

JOINT FLEET MAINTENANCE MANUAL
VOLUME II
INTEGRATED FLEET MAINTENANCE
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APPENDIX A
LIST OF ACRONYMS

2-Kilo (2K)	3-M Maintenance Action Form
3-M	Maintenance and Material Management
A&I	Alteration and Improvement
ACRN	Accounting Classification Reference Number
AERP	Advanced Equipment Repair Program
AIM	Advanced Industrial Management
AIM4RMC	Advanced Industrial Management for Regional Maintenance Centers
AIPS	Alteration Installation Planning System
AIT	Alteration Installation Team
AMCA	Automated Machinery Condition Analysis
AMPS	Afloat Master Planning System
ARRS	Analysis, Record and Report Section
ASF	Assist Ship's Force
AWP	Availability Work Package
AWPM	Availability Work Package Manager
AWR	Automated Work Request
AWS	Attack Weapons Systems
BAWP	Baseline Availability Work Package
BCP	Ballast Control Panel
BQC	Emergency Underwater Telephone
C5RA	Combat Systems, Command, Control, Communications and Computer Readiness Assessment
CAR	Corrective Action Request
CARPER	Aircraft Carrier Planned Equipment Replacement
CASREP	Casualty Report
CBM	Condition Based Maintenance
CDMD-OA	Configuration Data Managers Database-Open Architecture
CDNS	Cancellation Deferral Notification System
CFR	Contractor Furnished Report
CHENG	Chief Engineer
CJ	Critical Job
CM	Continuous Maintenance
CMAV	Continuous Maintenance Availability
CMP	Class Maintenance Plan
CNO	Chief of Naval Operations
CNRMC	Commander, Navy Regional Maintenance Center
CNSL	Commander, Naval Surface Atlantic
CNSP	Commander, Naval Surface Pacific
CO	Commanding Officer
COMNAVSEASYSKOM	Commander Naval Sea Systems Command
COMSUBDEVRON	Commander Submarine Development Squadron
COMSUBLANT	Commander Submarine Force, United States Atlantic Fleet
COMSUBPAC	Commander Submarine Force, United States Pacific Fleet
COMSUBRON	Commander, Submarine Squadron
COSAL	Coordinated Shipboard Allowance List
CPA	Carrier Planning Activity
CPJ	Critical Path Job
CS/CCS	Command and Control Systems
CSMP	Current Ship's Maintenance Project

CVN	Nuclear Powered Aircraft Carrier
CWP	Controlled Work Package
DFS	Departure From Specification
DSRA	Docking Selected Restricted Availability
DSS	Deep Submergence System
DTG	Date Time Group
EA	Executing Activity
EAB	Emergency Air Breathing
ECM	Electronic Counter Measure
EDL/ESL	Equipment Deficiency/Status Log
EM	Emergent Availability
EMBT	Emergency Main Ballast Tank
EOC	Engineered Operating Cycle
EPCP	Expanded Process Control Procedures
EOG	Electrolytic Oxygen Generator
ESM	Electronic Warfare Support Measures
ESR	Engineering Service Request
FAC	Funding Activity Code
FBW SCS	Fly-By-Wire Ship Control Systems
FDNF	Forward Deployed Naval Forces
FFP	Firm Fixed Price
FMA	Fleet Maintenance Activity
FMPMIS	Fleet Modernization Program Management Information System
FRP	Fleet Readiness Plan
FWP	Formal Work Package
FY	Fiscal Year
HM&E	Hull, Mechanical and Electrical
IDD	Interim Drydocking
IDIQ	Indefinite Delivery, Indefinite Quantity
IEM	Inactive Equipment Maintenance
IFF	Identification Friend or Foe
ILO	Integrated Logistics Overhaul
ILS	Integrated Logistics Support
IMA	Intermediate Maintenance Activity
IMPAC	Integrated Modernization Planning for Aircraft Carriers
INSURV	Board of Inspection and Survey
IPC	Integrated Planning Conference
IPTD	Integrated Project Team Development
ISE	Individual Ships Exercises
ISEA	In-Service Engineering Activity
ISIC	Immediate Superior In Command (Group or Squadron)
IT	Information Technology
IWS	Integrated Work Schedule
JCN	Job Control Number
JFMM	Joint Fleet Maintenance Manual
KTR	Contractor
LAR	Liaison Action Request
LCPC	Life Cycle Planning Conference

LDS	Logistics Data System
LLTM	Long Lead Time Material
LMA	Lead Maintenance Activity
LOA	Light-Off Assessment
MA	Maintenance Activity
MACHALT	Machinery Alteration
MBT	Main Ballast Tank
MCA (Submarines)	Material Condition Assessment
MCA (Surface Ships)	Machinery Condition Analysis
MCAI	Material Condition Assessment Inspection
MCAP	Material Condition Assessment Process
MDCO	Maintenance Document Control Office
MDS	Maintenance Data System
MIP	Maintenance Index Page
MJC	Master Job Catalog
MLOC	Master Light-Off Checklist
MM	Maintenance Manager
MMBP	Maintenance and Modernization Business Plan
MOA	Memorandum/Memoranda of Agreement
MRC	Maintenance Requirement Card
MSC	Master Specification Catalog
MSCMO	Master Specification Catalog Maintenance Office
MSMO	Multi-Ship Multi-Option
MSR	Master Ship Repair Contractor
MST	Maintenance Support Team
MT	Maintenance Team
MTT	Mobile Training Team
MWO	Maintenance Work Order
NAVAIR	Naval Air Systems Command
NAVIMFAC	Naval Intermediate Maintenance Facility
NAVSEA	Naval Sea Systems Command
NAVSEA 08	Naval Sea Systems Command Nuclear Propulsion Directorate
NDE	Navy Data Environment
NDE-SIDE	NDE-SPAWAR Integrated Data Environment
NEC	Navy Enlisted Classification
NMD	Navy Maintenance Database
NMP	Navy Modernization Program
NNSY	Norfolk Naval Shipyard
NPEB	Nuclear Propulsion Examining Board
NRL	Naval Research Laboratory
NRMC	Navy Regional Maintenance Center
NRMD	Nuclear Regional Maintenance Department
NRRO	Naval Reactor Representative Office
NSA	Naval Supervisory Authority
NSSA	Norfolk Ship Support Activity
NSSFNL	Naval Submarine Support Facility New London
NSWC	Naval Surface Warfare Center
NSWCCD	Naval Surface Warfare Center, Carderock Division
NSY	Naval Shipyard
NWRMC	Northwest Regional Maintenance Center
OIC	Officer In Charge
OMMS-NG	Organizational Maintenance Management System - Next Generation
OPNAV	Naval Operations

OPORD	Operational Order
OPTAR	Operating Target
OQE	Objective Quality Evidence
ORDALT	Ordinance Alteration
PAC	Pre-Arrival Conference
PARM	Participating Acquisition Resource Managers
PB4M	Planning Board for Maintenance
PCD	Production Completion Date
PCO	Primary Contracting Officer
PE	Port Engineer
PEO	Program Executive Officer
PHNS	Pearl Harbor Naval Shipyard
PIRA	Pre-Inactivation Restricted Availability
PLAD	Plain Language Address Directory
PMA	Phased Maintenance Availability
PMR	Periodic Maintenance Requirement
PMS	Planned Maintenance System
PMT	Performance Monitoring Team
POET	Point of Entry Testing
PORSE	Post Overhaul Reactor Safeguards Examination
PPEA	Propulsion Plant Engineering Activity
PR	Planning Review
PRC	Project Review Conference
PTD	Provisioning Technical Documentation
PVI	Product Verification Inspection
QA	Quality Assurance
QAS	Quality Assurance Supervisor
QMP	Quality Maintenance Plan
QMS	Quality Management System
RCC	Request for Contract Change
RCD	Required Completion Date
REC	Re-Entry Control
RLAR	Reverse Liaison Action Request
RMAIS	Regional Maintenance Automated Information System
RMC	Regional Maintenance Center
RMO	Reactor Maintenance Officer
RMT	Regional Maintenance Team
ROV	Repair of Other Vessels
RPCCR	Reactor Plant Configuration Change Report
RPM	Revolutions Per Minute
RRC	Regional Repair Center
RSE	Reactor Safeguards Examination
RSG	Regional Support Group
SBAT	SUPSHIP Bath
SC	Ship Change
SCA	System Certification Authority
SDI	Ship's Drawing Index
SDM	Ship Design Manager
SEIE	Submarine Escape Immersion Ensemble
SERMC	Southeast Regional Maintenance Center
SF	Ship's Force
SHIPALT	Ship Alteration

SID	Ship Installation Drawing
SITREP	Situation Report
SJM	Selected Job Management
SNAP	Ship's Non-Tactical Automated Data Processing System
SNPMTT	Surface Nuclear Propulsion Mobile Training Team
SOE	Submerged Operating Envelope
SOSMIL	Safety of Ship Maintenance Item List
SPALT	Strategic Systems Programs Alteration
SPAWAR	Space and Naval Warfare Systems Command
SPM	Secondary Propulsion Motor
SPM	Ship Program Manager
SRA	Selected Restricted Availability
SRDRS	Submarine Rescue Diving Recompression System
SRF-JRMC	Ship Repair Facility - Japan Regional Maintenance Center
SSBN	Nuclear-Powered Ballistic Missile Submarine
SSCA	SUBSAFE Certification Audit
SSES	Ship System Engineering Station
SSGC	SUPSHIP Gulf Coast
SSGN	Nuclear-Powered Guided Missile Submarine
SSP	Ship Specification Package
SSP	Strategic Systems Programs
SSPINST	Strategic Systems Programs Instruction
SSR	Ship Selected Records
SSRAC	NAVSEA Standard Specification for Ship Repair and Alteration Committee
SUBLANT	Submarine Atlantic
SUBMEPP	Submarine Maintenance Engineering, Planning and Procurement Activity
SUBPAC	Submarine Pacific
SUBSAFE	Submarine Safety
SUPSHIP	Supervisor of Shipbuilding
SUPSHIP NN	Supervisor of Shipbuilding Newport News
SURFMEPP	Surface Maintenance Engineering Planning Program Activity
SWLIN	Ships Work List Item Number
SWRMC	Southwest Regional Maintenance Center
SWS	Strategic Weapon System
SYSCOM	Systems Command
T/A	Type Availability
TAAS-INFO	Tech Assist, Assessments and Scheduling Information Software
TAMS	TYCOM Alteration Management System
TAR	Technical Analysis Report
TDA	Type Desk Assistant
TDO	Type Desk Officer
TEMPALT	Temporary Alteration
TEMPEST	National Policy on the Control of Compromising Emanations
TEMPMOD	Temporary Modification
TRFKB	TRIDENT Refit Facility Kings Bay
TRIPER	TRIDENT Planned Equipment Replacement
TSO	Temporary Standing Order
TSRA	Total Ship Readiness Assessment
TWD	Technical Work Document
TYCOM	Type Commander
UIC	Unit Identification Code
UNF	Unfunded
UNSEARESCOM	Undersea Rescue Command
UQC	Underwater Telephone

URO	Unrestricted Operation
WAF	Work Authorization Form
WDC	Work Definition Conference
WOO	Window of Opportunity
WPER	Work Package Execution Review
WQC	Underwater Telephone
WSS	Work Sequence Schedule
XAZ	Scheduled Continuous Maintenance Availability
XCM	Unscheduled Continuous Maintenance Availability
XCZ	CNO Scheduled Availability
XEM	Year-long Emergent Work Availability
YLCM	Year Long Continuous Maintenance

