PSA is normally scheduled to complete approximately one month prior to the obligation limiting date.**
3. **Total period of PDT&T and Shakedown shall be a minimum of six months. A waiver may be granted for a period greater than eight months; a request to extend SCN obligation limiting date may be required.**

(This Page Intentionally Left Blank)

## APPENDIX B

## POST SHAKEDOWN AVAILABILITY PLANNING EVENTS MILESTONE SCHEDULE

**NOTE: EVENT TIMES ARE IN DAYS BEFORE AND AFTER DELIVERY AND ARE APPROXIMATE. SIGNIFICANT ADJUSTMENT MAY BE REQUIRED FOR PSAs THAT COMMENCE AT OTHER TIMES AFTER DELIVERY.**

| Time | Event |
|---|---|
| -90 | a. Ship review and update Out of Commission List. |
| -30 | a. Ship review and update Maintenance Data System and Equipment Deficiency Log in accordance with reference (d). |
| -21 | a. Supervising Authority prepare OPNAV 4790/2Ks for all deficiencies to be presented to the INSURV at AT/CT in accordance with reference (e).<br><br>b. AT/CT conducted by the INSURV Board.<br><br>c. Conference following critique of AT/CT.<br><br>(1) Purpose - to identify and resolve controversies over responsibility and timing for correction of deficiencies.<br><br>(2) Participants - Ship Program Manager, Supervising Authority, Shipbuilder and Ship.<br><br>d. Supervising Authority provide ship one copy of each documented INSURV item for input at delivery into the Current Ship's Maintenance Project (CSMP) in accordance with reference (d). |
| 0 | a. Delivery.<br><br>b. Ship Program Manager issue Section B of Consolidated Report.<br><br>c. Ship's Force submit OPNAV 4790/2Ks for all INSURV items and for all other material deficiencies that qualify for the CSMP. |
| 10 | a. Shipbuilder issues delivery letter. |
| 20 | a. Supervising Authority comments on delivery letter. |

| Time | Event |
|---|---|
| 27 | a. PSA Planning Conference.<br><br>(1) Purpose - To establish PSA work package from input to date and to identify required advance planning actions.<br><br>(2) Participants - Ship Program Manager, Supervising Authority, TYCOM, Ship and Shipbuilder. |
| 30 | a. Ship submit priority list of AT/CT deficiencies. |
| 35 | a. TYCOM comments on ship's priority list. |
| 40 | a. Ship Program Manager issue list of SCN funded items authorized for accomplishment during PSA. |
| 42 | a. TYCOM assign Restricted Availability. |
| 45 | a. Supervising Authority issue initial PSA work package.<br><br>b. (Submarines only) Latest date for the conduct of Ship Program Manager sponsored Acoustic and Combat System Certification Trials in order to present to the INSURV Board at the GMI. |
| 50 | a. Prepare for FCT/GMI in accordance with reference (d).<br><br>b. TYCOM representative places ship in "INSURV Window" and calls down ship's Pre-INSURV Package. |
| 54 | a. FCT/GMI by the INSURV Board.<br><br>b. Conference following FCT/GMI critique (may coincide with Planning or Pre-Arrival Conference).<br><br>(1) Purpose - To assign responsibility for correction of deficiencies and to assign ship/TYCOM priorities.<br><br>(2) Participants - Ship Program Manager, Supervising Authority, Shipbuilder, TYCOM, Ship, and ISIC (optional).<br><br>c. Ship Program Manager issue Section B of Consolidated Report.<br><br>d. Ship comply with reference (d) for documenting INSURV items. |
| 75 | a. (Submarines only) Silencing Deficiency Conference:<br><br>(1) Purpose - Naval Surface Warfare Center Carderock Division (NSWCCD) presents results of acoustic trials data analysis.<br><br>(2) Participants - NSWCCD, Ship Program Manager, Shipbuilder, TYCOM, Ship. |

| Time | Event |
|---|---|
| 90 | a. Ship Program Manager issue final list of SCN funded items authorized for accomplishment during PSA. |
| 100 | a. Supervising Authority issue final PSA work package. |
| 149 | a. Pre-Arrival Conference:<br><br>(1) Purpose - To review all work authorized by all customers with available cost estimates and to establish arrival procedures and conditions for the ship. Review and take action on Post Delivery Deficiency Items (PDDI).<br><br>(2) Participants - Ship Program Manager, Supervising Authority, Shipbuilder, TYCOM, ISIC and Ship. |
| 154 | a. Commence PSA.<br><br>b. Arrival Conference (Ship Program Manager and TYCOM participation not required unless specifically requested). |
| 214-274 | a. End PSA. (Completion date varies with platform). |
| | a. Ship submit final status report of all deficiencies (Departure Report). |
| *<br><br>** | a. TYCOM comment on final status report from ship and submit recommendations for Ship Program Manager action.<br><br>b. TYCOM issue follow-up letter requesting Ship Program Manager final resolution and action on government responsible uncorrected deficiencies. |
| *** | a. Work limiting date for SCN appropriation. |