APPENDIX B
GLOSSARY OF TERMS

<u>TERM</u>	<u>DEFINITION</u>
Charging to a Unit Identification Code (UIC)	The action describing a person, who is normally categorized as direct support labor, charging his time to a ship's UIC and while not working on a specific work item/Maintenance and Material Management Maintenance Action Form (2K). When recording charges in this manner, he will charge to a Maintenance Work Order (MWO) that was created for that specific purpose. The nature of that MWO will be directly related to production but not to one specific job or 2K.
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.
Direct Labor Category	Assigned to those production personnel who charge their time to a MWO that originated from a specific 2K.
Direct Support Labor Category	Assigned to those personnel who are first line supervisors of direct personnel or who directly support production and charge to a UIC use Direct Support Labor. Also includes administrative personnel assigned to production; however, they will normally charge to overhead. Some examples of personnel likely to charge as Direct Support Labor: Port Engineer, Ship Supervisors, Production Quality Assurance, Engineers, Technical Assist Personnel, Planners.
Dock Trials	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.
Fleet Maintenance Activity (FMA)	FMAs include tenders, shore based maintenance activities (Regional Maintenance Centers, Naval Ship Repair Facilities, Naval Submarine Support Facilities, Naval Intermediate Maintenance Facilities (NAVIMFAC), TRIDENT Refit Facilities, Weapons Repair Facilities and other activities of that type) and supporting activities (port services, etc. that perform maintenance on Fleet assets).
Indirect Labor Category	Assigned to those personnel who charge their time to a cost center as overhead and do not charge to a UIC or MWO. Some examples of personnel that are considered Indirect: Master At Arms, Training, Career Councilor.
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 (Naval Underwater Weapons Center, Naval Ships Weapons Center, etc.).
Initial Dive	For purposes of seawater valve and system testing, as defined in reference (e), the first dive to a depth not previously reached during the trials.

Lead Maintenance Activity	The single activity responsible for integrating all maintenance and modernization on U.S. Naval ships during any type of availability.
Long Lead Time Material	Material which is not normally available in local stock and may not be received prior to the start of the availability if not ordered prior to the Work Definition Conference (WDC).
Maintenance Manager	Those persons, such as Port Engineers, Ship Superintendents, Ship's Coordinator and Maintenance Planning Managers, assigned to assist Ship's Force in the tracking of work candidates, development of work packages and tracking of FMA/Industrial Activities assigned jobs.
Maintenance Support Team (MST)	Military team that performs the function of Ship's Force, and reports to the supported ship's Immediate Superior In Command (ISIC) and the Operational Commander.
Maintenance Work Order (MWO)	The Automated Information System object that personnel use in order to charge time to a work item/2K.
Major Chief of Naval Operations (CNO) Maintenance Availability	An availability of six months or greater duration performed by industrial activities under NAVSEA management or contract administration or as designated by the TYCOM or NAVSEA.
Master Specification Catalog (MSC)	Database of templates for all Naval Ship Classes. It is a module located within NMD.
Maximum Operating Depth (Also Maximum Authorized Operating Depth)	The depth to the keel for a particular submarine which is authorized by Commander Submarine Force, United States Atlantic Fleet/Commander Submarine Force, United States Pacific Fleet (COMSUBLANT/COMSUBPAC) 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 by COMSUBLANT/COMSUBPAC may be less than, but in no case exceed, the depth recommended by NAVSEA.
Minor CNO Maintenance Availability	An availability of less than six months in duration scheduled by and under Type Commander management.
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 Supervisory Authority/Supervisory 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.
Navy Maintenance Database (NMD)	Worldwide database used for all repairs across Naval Ship Classes. Used to develop work items for repair or modernization.
Refurbishment Level Maintenance	The actions taken to return a component to "A" condition (like-new condition). Normally done under rotatable pool (Advanced Equipment Repair Program, TRIDENT Planned Equipment Replacement, etc.) programs by Designated Overhaul Points. Designated Overhaul Points must be certified to have the industrial capability to meet the program requirements for performing quality work and have the capacity to meet established Refurbishment Turnaround Times.

VOLUME II

PART I

CHAPTER 2

MAINTENANCE AND MODERNIZATION PROGRAM

REFERENCES.

- (a) NAVSEAINST 5400.95 - Waterfront Engineering and Technical Authority Policy
- (b) NAVSEA SL720-AA-MAN-030 - Navy Modernization Process Management and Operations Manual (NMP-MOM)
- (c) OPNAVINST 4700.7 - Maintenance Policy for U.S. Naval Ships
- (d) NAVSEA S9002-AK-CCM-010/6010 - Industrial Ship Safety Manual for Submarines
- (e) SSPINST 4720.1 - Policies and Procedures for Alteration of Strategic Weapon System Equipment
- (f) NAVSEA 4350.2 - Contract Work Onboard Nuclear-Powered Ships
- (g) NAVSEA S9AA0-AB-GOS-010 - General Specifications for Overhaul of Surface Ships
- (h) NAVSEA T0300-AA-MMI-010 - Commercial Industrial Services (CIS) Manual
- (i) NAVSEAINST 4710.6 - Submarine Advanced Equipment Repair Program (AERP); Assignment of Responsibilities for and Administration of
- (j) SSN21-081-PMS350L-035 - Rotatable Pool Management Plan for the SEAWOLF Class SSN
- (k) NAVSEAINST C9210.4 - Changes, Repairs and Maintenance to Nuclear Powered Ships
- (l) NAVSEAINST 4720.23 - Deep Submergence Systems Temporary Modifications
- (m) NAVSEA SL720-AA-MAN-010 - Fleet Modernization Program (FMP) Management and Operations Manual
- (n) NAVSEAINST 4130.9 - Configuration Control Procedures for Preparation of Ordnance Alterations (ORDALTS) to Expendable and Non-Expendable Items
- (o) NAVSEAINST 4720.15 - Machinery Alterations on HM&E Equipment and Systems
- (p) MIL-STD-2039 - Field Changes and Field Change Kit Preparation
- (q) COMLANTFLTINST 4700.10 - Policies and Procedures for Fleet Technical Support (FTS) (Cancelled)
- (r) COMPACFLTINST 4341.1 - Fleet Technical Assistance (FTA) Program (Cancelled)
- (s) NAVSEA 0989-LP-043-0000 - Commissioned Surface Ship General Reactor Plant Overhaul and Repair Specification
- (t) NAVSEAINST 4730.2 - Shipyard Inspection and Required Conditions of Propulsion Plant Systems (Non-Nuclear) for Nuclear-Powered Surface Ships
- (u) NAVSEA STD DWG 605-5529700 - CVN 68 Class Commissioned Ships Reactor Plant Paint Schedule
- (v) NAVSEA S9086-VD-STM-010-NSTM Chapter 631 - Preservation of Ships in Service - General
- (w) TMIN SL700-AB-GYD-010 - Pictorial Guide for Painting Ships Interiors
- (x) NAVSEA STD DWG 213-4362626 - Lagging and Insulation Schedule for Reactor Plant Systems
- (y) CNAP/CNALINST 9210.4 - Nuclear Propulsion Note 9200-2
- (z) NAVSEAINST 9304.1 - Shipboard Electric Cable and Cableway Inspection and Reporting Procedures
- (aa) DOD-STD-2003 - Military, Standard, Electric Plant Installation Standard Methods for Surface Ships and Submarines
- (ab) NAVSEA 0989-LP-062-4000 - Naval Nuclear Quality Control Manual for Shipyards
- (ac) NAVSEA 0989-031-4000 - Reactor Plant Instrumentation and Control Equipment Maintenance
- (ad) NAVSEA 0989-LP-026-1000 - A4W/A1G Reactor Plant Manual
- (ae) OPNAVINST 3120.32 - Standard Organization and Regulations of the U.S. Navy
- (af) COMLANTFLTINST 5400.2 - U.S. Atlantic Fleet Regulations
- (ag) COMPACFLTINST 5400.3 - U.S. Pacific Fleet Regulations
- (ah) OPNAVNOTE 4700 - Representative Intervals, Durations, Maintenance Cycles, and Repair Mandays for Depot Level Maintenance Availabilities of U.S. Navy Ships
- (ai) OPNAVINST 4780.6 - Policy for Administering Service Craft and Boats in the U.S. Navy
- (aj) MIL-P-24534 - Planned Maintenance System: Development of Maintenance Requirement Cards, Maintenance Index Pages, and Associated Documentation
- (ak) MIL-STD-1388 - Logistic Support Analysis

- (al) OPNAVINST 3120.33 - Submarine Extended Operating Cycle (SEOC) Program
- (am) NAVSEA TL710-AB-MAN-010 - Depot Modernization Period (DMP) Procedures Manual
- (an) OPNAVNOTE 4710 - Fleet Depot Maintenance Schedule
- (ao) SSPINST 5600.11 - Preventive Maintenance Management Program for Strategic Weapon Systems Equipment and Associated Material

LISTING OF APPENDICES.

- A Material Condition Assessment Process Timeline
- B CVN Propulsion Plant Material Condition Assessments
- C System Certification Checklist for CNO Availability Key Events (Aircraft Carriers Only)
- D Scope of Visual Inspections of Reactor Plant Fluid Systems
- E First 100 Hours for Surface Force Scheduled Availability
- F Final 100 Hours for Surface Force Scheduled Availability

2.1 PURPOSE. The purpose of this chapter is to provide Fleet Commanders' guidance for the maintenance of ships throughout their operating cycle in accordance with references (a) through (ao). This includes maintenance levels, strategies, programs and modernization which define and support all maintenance accomplished in accordance with technical specifications and standards during a ship's operating cycle.

2.1.1 Naval Supervisory Authority.

- a. Naval Supervisory Authority Definition. The Naval Supervisory Authority (NSA) is the single Naval activity, as indicated in Table 2-1 of this chapter, responsible for the integration, oversight and verification of all work accomplished by all activities (i.e., Naval Shipyards (NSY), Regional Maintenance Centers (RMC), Supervisors of Shipbuilding (SUPSHIP) contractors, Type Commander (TYCOM) sponsored contractors, Intermediate Maintenance Activities (IMA), Alteration Installation Teams (AIT) and Ship's Force) working within the assigned availability, and acts as the single point of contact for this work. The NSA will provide the oversight required to ensure that all work in the assigned availability (e.g., Chief of Naval Operations (CNO) availabilities, Continuous Maintenance Availability, Emergent Availability) is authorized and completed in compliance with applicable technical requirements and maintenance/modernization policy, and that all work meets schedule, quality and environmental/safety requirements. The NSA must possess a Naval Sea Systems Command (NAVSEA) technical warrant.
- b. NSA Assignment. In most cases, the NSA is assigned by the Fleet Maintenance Officer and TYCOM in accordance with Table 2.1. An NSA must be assigned to all CNO availabilities and to all **contracted work** where the majority of the work is performed onboard the ship. **However, for repair/maintenance/modernization work packages where TRIDENT Refit Facility Kings Bay (TRFKB), Naval Submarine Support Facility New London (NSSFNL) or the Tender is assigned as the Lead Maintenance Activity (LMA), no NSA Assignment is required (whether or not the work package includes contracted work). Local Technical Authority for the LMA is delegated by their assigned Chief Engineer in accordance with reference (a) as defined in a Memorandum of Agreement (MOA) between the responsible organizations. When such an MOA exists, the LMA (TRFKB, NSSFNL, Tenders) executes the specific NSA responsibilities of paragraphs 2.1.1.d.(1) through 2.1.1.d.(4) of this chapter when no NSA is assigned.**
 - (1) Alterations installed by Alteration Installation Teams (AIT) per reference (b) can only be executed in availabilities that have a designated NSA, **with the exception of availabilities where TRFKB, NSSFNL, or Tenders are the assigned LMA.** If the AIT install is being performed outside a CNO availability, the AIT Sponsor may propose NSA responsibility be assigned to any organization that is qualified as an NSA for the type of work being performed.
 - (2) An NSA is not required if the work is being performed by a U.S. Navy LMA outside a CNO availability.

- (3) The NSA will normally be the activity assigned based on the geographic area covered by the assigned RMC, NSY or SUPSHIP, as indicated in Volume VI, Chapter 2, Table 2-1 of this manual. If this is not practical, the NSA assignment will be made based on the area of responsibility of the cognizant Chief Engineer as delineated in reference (a).
- (4) As noted in reference (b), NSA designation does not apply to:
- (a) Alterations to nuclear components and systems under the cognizance of the Deputy Commander for Nuclear Propulsion (NAVSEA 08).
 - (b) Strategic Systems Program Alterations issued by the Director, Strategic Systems Programs.
 - (c) Temporary modifications performed as part of a shipyard availability to support industrial work or associated testing.
 - (d) Technical support personnel and certification teams who only provide technical guidance, equipment check-out and grooming or certification of systems or on-site training for Ship's Force not associated with the accomplishment of an alteration or troubleshooting.
 - (e) Technical support personnel for non-invasive installations supporting short term experimentation efforts where desktop/laptop computers are brought aboard and not connected to the network to support clearly defined experimentation objectives for a finite period of time and do not require AITs for installation.
- c. NSA Qualification. In order to be qualified to perform the functions of an NSA, the organization must have a Chief Engineer holding a NAVSEA Technical Warrant. For this reason, the only organizations qualified to perform the functions of NSA are the NSYs, the RMCs and the SUPSHIPS. Facilities such as the Tenders, **NSSFNL**, **TRFKB** and Ship's Force cannot be considered NSAs.

NOTE: DELEGATION OF NSA RESPONSIBILITIES CAN BE ACCOMPLISHED THROUGH A MOA THAT IDENTIFIES DUTIES, RESPONSIBILITIES AND OVERSIGHT FUNCTIONS. THE NSA IS RESPONSIBLE FOR ALL WORK ACCOMPLISHED BY ALL ACTIVITIES AND ACTS AS THE SINGLE POINT OF CONTACT.

- d. NSA Responsibilities. These responsibilities include but are not limited to:
- (1) Coordination with other Maintenance Activities (e.g., NSY, RMC, SUPSHIP, AIT, Ordnance Alteration (ORDALT)/Temporary Alteration (TEMPALT) Installation Teams) through an authorized MOA.
 - (2) Single point of contact for the LMA and shipboard personnel.
 - (3) Verify completion of work for milestones, key events, end of availability, availability departure report based on documentation provided by all maintenance activities.
 - (4) Based on the amount of work accomplished, the NSA may also assume the role of the LMA per paragraph 2.1.2 of this chapter.
 - (5) For CNO availabilities, the NSA shall:
 - (a) (For NSY only) Also serve as the LMA.
 - (b) Participate in all work definition, planning and completion conferences.
 - (c) Facilitate planning efforts. Ensure detailed planning and integration of the work package is accomplished to provide a schedule that incorporates the work and testing of all organizations involved in the availability. The schedule shall address work definition, key events, shipchecks, job summary, material preparations and strategy preparations. Identify milestones with sufficient detail to measure intermediate

progress toward each key event. Ensure orientation briefings and training are conducted as necessary so that personnel understand applicable project processes and requirements. Identify their appropriate points of contact.

- (d) Prior to Fast Cruise, Sea Trials and availability completion, verify all authorized work has been completed unless waived. For work performed by contractors, ensure all provisions of the contract have been fully executed.
 - (e) During work execution, review all changes to specifications and work items impacting propulsion plant or designated areas of nuclear powered ships to ensure requirements are met.
 - (f) Participate in critiques and problem investigations (e.g., Trouble Reports) as necessary.
- (6) For alterations installed by AITs, the NSA, as designated in Table 2-1, as required by reference (b) shall:
- (a) Monitor the effectiveness and the quality of AIT managers' execution of Quality Assurance oversight responsibilities by assessing their execution of Quality Assurance oversight responsibilities and by Quality Sampling. Request Qualification Records as needed in support of spot checks.
 - (b) Perform inspections of installations, on a sampling basis, and use the sampling evidence to indicate conformance or nonconformance with NAVSEA requirements.
 - (c) Conduct AIT In/Out briefs and coordinate with the AIT Manager and Ship's Force to ensure satisfactory completion of alterations.
 - (d) Receive copies of Integrated Logistics System products from the AIT and verify they were properly distributed.
 - (e) Ensure completion reports are issued and for any work not accomplished, assure a Current Ship's Maintenance Project (CSMP) Job Control Number is issued.

Table 2-1

Maintenance Availability	NSA	LMA
CNO Public (1)	NSY	NSY
CNO Private (1)	RMC/SUPSHIP (2)	Contractor (KTR)
Non-CNO Public (3) (4)	RMC/NSY	RMC/NSY Fleet Maintenance Activity (FMA)
Non-CNO Private (3)	RMC/SUPSHIP (2)	KTR
Emergent/Voyage repair (4)	RMC/SUPSHIP/NSY	FMA/RMC/NSY/KTR
New Construction	SUPSHIP	KTR
AIT availabilities	RMC/SUPSHIP/NSY	FMA/RMC/NSY/AIT KTR
Other (4)	N/A	FMA/Ship's Force

NOTES:

1. Per reference (c).
2. Pearl Harbor NSY and Intermediate Maintenance Facility and Puget Sound NSY and Intermediate Maintenance Facility are also considered RMCs.

3. Examples of Non-CNO availabilities are located in Part I, Chapter 4 of this volume.
4. The Tenders, **NSSFNL, TRFKB** and Ship's Force are not NSAs. If the FMA is executing work, the FMA will be the LMA. The Fleet Maintenance Officer may designate a NSA if necessary.

NOTE: THE LMA IS RESPONSIBLE TO THE NSA WHEN AN NSA IS ASSIGNED OR THE IMMEDIATE SUPERIOR IN COMMAND (ISIC) IF NO NSA IS ASSIGNED.

2.1.2 Lead Maintenance Activity. The single activity responsible for work being accomplished on U.S. Naval ships during any type of availability. For work conducted during periods in which the NSYs or RMCs do not have oversight, an LMA will be designated. LMAs are responsible for:

- a. Conduct or attend routine progress review meetings with all assigned repair activities. Identify and resolve coordination problems and work conflicts. Advise the appropriate maintenance sponsors (e.g., NSA, NAVSEA, TYCOM, AIT Sponsor, Ship's Program Manager, etc.) of significant quality, cost and schedule impacts and problems.
- b. (CNO Availabilities only) Coordinate work and testing controls to include Work Authorization Forms, tagouts and test sequencing per Volume IV, Chapter 10, paragraphs 10.3 and 10.4 of this manual.
- c. Integrate the work of all repair activities. For CNO availabilities, this includes an integrated schedule. For non-CNO availabilities, an integrated schedule may be used, based on the complexity of the work as determined by the LMA. The schedule shall ensure adequate time is provided for crew training.
- d. Report work status to Maintenance Brokers.
- e. Request assistance via Maintenance Broker as needed for outside activity performance.
- f. (CNO Availabilities only) Coordinate preparations by assigned repair activities for all key events (e.g., docking, undocking, hot ops, dock trials, fast cruise, sea trials, etc.) to include verification signature checklists of readiness to start.
- g. Track progress of all maintenance activities.
- h. (Submarines only) Provide management oversight of a ship safety council per reference (d).
- i. (Submarines and CNO Availabilities only) Coordinate sail safety and sail closeout efforts among the assigned repair activities conducting work.
- j. (CNO Availabilities only) Coordinate crane operations, pier laydown areas, dry dock work areas and resolve other real estate conflicts which may impede efficient execution of the availability.
- k. (CNO Availabilities only) Provide sea trials agenda, with all repair activity input, for ship Commanding Officer's concurrence and Type Commander approval.
- l. Maintain a list of activities authorized to work on the ship the LMA is responsible for and ensure the list is updated weekly or on an as-needed basis. Ensure activities working on ship have the proper credentials, work schedule and pedigree (authorized maintenance activity) prior to being added on the work authorization list (e.g., Submarine Safety, Scope of Certification, Fly-By-Wire, Radiological).
- m. Ensure maintenance activities performing maintenance on assigned ships have proper MOA, Standard Work Practices, NAVSEA standard items and/or Strategic Systems Programs Alteration authorization per reference (e) in place and that the MOA, Standard Work Practices, NAVSEA standard items and/or Strategic Systems Programs Alteration authorization address required support for work authorizations and work control. For SUBSAFE, Deep Submergence Systems (DSS), Scope of Certification and Fly-By-Wire work, ensure that the MOA identifies the certifying activity.
- n. Direct maintenance providers to their proper points of contact.
- o. Attend all production/maintenance management meetings to communicate/resolve priorities, problems, job interferences and issues.
- p. Define, identify and provide resolution to coordination problems and work conflicts between the Maintenance Managers, Maintenance Activities, Maintenance Brokers and the ship.

- q. Provide a copy of all Departures From Specifications to Ship's Force Quality Assurance Officer and the Type Commander (TYCOM) N43 organization.
- r. Participate in critiques and problem investigations (e.g., Trouble Reports) as necessary.
- s. Conduct Ship's Force and contractor orientation briefings and training per references (b) or (f), as applicable prior to commencement of shipboard work.
- t. (CNO Availabilities only) Appoint a Ship Safety Officer to chair the Ship Safety Council and coordinate work that affects control of a ship's control system.
- u. (Carrier Incremental Availabilities only) A Ship Safety Council is not required, but a Ship Safety Officer will be appointed and on site to oversee any high risk evolutions in accordance with Section 046 of reference (g).

2.1.3 Ship's Responsibility. The ship is responsible to:

- a. Monitor all maintenance activities to ensure they are on the master authorization list.
- b. Ensure a current master authorization list is maintained by the Ship's Duty Officer.
- c. Provide the LMA with information on ship brokered work so all activities are placed on the master authorization list.