* 30 days after completion of PSA

** 45 days after completion of PSA

*** Refer to Appendix A of this chapter, Note (1)

(This Page Intentionally Left Blank)

## APPENDIX C

## SUMMARY OF MAJOR MILESTONES FOR POST SHAKEDOWN AVAILABILITY

| Event | Cognizance | Approximate Schedule see Note 1 |
|---|---|---|
| A. Periodic Monitoring Inspections | ISIC/TYCOM | Start to completion |
| B. (Nuclear Powered Ships only) Pre-Criticality Inspection (required if reactor shutdown greater than 16 weeks) | ISIC/TYCOM | Criticality -4 weeks |
| C. (Nuclear Powered Ships only) Post-Overhaul Reactor Safeguard Examination (per reference (f) if reactor shutdown greater than 6 months) | Fleet Commander | Criticality -4 weeks |
| D. Light-Off Assessment (LOA) (if propulsion plant shut down greater than 120 days) | Fleet Commander/ TYCOM | -30 days |
| E. (Nuclear Powered Ships only) Approve Sea Trials Agenda | ISIC/TYCOM | -30 days |
| F. (Submarines only) Salvage Inspection | ISIC/TYCOM | -28 days |
| G. (Submarines only) Escort Recommendation Message | ISIC/TYCOM | -28 days |
| H. Dock Trials | Commanding Officer (CO) of ship | -21 days |
| I. Crew Certification (See Note 2) | ISIC/TYCOM | -9 days |
| J. (Submarines only) Material Certification (per Volume V, Part I, Chapter 6, Audit Re-entry Control, Departure from Specifications, URO MRC) | ISIC/TYCOM | -9 days |
| K. (Submarines only) Crew and Material Certification Message | ISIC/TYCOM (includes H & I above) | -9 days |
| L. (Submarines only) Supervising Authority Message Certifying Material Condition Satisfactory for Fast Cruise | Supervising Authority | -9 days |
| M. (Submarines only) Ship Program Manager Message Certifying Systems Satisfactory for Sea Trials and Depth Authorization | Ship Program Manager | -9 days |
| N. (Nuclear Powered Ships only) Message Certifying Crew and Material Readiness to Ship Program Manager | TYCOM | -8 days |

| Event | Cognizance | Approximate Schedule see Note 1 |
|---|---|---|
| O. (Nuclear Powered Ships only) Authorize Ship to Commence Fast Cruise upon receipt of NAVSEA Permission to Conduct Critical Operations | TYCOM | -8 days |
| P. Commence Fast Cruise | CO of Ship | -7 days (2 days on, 1 off, 2 on)(length of Fast Cruise may be reduced based on length and extent of availability) |
| Q. Report Completion of Fast Cruise and Ready for Sea Trials Message | Supervising Authority to TYCOM (CO of Ship concur) | -1 day |
| R. (Submarines only) Report Material Certification of Ship | CO of ship | -1 day |
| S. Authorize Commencement of Sea Trials Message | TYCOM to ISIC/TYCOM to Ship | -1 day |
| T. (Submarines only) Depth Authorization Message | TYCOM | -1 day |
| U. Commence Sea Trials | CO of Ship | 0 |
| V. Sea Trials Completion Message | Supervising Authority | +1 day |
| W. (Submarines only) Ship Program Manager Message Certifying Ship Satisfactory for URO | Ship Program Manager | +1 day |
| X. (Submarines only) URO Message | TYCOM | +1 day |

NOTE 1: Unless otherwise indicated, scheduled date referenced to Sea Trials underway date.

NOTE 2: For Submarines, Crew Certification required if crew turnover exceeds 15% or reactor shutdown for more than six months. If required, use Phase II Checklist of reference (g). For surface ships not underway for a period of six months or more Crew Certification is encouraged but at the ISIC's discretion. Nuclear Powered Aircraft Carrier Crew Certification is not required for PSAs less than 12 month duration unless formally requested by the CO.

## APPENDIX D

## MINIMUM POST SHAKEDOWN AVAILABILITY SEA TRIAL REQUIREMENTS FOR A SUBMARINE DEEP DIVE

1. The following tests and evolutions will be carried out following the initial tightness dive and prior to the deep dive:

   a. Transmit initial tightness dive complete message. Charge air banks and battery if necessary. The ship may be submerged while charging air banks provided the depth of the ship does not exceed other guidelines in this instruction, or those of the flooding bill or ship's operating procedure.

   b. If escort is required, detach the escort after initial tightness dive. The escort will then proceed to station for the deep dive. Ensure that deep dive rendezvous time and location are clearly established before the escort is released. The escort may be detached after completing all initial tightness dive events and surfacing using EMBT blow from depths of 400 feet or deeper. The escort may be used for additional testing on the transit. Transit depths shall not exceed initial tightness dive depths.