2.2 MAINTENANCE ACCOMPLISHMENT LEVELS.

2.2.1 Fleet Maintenance. Fleet maintenance encompasses Organizational and Intermediate level maintenance as defined in reference (b). It includes, but is not limited to:

- a. Ship's Force maintenance that is planned and corrective maintenance which is within the capability and the responsibility of the ship's crew or Maintenance Support Team (if assigned). The work is a blend of equipment operation, condition monitoring, planned maintenance and repairs ranging from simple equipment lubrication to component changeout, and in some cases complete disassembly and repair in-place. The thrust of Ship's Force maintenance is to take advantage of operator experience and onboard rating skills and to ensure the ship is as maintenance self-sufficient as possible.
- b. FMA maintenance is that requiring specialized ratings, skill training in special maintenance processes and technical proficiency or equipment/instrumentation not available to Ship's Force. FMA maintenance normally consists of calibration, repair, refurbishment or replacement of damaged or unserviceable parts, components or assemblies, the emergency manufacture of unavailable parts within the FMA capability, and providing technical assistance.
 - (1) FMAs will accomplish refurbishment level maintenance beyond Ship's Force capability to the maximum extent possible within the policies of this chapter and other directives consistent with the availability of funds, material and skilled manpower.
 - (2) TRIDENT Refit Facilities are additionally tasked and resourced to accomplish industrial restoration level maintenance to SSBN/SSGN 726 Class submarine components as part of the integrated overhaul maintenance strategy for these ships.
 - (3) FMAs include Regional Repair Centers and Regional Maintenance Teams which are capable of conducting in-depth maintenance on their assigned components using the latest available technology.
- c. Strike Force Intermediate Maintenance Activity is composed of the collective StrikeForce elements capable of performing maintenance beyond the organizational level. A Strike Force Intermediate Maintenance Activity maximizes the Strike Force's ability to operate and sustain itself at sea during extended periods in forward areas through improved repair capabilities and material self-sufficiency.
- d. The Commercial Industrial Services program accomplishes Fleet maintenance for essential Fleet repairs that the FMAs have the capability to accomplish but not the shop capacity. The Commercial Industrial Services concept provides a means of using commercial industrial activities to provide maintenance services on a rapid response basis while observing approved commercial contracting procedures. Reference (h) fully describes policies and procedures for Commercial Industrial Services.

2.2.2 Industrial Maintenance. Industrial maintenance is that restoration level maintenance which encompasses Depot level maintenance as defined in reference (c). It includes but is not limited to:

- a. Industrial maintenance that is restoration level work requiring complex industrial processes, journeyman level technician skills, facilities, capabilities or manpower capacity not available at FMAs or to Ship's Force. This capability is provided within the Navy by naval industrial activities, ship repair facilities, Naval Aviation Depots, and commercial industrial activities and repair facilities under contract.
- b. Ship maintenance work scheduled for accomplishment by industrial facilities that in the judgment of the TYCOM, Commander NAVSEA or Commander Space and Naval Warfare Systems Command in their specific areas of responsibility, is not feasible to be accomplished by FMAs or Ship's Force, due to:
 - (1) Having insufficient time or manpower.
 - (2) Being beyond the capabilities of the FMAs.
 - (3) Being of such a nature that split responsibility between Fleet and industrial maintenance activities may occur.

2.3 RELIABILITY CENTERED MAINTENANCE.

- a. Reliability Centered Maintenance is a systematic analysis approach where the system design is evaluated for possible failures, the consequences of these failures, and the recommended maintenance procedures that should be implemented. The objective is to design a planned maintenance program to address possible failure consequences. The emphasis here is on the establishment of planned maintenance requirements (versus corrective maintenance requirements).
- b. Maintenance plans for in-service ships, systems and equipments should be reviewed and modified to incorporate Reliability Centered Maintenance principles in areas where it can be determined that the expected results will be commensurate with associated costs.

2.4 CONDITION BASED MAINTENANCE. Condition Based Maintenance (CBM) is maintenance based on objective evidence of actual or predictable failure of ship's installed systems or components. This includes condition-directed maintenance and periodicity adjustments to time-directed planned maintenance.

- a. A thorough knowledge and assessment of actual equipment condition in relation to its designed condition is the basis for most maintenance decisions. Equipment condition is a broad term which includes static parameters, such as size and shape, and dynamic parameters, such as speed, temperature, pressure, voltage, etc. While each Ship's Force is in the best position to know the condition of its ship and equipment, the complexities of modern design and engineering dictate that specialized assistance be utilized to determine the condition of much of the equipment. Diagnostics, inspections, non-intrusive monitoring for trending/analyses and tests shall be utilized to the maximum extent possible to determine performance and material condition of, and to predict and schedule required corrective maintenance action on, ships systems and equipment.
- b. Further information on CBM is provided by reference (c).
- c. Programs and organizations that are available to assess equipment conditions are described in paragraphs 2.4.1 through 2.4.8 of this chapter. Deficiencies identified by these and other programs and organizations shall be documented in the CSMP.

2.4.1 Unrestricted Operations (Submarines Only). The Unrestricted Operation (URO) program is designed to ensure continued safe submerged operations to design test depth. URO requirements shall be accomplished as scheduled and as described in Volume VI, Chapter 25, and Volume V, Part I, Chapter 5 of this manual.

2.4.2 Periodic Maintenance Requirements Program (Submarines Only). The Periodic Maintenance Requirement program has been established to integrate test, inspection, and maintenance directives from various Systems Commands and to control their input into each ship's CSMP for the required accomplishment by means of the Master Job Catalog. The phrase, "Periodic Maintenance Requirement" encompasses the URO program and the Submarine Engineering Management, Monitoring and Fleet Support Program Office Performance Monitoring

Program. All requirements due for accomplishment shall be included in the CSMP at least six months prior to the due date to allow sufficient time for material procurement and maintenance planning. Specific requirements of the Periodic Maintenance Requirement program are described in Volume VI, Chapter 24, of this manual.

2.4.3 Material Condition Assessment Feedback Program (Submarines Only).

- a. The submarine Material Condition Assessment (MCA) program is coordinated by NAVSEA and Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) Activity and is used to improve the maintenance efficiency of critical, non-nuclear Hull, Mechanical and Electrical (HM&E) components by optimizing component refurbishment periodicities. This assessment of a component's condition at refurbishment, along with other pertinent component data such as performance monitoring and corrective maintenance data, provides the foundation for extension or reduction of component refurbishment periodicity. Further, it allows for consideration of modification of component design configuration and/or the revision or elimination of component maintenance requirements with confidence that component reliability will not be diminished.
- b. The MCA data collection program consists of MCA data sheets and pre-availability test and inspection information. Other feedback programs and sources of material condition data include, but are not limited to, UROs, Maintenance and Material Management (3-M) System, Casualty Reports, Advanced Equipment Repair Program (AERP), Performance Monitoring Program, etc.
- c. The Integrated Maintenance Analysis Profile database displays planned and corrective maintenance feedback, historical configuration, job completion and alteration installation data in support of the MCA program.

2.4.4 Machinery Condition Analysis (Surface Force Ships and Aircraft Carriers).

2.4.4.1 General. The TYCOM Machinery Condition Analysis (MCA) and Ship's Force Machinery Vibration Analysis programs provide an objective assessment of the mechanical condition of propulsion plant and auxiliary rotating machinery. MCA surveys and Ship's Force Machinery Vibration Analysis and testing directly support the CBM strategy by determining specific maintenance requirements and priorities.

2.4.4.2 Automated Machinery Condition Analysis. The advent of real-time machinery digital sensors, analysis tools, data recording and data transfer has brought Automated Machinery Condition Analysis (AMCA) to the forefront of CBM. AMCA systems are being employed and installed on new ships-of-the-line and back-fitted where practicable on existing ships. The AMCA tools and systems support the MCA programs and MCA surveys. The systems are implementing prognostic, diagnostic and maintenance capabilities for both shipboard and off-ship personnel to utilize to enhance understanding of the mechanical condition of propulsion plant and auxiliary rotating machinery.

2.4.4.3 Machinery Condition Analysis Surveys. MCA surveys combine vibration analysis, visual inspections and a review of operating and maintenance records to objectively determine each machine's condition.

- a. Surveys are conducted before and after each scheduled CNO maintenance availability period. The survey preceding the availability provides a comprehensive list of machines which require repair. The MCA survey after the availability allows time for corrective maintenance actions prior to the ship's deployment and, if applicable, repairs while machinery is still under the availability warranty period. The post-availability survey also establishes a baseline to which future surveys can be compared.
- b. The key to the MCA program is onboard analysis of vibration data. MCA surveys identify machinery problems. A written report details prioritized repair recommendations with appropriate diagnostic and visual inspection data for all machines tested. The report also summarizes machinery repair history.
- c. Reports of failure trends and recurring or continuing mechanical problems are available along with MCA history reports. These reports can be generated based on machine type, ship, ship class, and Fleet.

2.4.4.4 Ship's Force Machinery Vibration Analysis Program. The Ship's Force Machinery Vibration Analysis program uses a fully capable automated diagnostics system to provide many ships with the ability to perform vibration testing. A set of computer programs in the diagnostics system provides the equivalent of a full time vibration engineer so that Ship's Force can test and analyze machinery at any time. Periodic training is provided to Ship's Force.

2.4.5 Ship Assessment, Groom and Evaluation. Ship Assessment, Groom and Evaluation is an existing TYCOM program which provides assessment of the material condition of selected shipboard systems and equipment. Ship Assessment, Groom and Evaluation includes identification of discrepancies to support development of a comprehensive conditioned based industrial availability work package. This program is fully described in Volume VI, Chapter 42 of this manual.

2.4.6 Performance Monitoring Team. The Performance Monitoring Team provides technical support to the Fleet by obtaining data using CBM methodology to monitor mission/safety critical systems and material conditions of selected HM&E systems. Performance Monitoring Team functions include, but are not limited to, the following:

- a. Collecting and analyzing equipment data.
- b. Establishing and maintaining a master database to track equipment performance.
- c. Providing feedback and technical guidance using trend analysis.
- d. Making equipment repair and deferral recommendations.

2.4.7 Combat Systems, Command, Control, Communications and Computer Readiness Assessment Program (Aircraft Carriers Only). The Combat Systems, Command, Control, Communications and Computer Readiness Assessment (C5RA) program is a TYCOM program which provides maintenance training and a comprehensive review and assessment of a ship's Combat Systems prior to deployment. It includes identification of discrepancies to support development of a comprehensive condition based availability work package for a ship's Combat Systems. For a complete description of the C5RA/Total Ship's Readiness Assessment (TSRA) program, refer to applicable TYCOM instructions.

2.4.8 Electronic Systems Review (SSBN/SSGN 726 Class Submarines Only). Fleet Training Support Center Detachments perform periodic Electronic Systems Reviews on SSBN/SSGN 726 Class submarines. The major emphasis of the Electronic Systems Review is on the job training of Ship's Force personnel in the performance of the Planned Maintenance System and maintenance of selected electronic equipment. Areas of review include monitoring for safety related issues, monitoring of the Planned Maintenance System and verifying equipment operability for the following systems: Radar, Electronic Warfare Support Measures, Periscopes, Fire Control, Central Atmosphere Monitoring System, Gyrocompass, Radio, Sonar, Launchers, Torpedo tubes and handling equipment. Additionally, the Electronic Systems Review team will assist division 3-M Coordinators in administrative reviews, perform National Policy on the Control of Compromising Emanations (TEMPEST) inspections or small arms inspections if requested.

2.5 SYSTEM/COMPONENT MAINTENANCE PROGRAMS (SUBMARINES AND AIRCRAFT CARRIERS ONLY).

2.5.1 Advanced Equipment Repair Program (Submarines Only).

- a. AERP is a system for providing new or refurbished non-nuclear components to support specific programmed industrial activity availability and Engineered Operating Cycle (EOC) maintenance requirements. A programmed requirement is one that is identified, budgeted and funded for ultimate end use on a specific submarine hull. Industrial activity availability and EOC requirements are defined as those assets necessary to support the accomplishment of a planned availability work package during scheduled CNO maintenance availabilities. Although similar in concept to the usual rotatable pool or repairable items, the AERP differs in that pool requirements are not determined by usage data. By its nature, the AERP is limited to items of significant value for which it would not be economical to stock on the basis of 'normal' usage. Instead, requirements are specific and are determined by the overall schedule of submarine industrial activity availability and EOC requirements. Only so much material is provided as will meet the programmed needs of the specific ships involved. Range and depth of AERP assets will normally not exceed projected requirements for a two year period.
- b. Components are furnished as Government Furnished Material to maintenance activities performing industrial activity availabilities and maintenance of submarines. The AERP provides the flexibility and speed-of-response required to ensure timely logistic support and engineering direction of complex maintenance planning.