2. The following tests and evolutions will be carried out immediately prior to or during the deep dive:

   a. Ensure the air banks are charged to within 200 psi of full pressure.

   b. Line up Main Ballast Tank (MBT) system for normal operation.

   c. Take sounding. Accurately fix ship's position within the specified dive area along with the maximum water depth as given in reference (h). Transmit the commencing deep dive message.

   d. Submerge to periscope depth and trim the ship.

   e. Obtain stop trim. Take readings required to make a check of ballasting.

   f. Trim ship to maintain neutral buoyancy (Note 1).

   g. Line up propulsion plant for maximum reliability in accordance with ship's instructions.

   h. Rig ship for deep submergence. All systems should be in maximum secure condition with unnecessary sea systems isolated as prescribed in reference (i).

   i. Station additional personnel throughout the ship to inspect for leaks as deemed necessary.

   j. At depth specified in reference (i):

      (1) Inspect for leaks.

      (2) Adjust trim (Note 1).

(3) Communicate with the escort (if escort required) at each 100 feet depth increment or at ten minute intervals, whichever is sooner. If communications are lost, return to a depth at which communications can be re-established before continuing (Note 2).

k. At depths listed for hull valve cycling in reference (i) and at the Maximum Authorized Operating Depth:

(1) Check accuracy of gages and repeaters (Note 3).

(2) Conduct operational test of signal ejectors (Note 4).

(3) Check shaft bearings and stern tubes for excessive heating, leakage and noise. Sealol shaft seals must be tested at each depth and for the required time, as specified in the approved class test form.

(4) Cycle rudder and planes through full throw to check for binding. Cycling of rudder and planes through full throw should be limited to 90% of test depth (Note 5).

(5) Operate all Main Seawater/Auxiliary Seawater hull and back-up valves and those other seawater system valves worked during the availability (using remote closures, as applicable, from flooding control stations) that are required to maintain propulsion and other functions vital to the ship's operation at increments of depth specified in reference (i).

(6) Operate trim and drain pumps, discharging to sea.

(7) Cycle main vents to check for binding.

**NOTE: REQUIRED SYSTEMS ARE LISTED IN PARAGRAPH 4b OF REFERENCE (i). OBSERVE RESTRICTIONS ON OPERATION OF SYSTEMS LISTED IN PARAGRAPH 4d OF REFERENCE (i). BALL VALVE TRASH DISPOSAL UNITS (TDU) (WITHOUT REMOTE CLOSURES) WILL NOT BE OPERATED BELOW 200 FEET.**

l. Surface fully with EMBT blow in accordance with the applicable URO MRC. Check air bank pressures before and after blow.

m. Transmit completion of deep dive message.

3. The following tests and evolutions will be carried out submerged following the deep dive:

a. Steering and diving operation at full speed (Note 6).

b. Full power run (Notes 6, 7 and 8).

c. Steep angles - operate ship through several depth changes using large up and down angles to check operation of ship machinery (Note 7).

d. Time raising each periscope and mast at the maximum depth and speed for which they are designed. Check training feature where applicable.

e. Run and observe air conditioning plants throughout trials noting deficiencies and to demonstrate ability to carry entire maximum existing ship's air conditioning load or 100 percent capacity.

NOTES

1. Deep dive should be conducted using moderate speed and constantly adjusting trim, at depths specified in reference (i), to maintain neutral buoyancy. Moderate speed shall be defined as that range of speed that allows the ship to recover from a loss of stern plane control or flooding casualty.

2. In the execution of any Sea Trial, whether escorted or not, submarine COs are reminded of their responsibility to communicate with the escorts and/or shore authorities within the prescribed, previously agreed upon time limits to avoid initiation of lost submarine procedures.

3. Compare all depth and pressure gages; check operation of planes and rudder in all modes. Depth and pressure gages should be checked as soon as each next specified depth is reached.

4. Integrity of torpedo tubes, launchers or signal ejectors shall be established by admitting sea pressure through equalizing lines or flooding connection and the muzzle doors operated before conducting operational tests. Shoot waterslugs from specified torpedo tubes, launchers or signal ejectors, at specified depths, as required by Class/Ship Deep Dive Test, down to ship/torpedo tube, launcher or signal ejector limiting depth, whichever is less. Shoot pyrotechnics from signal ejectors or launchers on initial tightness dive and at test depth on the deep dive.

5. At maximum safe speed, operate the rudder and planes through full throw in both directions in normal and emergency power.

6. Run full power submerged for at least two hours. Operate at minimum non-cavitating depth but not to exceed 400 feet (SSN 688 Class may exceed 400 feet, as required, consistent with the submerged operating envelope but not to exceed one-half test depth plus 50 feet). Water depth is not limited for this event.

7. The required sequence of events is initial dive, deep dive, full power run submerged, then high speed maneuverability and steep angle tests. Initial high speed ship control tests, steep angle tests and exercises at major casualties shall be conducted in water that does not exceed one and one-half times design test depth (which equates to collapse depth). In every instance where the Maximum Authorized Operating Depth is exceeded, a report shall be made in accordance with reference (j), paragraphs 3.10 and 3.26 through 3.28.

8. The submerged full power ahead test for commissioned nuclear powered submarines shall be terminated by a back emergency bell. The duration of the back emergency bell shall be limited to 45 seconds, to be followed immediately by an appropriate ahead bell. Caution must be exercised to avoid stern way.

(This Page Intentionally Left Blank)