- c. Components selected for management under the AERP are those complex, high value items required to effect the accomplishment of programmed submarine industrial activity availability or EOC requirements in the shortest possible time. However, other factors may also affect the decision to manage certain items under the AERP. Reference (i) provides specific guidance for selection of components.
- d. Various activities may initiate action to include additional components into the AERP. Such action may stem from independent study or the recognition of some Fleet requirement. In identifying potential AERP components, close coordination must be maintained with the Fleet and with the activity assigned responsibility for producing the availability work package for each submarine's availability. The final decision regarding inclusion of an item in the AERP rests with NAVSEA 07.

2.5.2 TRIDENT Planned Equipment Replacement Program (SSBN/SSGN 726 Class Submarines Only). Shipboard equipment which requires significant maintenance during the planned operating cycle, industrial level maintenance, which is beyond the capability of Ship's Force, and which cannot be accomplished during the refit period (without unacceptable impact on other refit requirements), will be supported by TRIDENT Planned Equipment Repair (TRIPER) program. TRIPER equipment will be removed from the ship for refurbishment ashore, replaced with pre-tested, Ready for Issue units and the affected system restored to full operational condition prior to completion of the refit period. Replacement will be accomplished on a planned basis at intervals designed to preclude the failure of the equipment or significant degradation of its associated system. Deviations of greater or less than one refit from established TRIPER change-out periodicities shall require ISIC concurrence. A planned change to shelf stock TRIPER equipment will be accomplished only when sufficient change kits are available to effect the change in all units of a given model of the equipment held in shelf stock. Shelf stock TRIPER equipment is represented in configuration status accounting databases maintained by SUBMEPP.

2.5.3 Aircraft Carrier Planned Equipment Replacement Program (Aircraft Carriers Only). The Aircraft Carrier Planned Equipment Replacement (CARPER) program is designed to ensure that the planned incremental availabilities of the USS NIMITZ (CVN-68) class aircraft carriers are completed on time and within cost by having a pool of historically critical, hard-to-get equipment and components available both for planned replacement and for emergent issue if needed.

2.5.4 SEAWOLF Class Rotatable Pool Program.

- a. The SEAWOLF Rotatable Pool is part of the class maintenance and availability planning process. The purpose of the program is to provide replacement components as scheduled by the Planned Maintenance Cycle Schedule, prior to failure or unacceptable degradation of installed components. Components which have been replaced are refurbished at a Designated Overhaul Point and returned in Ready for Issue status to repeat a similar cycle.
- b. Reactor plant system and equipment under the cognizance of the NAVSEA Nuclear Propulsion Directorate (08) are excluded from the SEAWOLF Rotatable Pool Program.
- c. SUBMEPP has been designated as the SEAWOLF Class Rotatable Pool Program Manager. Reference (j) provides specific guidance for managing the SEAWOLF Rotatable Pool program.

2.6 MODERNIZATION.

2.6.1 Navy Modernization Program. The Navy Modernization Program (NMP) is a CNO managed program to develop, plan, fund and accomplish Ship Changes and alterations in accordance with policies mandated in reference (b). It is executed in accordance with Volume VI, Chapter 3 (Submarines) and Chapter 36 (Surface Ships/Aircraft Carriers) of this manual and applies to all alterations to commissioned ships and craft of the Navy except as follows:

- a. Alterations to those portions of naval nuclear propulsion plants and facilities under the cognizance of the NAVSEA 08 identified in reference (k).
- b. Strategic Systems Program Alterations affecting the configuration and/or capabilities of systems and equipments under the cognizance of the Strategic Systems Programs (SSP). Reference (e) defines the policies, controls, processes and procedures for the accomplishment of all SSP Alterations issued by the Director, SSP for all SSP cognizant equipment on both SSBNs and SSGNs.
- c. TEMPALTs required for mission support or installed for test and evaluation or research and development programs.

- d. Alterations affecting configuration of hardware, software and support equipment of a TRIDENT system is under the cognizance of NAVSEA PMS 392.
- e. Temporary Modifications (TEMPMOD) are required for mission support or installed for test and evaluation or research and development programs associated with DSS and craft in accordance with reference (I). DSS systems on submarines and various craft such as Dry Deck Shelters are managed by NAVSEA PMS 399. DSS systems on various craft for Deep Submergence Rescue Systems are managed by NAVSEA PMS 394. TEMPMODs are managed in the same manner as a TEMPALT.

NOTE: TEMPORARY MODIFICATIONS TO DSS SYSTEMS PERMANENTLY INSTALLED ON SUBMARINES ARE MANAGED AS TEMPALTS.

2.6.2 Types of Ship Changes. There are **only** two types of **Ship Changes in the NMP: Program Changes and Fleet Changes.** The Submarine Force breaks these two types of Ship Changes into further sub-categories. See Volume VI, Chapter 3 of this manual for further details and definitions.

- a. Program Changes are programmed for installation by System Commands or Program Executive Offices, as well as funded for accomplishment by the System Commands, Program Executive Offices or other organizations as agreed upon.
- b. Fleet Changes are programmed and budgeted as part of TYCOM Ship Maintenance funding. Fleet Changes typically address safety of personnel and/or equipment, provide increased efficiency, reliability or maintainability and generally do not increase or add new capability.
- c. Non-Navy Ship Change Documents are programmed for installation on Naval vessels by Non-Navy organizations and they are funded for implementation by these organizations per previous agreement.
- d. Combination Ship Change Documents are programmed for installation on Naval vessels by a combination of the above organizations and their implementations are funded by those organizations per previous agreement. Under normal conditions these Ship Change Documents are funded by their Programs; otherwise they are funded by the Fleet.

2.6.3 Navy Data Environment System.

- a. Navy Data Environment (NDE) was designed as an enterprise data model to integrate and merge existing modernization, maintenance and logistics legacy data structures into a single design. The objective of NDE is to consolidate Fleet Modernization Business Processes and legacy Data Systems. The following applications have been merged into the NDE common model:
 - (1) Fleet Modernization Program Management Information System (FMPMIS) (Logistics Module) and Alteration Installation Planning System (AIPS) became (NDE-NM).
 - (2) FMPMIS Program Module and FMPMIS Execution Modules (became NDE Program and Execution Modules respectively).
 - (3) Afloat Master Planning System (NDE AMPS Module).
 - (4) Integrated Logistics Support (ILS) Cert/Master List Module.
- (b) The following systems replicate data and interface with NDE to share alteration, scheduling, material and financial data:
 - (1) NDE-SPAWAR Integrated Data Environment (NDE-SIDE).
 - (2) Configuration Data Managers Database-Open Architecture (CDMD-OA).
- (c) The following systems will replicate data and interface with NDE to share alteration, scheduling, material and financial data:
 - (1) TYCOM Alteration Management System (TAMS).
 - (2) Integrated Modernization Planning for Aircraft Carriers (IMPAC).

2.6.3.1 Submarine Force Navy Modernization Process. Submarine Force Navy Modernization Process phased implementation details are covered further in reference (b), Section 9 and Volume VI, Chapter 3 of this manual.

2.7 INTEGRATED FLEET MAINTENANCE MANAGEMENT. Integrated Fleet Maintenance Management is the business management model that allows for continuous maintenance by providing a seamless interface between all associated processes. It provides for processing work candidates including storage and retrieval of historical data and feedback to improve the process. The intent is to have a standard management model applicable to all platforms at all maintenance levels encompassing the following:

- a. Discover and document work.
- b. Validate and diagnose work.
- c. Integrate and screen work.
- d. Estimate and task work.
- e. Plan work.
- f. Execute work.
- g. Collect feedback and analyze data.

2.7.1 Continuous Maintenance. Continuous Maintenance is a process that involves the near continuous flow of maintenance candidates to the most appropriate level and maintenance activity for accomplishment. Timed to best support operations, it migrates from a centralized timed based batch process to a decentralized condition based nearly continuous process.

2.7.1.1 Continuous Screening Process. Continuous Screening is a process of screening work as it is discovered. Continuous Screening:

- a. Begins with identification and documentation of work candidates.
- b. Includes validation, estimation and integration of work candidates and the screening of work candidates to availabilities.
- c. Ends with the assignment and release of an availability or individual work candidate to a specific maintenance activity for execution during a specific maintenance period.

2.7.1.2 Continuous Planning Process. Continuous Planning is a process in which work is planned when tasked. Continuous Planning:

- a. Begins with tasking of a work candidate to a planning activity for preparation of a work specification and cost estimate.
- b. Ends when the specification is approved for execution. There is overlap between Continuous Screening and Continuous Planning.

2.7.1.3 Continuous Execution Process. Continuous Execution is a process in which selected emergent and non-emergent work candidates are executed outside of scheduled availabilities. Continuous Execution will not replace the current availability system. Availabilities will still be necessary to accomplish major repairs and extensive configuration changes, as well as provide the ship with a specific period of time to concentrate on maintenance and training. Continuous Execution will assist planning activities and repair activities in leveling their workload while providing the ships with a means of accomplishing repairs when needed with a minimum level of interruption to the ship's inport routine that is acceptable to the ship. The process is used when:

- a. The work candidate is ready for execution.
- b. Capacity exists in the selected repair activity.
- c. Ship's inport schedule supports the required level of repair effort.

2.8 TECHNICAL ASSISTANCE.

2.8.1 Regional Maintenance Center.

- a. The RMCs provide direct support to Fleet and TYCOMs in matters of waterfront technical assistance, maintenance training and logistics services associated with the installation, operation, maintenance, and readiness of shipboard equipment and systems. The RMCs promote Fleet readiness and maintenance self-sufficiency in shipboard systems and equipment through direct technical help in troubleshooting,

maintenance and repair, on-the-job maintenance training, logistics reviews, and technical documentation support. These services help correct operational and maintenance problems which are beyond the technical capability or capacity of fleet units or FMAs.

- b. References (q) and (r) have been cancelled. Volume VI, Chapter 2 of this manual fully describes policies and procedures for the RMCs.

2.8.2 Ship Assessment, Groom and Evaluation.

- a. This program is managed and funded by the TYCOM and provides technical assistance to Ship's Force personnel in maintaining a select list of shipboard equipment and systems.
- b. Volume VI, Chapter 42 of this manual provides further explanation of this program.

2.8.3 Carrier and Field Service Unit.

- a. Carrier and Field Service Unit is a branch of the Naval Air Warfare Center designed to provide technical assistance to Fleet personnel for all launch, recovery, and visual landing aids systems.
- b. Volume IV, Chapter 16 of this manual provides further explanation of this program.

2.8.4 Elevator Support Unit.

- a. Elevator Support Unit is an element of NAVSEA's Weapons and Cargo Elevator Improvement Program funded and scheduled by the TYCOM to provide technical assistance for the maintenance, modernization and repair of weapons and cargo handling elevators.
- b. Volume IV, Chapter 8 of this manual provides further explanation of this program.

2.8.5 Propulsion Plant Engineering Activity (Aircraft Carriers Only). CVN 68 Class aircraft carrier technical assistance is available from the Propulsion Plant Engineering Activity (PPEA) for non-nuclear propulsion plant systems. The PPEA provides an additional technical resource for assisting operating aircraft carriers with technical and/or operational issues not associated with SHIPALT installation and configuration control. PPEA Liaison services are requested using the Steam Plant Action Request per reference (s). The Steam Plant Action Request is not intended to replace the Liaison Action Request or Departure from Specifications processes described in Volume V, Part I, Chapter 8 of this manual. The PPEA, using the Steam Plant Liaison Inquiry described in reference (s), will request information, disseminate technical information and direct work that does not require a drawing change or affect system configuration control.

2.8.6 Waterfront Corrective Action Program.

- a. Waterfront Corrective Action Program is a subprogram of the Shipboard Electromagnetic Compatibility Improvement Program, and is part of the RMCs, designed to provide training and technical assistance to Ship's Force in Electromagnetic Interference recognition and reduction.
- b. Volume VI, Chapter 4 of this manual provides further explanation of this program.

2.8.7 Fleet Maintenance Support Branch (Nuclear Powered Vessels Only).

- a. Fleet Maintenance Support Branches' charter is to improve the Fleets ability to perform nuclear maintenance. This is accomplished by the following:
 - (1) Training.
 - (2) Providing on-site technical support.
 - (3) Acting as corporate memory.
- b. Fleet Maintenance Support Branch support should be coordinated through the respective Surface Nuclear Maintenance Training Group and, for submarines, coordinated through the parent ISIC.

2.9 PROPULSION PLANT MATERIAL CONDITION (AIRCRAFT CARRIERS ONLY).

2.9.1 Purpose. This section presents a comprehensive approach to assessing and maintaining propulsion plant material condition on Nuclear Powered Aircraft Carriers (CVN). The cornerstone of this program is the Material Condition Assessment Process (MCAP) which employs incremental maintenance concepts to apply inspections,

maintenance, training and both depot and afloat assets toward the consistent identification, evaluation, tracking and correction of propulsion plant material condition deficiencies. The program assigns specific duties to both Ship's Force and the TYCOM staff to ensure the ship has the assets, processes and support in place to effectively manage propulsion plant material condition over the life of the ship. The effectiveness of this process is measured by the material condition of the propulsion plants.

2.9.2 Applicability. The guidance provided in this section focuses on CVNs.

2.9.3 Ship's Force Requirements.

2.9.3.1 Reactor Maintenance Officer. The Reactor Maintenance Officer (RMO) is responsible for the long range planning and management of propulsion plant maintenance throughout the ship's cycle. Specific responsibilities include:

- a. Coordinate with other Reactor Department Principal Assistants to ensure divisions are continuously identifying, evaluating and correcting material deficiencies in the propulsion plants. The RMO will periodically review the MCAP Database (Equipment Deficiency Log (EDL)) and the Equipment Status Logs (ESL) to ensure deficiencies are being identified and documented.
- b. Coordinate with other Reactor Department Principal Assistants to ensure divisions are submitting work requests for inclusion into future availabilities and up-keeps, as necessary to correct significant or overly burdensome material deficiencies.
- c. Function as the ship's liaison for all outside maintenance activities. The RMO shall be the primary point of contact for all matters pertaining to maintenance of the propulsion plants to include coordinating with the TYCOM in the planning, prioritizing and execution of scheduled repairs.
- d. Request assistance as necessary, via the TYCOM, to accomplish nuclear and non-nuclear planned maintenance inspections.
- e. Coordinate (with Reactor Training Assistant/Training Officer) all required shipyard and TYCOM training for the Reactor Department prior to the start of availabilities.
- f. Request training, via the TYCOM, on the execution of material inspections. The training, conducted by a small (a notional five person team consisting of shipyard nuclear and non-nuclear engineers and a MCAP Zone Manager/Coordinator) group of shipyard MCAP experts, is normally conducted in conjunction with the pre-deployment Material Condition Assessment Inspection (Pre-Deployment MCAI). The primary goal of the training is to provide focused information and training to Ship's Force personnel on MCAP inspection attributes and techniques. The RMO shall be the single point of contact for scheduling TYCOM provided and/or funded maintenance and inspection training.
- g. Coordinate, via the TYCOM, the use of groom teams, as needed. Groom teams may be shipyard or contractor personnel who can be scheduled to find and fix discrepancies associated with specific systems or components. Groom teams employ standard tests to evaluate system performance and may assist in the correction of deficiencies as well as their identification and documentation.
- h. Coordinate, with other Reactor Department Principal Assistants, to ensure that deficiency lists generated by groom and inspection teams are incorporated into the MCAP Database (EDL).
- i. During CNO availabilities, perform actions necessary for certification of Reactor Plant Support Systems required to support principal propulsion plant evolutions in accordance with reference (t). Prior to performing work on these components/systems, the RMO shall consult with the shipyard project team to ensure that a clear path to re-certification (or interim certification) is identified.
- j. Assist the Reactor Officer and the other Principal Assistants in the planning and management of SHIPALTS and modifications to reactor plant systems and support systems.
- k. Ensure that non-propulsion plant deficiencies identified as part of the MCAP are passed to the Ship's Maintenance Manager for action. The Ship's Maintenance Manager is responsible for coordinating and reporting the correction of these deficiencies in a timely manner. Increased emphasis on deficiency correction and reporting may be required by the Ship's Maintenance Manager during key event readiness periods.

2.9.3.2 Material Condition Assessment Process. Appendix A presents a notional, 27 to 36-month, MCAP Timeline. This timeline provides visibility of the many areas requiring consideration and action by both the ship and associated Project Team, both inside and outside of CNO availabilities. The timeline provides a template capturing the minimum efforts that should be undertaken throughout the ship's operational cycle to support improvement of propulsion plant material condition. It was developed by a detailed review of associated source documents and experience in MCAP implementation across the fleet and should be tailored by the RMO to suit the ship's individual schedule and circumstances. The following are events from the MCAP Timeline that are of particular significance to Ship's Force that are not specifically addressed in other source documents:

- a. Pre-Deployment Material Condition Assessment Inspection. The Pre-Deployment MCAI is a non-intrusive walk through inspection of propulsion plant spaces conducted by Ship's Force (with shipyard support) prior to deployment. This inspection is conducted as a joint effort in conjunction with pre-inspection training provided by shipyard engineers and inspectors. The scope of the pre-deployment MCAI exceeds that of the ship's periodic zone inspections and is intended to be a mid-cycle assessment of propulsion plant material condition.
 - (1) The objectives of the inspection are:
 - (a) To validate the standards used in the material condition assessment process. This is accomplished through the pre-inspection training provided by shipyard engineers and inspectors. This training is intended to be the most significant opportunity to train and educate Ship's Force personnel with regard to inspection attributes and material standards.
 - (b) To identify deficiencies prior to deployment in time to order and receive material before departure. This ensures that Ship's Force has the material on hand to correct deficiencies while on deployment.
 - (c) To provide a mid-cycle review and validation of the health of the MCAP.
 - (d) To set the tone for continuing inspections during the ship's deployment. Aggressive identification and correction of deficiencies during deployment will result in an overall improved propulsion plant material condition and reduce work package churn in the subsequent CNO availability.
 - (2) Scheduling of the Pre-Deployment MCAI must balance the benefits of early identification of material issues against operational requirements. However, whenever possible, the inspection should be completed no later than three months prior to deployment. The TYCOM Maintenance Program Manager will fund a shipyard MCAP training team (notionally five to ten people in size), when requested by the RMO, to assist in the performance of the MCAI. The training team provides (1) targeted training and deckplate feedback to Ship's Force in support of the inspection, and (2) acts as an independent check for both the ship and the TYCOM that the ship's MCAP program is being administered in a manner that supports the intent of the program. The ship's Commanding Officer retains responsibility for determining the impact and required actions for deficiencies identified during this inspection.
- b. Production Completion Date. Production Completion Date (PCD) is a CNO availability key event that is scheduled two weeks prior to the respective plant hot-operations key event and marks the Project Team's transition from production work to preparations for test events and plant operations. It is intended that all propulsion plant work, deficiency correction and associated testing required for hot-operations (Light Off Assessment) be completed by PCD. However, PCD requires a subjective evaluation by the ship's Commanding Officer, Reactor Officer and Project Superintendent that production work, testing and deficiency correction has been reduced to a level and/or area of the plant such that required key event preparations can proceed satisfactorily, to completion, in the ensuing two-week period. Upon reaching PCD, the Reactor Officer and the rest of the Project Team must be able to shift their focus away from production work and testing to preparations for plant operations. These preparations include but are not limited to:
 - Pre-event certifications and resulting discrepancy correction
 - Danger Tag removal and system restoration

- Ship's Force Startup Maintenance
 - System Valve lineups
 - Continued deep cleaning and small valve maintenance
 - Use of Groom Teams in areas requiring special emphasis
 - Temporary Service Removal
 - Training on Hot Operations/Non-Critical Steaming
 - Transition to an operational environment and focus
- (1) Previous availabilities have shown that if excessive production work and testing is still ongoing at the time PCD is evaluated as complete, key event preparations will be adversely affected and the hot operations key event date will usually be negatively impacted.
 - (2) If it is necessary to delay PCD, strong consideration should be given to moving the hot operations key event accordingly, in order to protect the integrity of the two-week preparation period. Otherwise, it must be recognized that the transition from a maintenance intensive environment to an operationally focused environment may be negatively impacted.
 - (3) In the event that some production work and testing will be ongoing, the Project Team will generate an exceptions list detailing all work and associated testing that is intended to continue after PCD. The Project Team must **formally** agree that the intensity and/or volume of the items on the exceptions list will not adversely impact the Project's ability to complete preparations for the upcoming event, in an orderly and timely manner.
 - (4) Some specific questions that should be considered when determining whether a project has reached PCD include:
 - (a) Are major system piping and valves intact?
 - (b) Are propulsion plant damage control and fire-fighting systems and the associated repair lockers stocked and operational?
 - (c) Are ladders installed? Are space accesses and at least one of the two escape trunks in each space clear for passage?
 - (d) Are doors, hatches and scuttles installed and operational?
 - (e) Are temporary services removed with the exception of essential support systems and systems installed to support remaining work?
 - (f) Are all deck plates and associated supports installed?
 - (g) Has loose industrial material and debris been removed?
 - (h) Have major lagging repairs been completed? Is the extent of any remaining lagging work minimal (not including temporary lagging installed to support later testing)?
 - (i) Are pre-test inspections and correction of associated deficiencies complete?
 - (j) Has major preservation and painting been completed? Is the extent of remaining touch-up painting acceptable?
 - (k) Have deficiencies identified by the MCAI, weekly walk-throughs, associated cold plant testing, and any rework/retest associated with the testing, been completed or resolved? If not, are the remaining deficiencies at a low enough level that they can be corrected without impacting event preparations?
 - (l) If applicable, has System Turnover been completed? Have all discrepancies identified during the turnover process been corrected?

- c. Deficiency Identification and Correction. The basic organization of a CVN Reactor Department has long established programs in place to support the day-to-day identification and tracking of material deficiencies (3M system, Zone Inspection Programs, MCAP Database, EDL, CSMP, etc.). However, experience has shown that successful programs are those that support **continuous** identification and correction of propulsion plant deficiencies, that have incorporated the timelines of Appendix A and have placed increased emphasis on known problem areas. Some of the propulsion plant maintenance areas that have historically required special attention are listed below. Each CVN may identify additional areas as they progress through the maintenance cycle.
- (1) Valve Maintenance and Inspection. All valves in the propulsion plant are required to be inspected and maintained in accordance with the applicable chapters of the component technical manual. Special emphasis should be placed on the early identification and correction of stem packing leakage in conjunction with the MCAP inspection program. All valves having less than two valve isolation from high-energy systems should be inspected annually at a minimum. Prior to availabilities that will include a plant cool down, particular attention should be given to steam generator isolation valves, safety valves, blowdown and sampling system valves and all 500 series main feed and main steam system valves. Any valve that shows signs of packing leakage or has minimal packing gland adjustment remaining should be entered into the MCAP Database (EDL) for further evaluation.
 - (2) Structural Preservation. Areas of the propulsion plant are to be inspected for structural corrosion on a rotating basis in conjunction with the ship's MCAP inspection plan. Particular emphasis should be placed on areas exposed to salt spray (ventilation spaces, weather deck fittings), equipment foundations, low traffic areas, and all out of plant spaces owned by Reactor Department or that contain reactor support equipment. References (u), (v) and (w) provide additional guidance on applying and resurfacing plant structural components and coating color schemes.

NOTE: REFERENCE (w) WAS DISTRIBUTED TO ALL CVNs BY NAVSEA LTR 92T124/0418 DATED 5 NOV 01 AND PROVIDES AN EXCELLENT STANDARDIZED GUIDE OF THE VISUAL CONDITION OF PAINTED COMPONENTS AND SURFACES IN THE INTERIOR OF SHIPS DURING MAINTENANCE AVAILABILITIES OR CONTRACTED PRESERVATION TEAM WORK. ADDITIONAL COPIES ARE AVAILABLE IN SPIRAL BOUND BOOK FORM AND ON CD-ROM FROM THE NAVAL LOGISTICS LIBRARY (<http://nll.navsup.navy.mil/>). ACCESS THE P2003 SHOPPING CART AND INPUT EITHER TECH MANUAL NUMBER SL700-AB-GYD-010 OR NSN 0910-LP-100-4420.

- (3) Lagging and Insulation. Damaged or worn lagging/insulation should be inspected and upgraded using the guidance of references (c), (h), and the CVN 68 Class Incremental Maintenance Plan, Sequencing Plan in conjunction with the ship's MCAP inspection program. Ships should consider maintaining a separate list of lagging removed by Ship's Force as a result of maintenance, wetting or becoming oil soaked. Guidance for installing and maintaining insulation can be found in reference (x). Painting of insulation is covered by the aforementioned Reactor Plant Paint Schedule.
- (4) Paint and Preservation. In conjunction with the structural preservation and bilge preservation inspections discussed in this section, the ship must ensure that the paint and preservation status of general propulsion plant spaces is maintained over time with emphasis placed on the work that will be done during availabilities. The CVN 68 Class Incremental Maintenance Plan, Sequencing Plan provides guidance on rotation plans for propulsion plant spaces. Ships should consider maintaining a list of spaces annotating the dates when spaces were last painted/preserved to assist in long term planning. References (u), (v) and (w) (see NOTE in paragraph 2.9.3.2.c.(2) of this chapter) provide additional guidance on applying and resurfacing plant structural components and coating color schemes.
- (5) Bilge Preservation. Invasive, below the deck level, inspections are the key to maintaining the integrity of bilges and bilge structural members. Ships should ensure that regular bilge inspections are scheduled in conjunction with the ship's MCAP inspection program with increased emphasis during the Pre-Availability and Pre-Deployment MCAI inspections.

Progressive maintenance techniques are required for coatings in the propulsion plant bilges to wear as projected and must be resurfaced at the appropriate intervals. Guidance on inspection criteria and establishment of inspection zones can be found in CVN 68 Class Depot Maintenance Requirement Card MRC 631-01. References (u), (v), (w) and (y) (see NOTE in paragraph 2.9.3.2.c.(2) of this chapter) provide additional guidance on applying and resurfacing plant structural components and coating color schemes.

- (6) Oil Leak Identification and Correction. Ships should aggressively identify and correct oil leaks, with particular attention to areas underneath the main engines, turbine generators, lube oil purifiers and in the vicinity of lube oil pumps. Inspection plans should divide the propulsion plant spaces into zones to ensure all areas are inspected annually at a minimum. The list of identified oil leaks can then be prioritized in the MCAP Database (EDL) for correction.
- (7) Electrical Cableway Inspection. Shipboard electrical cableways for the most part are taken for granted. Improperly installed cables in the propulsion plant can not only damage existing cables but may also impact watertight/airtight integrity. Cableways must be properly installed and maintained in accordance with the requirements of references (z) and (aa). Additional guidance for conducting cableway assessments in conjunction with the ship's MCAP inspection program is available in Volume VI, Chapter 28 of this manual.
- (8) Typical Recurring Deficiencies. The ship should actively pursue the identification, documentation and correction of typical recurring deficiencies through the periodic MCAP inspections. Listed below are examples of the types of items that should be continuously identified and corrected. TYCOM will provide funding during availabilities, Planned Incremental Availabilities and Docking Planned Incremental Availabilities for the shipyard or other activity to provide assistance in resolution, as required.
 - (a) defective/missing spray shields
 - (b) missing deck plate screws
 - (c) lockwire/locking cable deficiencies
 - (d) mixed/missing/corroded fasteners
 - (e) small valve maintenance deficiencies
 - (f) loose/damaged stuffing tubes
 - (g) missing/damaged pipe hangers
 - (h) missing/misaligned/leaking funnels
 - (i) missing gage fasteners and gage line supports
 - (j) electrical cable and lighting deficiencies
 - (k) missing/damaged label plates
- d. Acceptable-As-Is items. The MCAP database has the ability to provide the ship with information concerning material conditions that have been previously classified as "Acceptable As Is". Each entry should identify the equipment and its location, provide a description of the acceptable condition and a reference to the technical documentation that accepted the condition. Shipyards can use this data during depot availabilities to preclude repetitive research for acceptable, existing conditions that would otherwise be considered deficiencies. The shipyard will provide the ship with electronic copies of all waiver letters, Liaison Action Request responses, Departures from Specifications and any other acceptance documentation generated during an availability. The RMO with the assistance of the Reactor Plant Planning Yard should ensure the data is kept up to date between depot availability periods.

2.9.3.3 Methods for Assessment of Material Condition. There are several methods used to periodically assess and improve the material condition of the propulsion plants for CVN outside of depot availabilities. The existing programs provided by the fleet commanders to improve material condition are addressed in Volume VI, Chapter 42, of this manual. Other methods include:

- a. Material inspections conducted by the Surface Nuclear Propulsion Mobile Training Teams (MTT).
- b. Material inspections conducted by the Board of Inspection and Survey.
- c. Material inspections conducted by the Nuclear Propulsion Examining Board (NPEB).
- d. Periodic inspections conducted by shipyard engineering and inspection groups, usually in conjunction with availability planning. These inspections include Carrier Availability Planning System, Point of Entry Testing (POET), MCAIs and zone inspections of the propulsion plant spaces.
- e. Carrier Engineering Material Assessment Team coordinators groom systems to include Leslie valves, high pressure air compressors, low pressure air systems, governor control systems, distilling plants, etc.
- f. Periodic Ship's Force Zone Inspections.
- g. Pre-Deployment Material Condition Assessment Inspection.

The table shown in Appendix B is a compilation of propulsion plant inspections and references.

2.9.3.3.1 Attributes and Acceptance Standards for Material Condition Inspections. The inspection criteria used for material inspections throughout the ship's operational cycle shall be uniform and consistent to provide an accurate assessment of the material condition of the propulsion plant.

- a. Reference (t) shall be used to inspect non-nuclear propulsion systems and components. The checklist provided in Appendix C is to be used as a guide during CNO Availabilities when reference (s) is invoked for determination of system readiness to support execution of a Key Event. This checklist may also be used outside of availabilities to determine system readiness to support ship operations.
- b. References (ab), (ac) and (s) shall be used to inspect nuclear propulsion systems and components. Inspection criteria for nuclear mechanical systems is listed in Appendix D. Inspection criteria for nuclear electrical systems is listed in reference (ac).

2.9.3.4 Propulsion Plant Planned Maintenance. Reference (ad) lists the planned maintenance pertinent to reactor systems and includes numerous inspections and checks to review material condition. It can be advantageous for the ship to request shipyard quality control inspector or production shop assistance when conducting the annual inspections of the Reactor Compartment and Pressurizer Shed. In addition, the ship should consider requesting assistance when performing periodic inspections of piping hangars, piping and supports in bilges, load centers and reactor vessel shielding.

2.9.3.5 Training for Ship's Force. The TYCOM, in conjunction with other activities (e.g., NSY, Fleet Maintenance Support Branch, Shore Intermediate Maintenance Activity (SIMA), Trident Training Facility), has developed specific training courses to enhance technical maintenance capabilities and inspection techniques. In addition, shipyard personnel can provide training on subjects such as lagging replacement, lockwire/locking cable installation and inspection techniques. Ship's Force requests for specific training topics (e.g., shipyard inspection training prior to conducting the pre-deployment MCAI) shall be processed through the TYCOM. Ship's Force should schedule this training early and ensure sufficient personnel are trained.

2.9.4 Type Commander Responsibilities.

- a. Budget and plan for correction of both typical recurring deficiencies and other material deficiencies during all upkeep, availabilities, Planned Incremental Availabilities and Docking Planned Incremental Availabilities.
- b. Assign groom teams as necessary, to assist Ship's Force in maintaining the material condition of the propulsion plant.
- c. Provide the maintenance and inspection training requested by Ship's Force. This provisioning of training will include funding a shipyard MCAP team requested by the RMO in support of the pre-deployment MCAI. This small team (five to ten person notional size) provides (1) targeted training and

deckplate feedback to Ship's Force in support of the inspection, and (2) acts as an independent check for both the ship and the TYCOM that the ship's MCAP program is being administered in a manner that supports the intent of the program.

- d. Provide training for RMOs through the TYCOM N9 and N43 organizations to ensure they understand common maintenance problems among carriers, the requirements of this chapter and how to better plan for availabilities.
- e. For CNO Availabilities, maintain, with Ship's Force and shipyard input, an Availability Parts Support List containing special parts and routinely required support equipment necessary to support Ship's Force work (e.g., breaker locking clips, valve locking devices, tygon tubing, flexes, thread protectors, foreign material exclusion plugs, valve stems). These material items can then be ordered and procured early so that production work will not be disrupted.
- f. Meet periodically with the Reactor Officer and/or RMO to review the ship's material condition. The need for TYCOM support in identifying and correcting material deficiencies should be addressed at this time.
- g. Provide timely review and scheduling of deficiency correction for items identified during the inspections and grooms of paragraph 2.9.3.3 of this chapter.

2.9.4.1 Type Commander Mobile Training Team Visits. The MTT should periodically evaluate the ship's material condition including a review of the ship's MCAP Database (EDL) to ensure the ship has an effective program for identifying and correcting material condition deficiencies. It is important that the MTT does not critique lists that are too large, since this chapter specifically encourages ship's to document deficiencies that are beyond the capability of the ship or are too numerous to fix considering the ship's operational commitments. Attributes that should be checked include:

- a. Ensure that the MCAP Database (EDL) is current and accurate based on MTT material condition inspections (i.e., is the ship's MCAP Database (EDL) an accurate representation of propulsion plant material condition based on the number, type and severity of items identified by the MTT? Are the plans for corrections realistic?)
- b. Ensure that deficiencies have not remained in the MCAP Database (EDL) for an excessive amount of time (i.e., the turnover rate of the deficiencies). Large backlogs indicate the need for increased Ship's Force attention and/or TYCOM assistance to correct deficiencies.

2.9.5 Assessing Deficiency Impact and Scheduling Corrective Action. During scheduled CNO availabilities shipyard personnel must review applicable plans and specifications in order to determine whether correction of a deficiency is required to support propulsion plant testing key events. Factors that must be considered in making this determination are type and severity of the defect, service of the component involved, accessibility of the defect for repair during shipyard availability versus upkeep period, effect on personnel or equipment safety, impact on system operation and cleanliness or preservation (i.e., required to restore cosmetic appearance versus resistance to corrosion). Every attempt should be made to correct all deficiencies during scheduled CNO availabilities, however, propulsion plant testing key events shall not be delayed in order to correct deficiencies that are not required to support that event. Such deficiencies can be deferred and may be scheduled for correction outside of the availability. Deficiencies that are primarily cosmetic are ideal candidates for deferral consideration. When material condition deficiencies are identified outside of CNO scheduled availabilities, the Reactor Officer determines whether corrective action is necessary and when it should be accomplished. Appendix A provides guidance regarding deficiency disposition in either case.

2.10 100 HOUR TRANSITION PERIODS (SURFACE FORCE SHIPS ONLY).

2.10.1 Critical Time Period. The 100 hours at the beginning and at the end of an availability are critical times for availability execution. The ISIC, TYCOM, NSA/LMA and ship are responsible for coordinating the 100 hour plan. Any job or event that is viewed as hindering the start of the availability shall be included in the 100 hour plan. Communication is vital to ensuring a full understanding of all work and associated requirements. First 100 Hour Plan should be discussed at the following:

- a. For Continuous Maintenance Availability, discuss First 100 Hour Plan at the Work Package Execution Review (WPER) (A-21).

- b. For CNO Availability, discuss First 100 Hour Plan at the WPER (A-30).

Details for the first and final 100 hours shall be as follows:

2.10.2 First 100 Hour Plan. The First 100 Hour Plan will notionally start the first full work day of the availability. The items listed below are the focus of the first 100 hours, as indicated in Appendix E, and will be discussed again at the Arrival Conference.

- a. Conduct Tag-out audit.
- b. Establishing plant conditions.
- c. Establishing working hours and implement work controls (i.e., Tag-outs and Work Authorization Forms (WAF) throughout the availability.
- d. NSA/LMA and Ship's Force will have a plan ready to execute at the start of the availability to place required equipment/systems into Inactive Equipment Maintenance status.
- e. Jobs still requiring ship checks will be listed in the Availability Planning Message.
- f. Test forms required for Ship's Force retest of FMA work will be delivered to the ship within the first 100 hours for Ship's Force to review, plan and write procedures as necessary.
- g. Brief all critical path jobs (i.e., work that requires most of the availability to complete) that will start during the first 100 hours.
- h. Establish who from Ship's Force is authorized to sign off equipment testing (i.e., E-7 and above).
- i. Confirm weekly progress meetings and times with Ship's Force and contractor management.
- j. Submit Availability Start Message to cognizant Fleet Commander.
- k. Provide Ship's Force with an Executive Level Integrated Maintenance Availability schedule (i.e., critical path jobs, long lead time jobs, Maintenance Control Team jobs, high visibility jobs).
- l. Conduct maintenance availability training/stand down for Ship's Force on critical safety systems (i.e., Tag-out/electrical safety, hearing conservation, sight protection, respiratory safety, etc.).

2.10.3 Final 100 Hour Plan. The Final 100 Hour Plan will notionally begin four days prior to the beginning of sea trials; or if no sea trials, last day of the ship's scheduled availability. Items listed below must be completed in accordance with Appendix F, which provides an outline of the final 100 hours.

- a. Production work complete. It is vital all production work is completed by the 100 hour point to allow for the remaining events to occur without delay.
- b. Production related temporary services removed.
- c. Conduct departure conference.
- d. Commence dock trials; complete dock trials.
- e. Conduct Tag-out audit.
- f. WAFs require close out no later than 72 hours prior to the beginning of sea trials; or if no sea trials, end of the availability. Conduct final WAF audit after closeout.
- g. Testing associated with production work is completed and reviewed. (Testing should be ongoing as production work is completed throughout the ship's availability.)
- h. Operationally test systems/equipment repaired or modernized during the availability.
- i. Conduct Pre-Underway checks and Master Light-Off Checklists (MLOC).
- j. Crew watchbills and berthing bills complete.
- k. Conduct Fast Cruise.
- l. Complete Fast Cruise.
- m. Crew rest and final administration.

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APPENDIX A**MATERIAL CONDITION ASSESSMENT PROCESS TIMELINE**

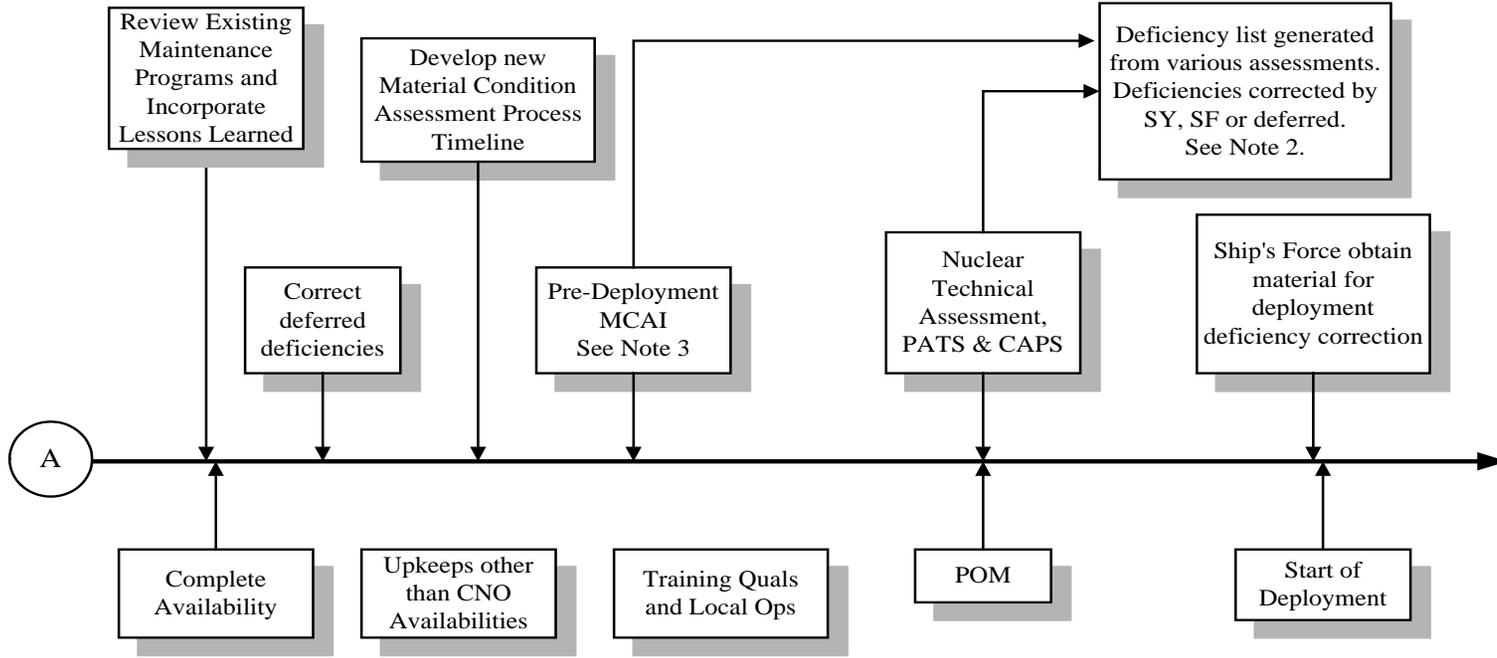
PURPOSE: The timeline of this Appendix lays out the material condition assessment process throughout the ship's **Fleet Readiness Training Plan**. The plan also includes descriptions of the various events that occur and who is responsible for the actions outlined. With this information, the various stakeholders in the project team can develop a clear understanding of the process. This will encourage better communication, planning and completion of all required actions.

This timeline is provided as a guide to be used for development of a CVN 68 class ship specific timeline for a Planned Incremental Availability or Docking Planned Incremental Availability. The timeline is not applicable to a Refueling Complex Overhaul availability.

Notes:

1. The following timeline is a generic version of a Project Material Condition Assessment Process. The project team will develop a timeline and plan specific to each availability taking into account the ship's schedule (deployment, transit periods, upkeeps and early start periods). The plan includes descriptions of the events (purpose of inspection/action, which activity performs the action, results, etc). The timeline and plan allows the Project Team (shipyards, Ship's Force, TYCOM) to develop a clear understanding of the process. Timeline should be developed to present at the first project planning meeting (target 15 months prior to start of availability).
2. Deficiencies identified during the MCAI and following assessments will be evaluated per the attached Deficiency Evaluation Flowchart.
3. The Pre-deployment MCAI may be required more than once in an MCAP "cycle" given that two (more) deployments may be planned for a carrier in the interval between CNO availabilities. In this instance, the RMO should request the shipyard MCAP training team in conjunction with each performance of the Pre-deployment MCAI.

MCAP



II-I-2-A-2

APPENDIX B

CVN PROPULSION PLANT MATERIAL CONDITION ASSESSMENTS

		REQUIREMENT			WHO				
ASSESSMENT/ INSPECTION/ TEST	REFERENCE & PARAGRAPH # OF REQUIREMENT(S)	TYPE OF ASSESSMENT	"WHY"	WHEN	WHEN TYPICALLY CONDUCTED	PERFORMS	EVALUATES	INSPECTION/ ACCEPTANCE CRITERIA	COMMENTS
CAPS	A	OPERATIONAL TESTING	DEVELOP AWP	PRE-PRC	A-12 TO A-8	SY, SF, OTHERS AS ASSIGNED BY TYCOM	SY ENGR	A,B,C,D,E,F,G,J,K,O,W	CAPS TASKING ACCOMPLISHED VIA TYCOM LETTER
PRE-DEPLOYMENT NUCLEAR TECH ASSESSMENT	C (9020-0-g) O (3.1.1)	VISUAL ZONE INSPECTION & RECORDS REVIEW	VALIDATE AWP	POM	TYPICALLY BY A-9	SY NUC ENGR	SY NUC ENGR	A,B,C,D,E,F,G,H,O,W	
PRE-DEPLOYMENT MATERIAL CONDITION ASSESSMENT INSPECTION (MCAI)	V	VISUAL ZONE INSPECTION	MID-CYCLE ASSESSMENT OF PROP PLT MATERIAL CONDITION	PRIOR TO DEPLOYMENT	TYPICALLY 2-4 MONTHS PRIOR TO DEPLOYMENT	SF	SF	A,B,D,E,F,G,H,K,O,W	SHIPYARD TRAINING REGARDING INSPECTION ATTRIBUTES AND STANDARDS PROVIDED TO SF IN ADVANCE
PROPULSION PLANT **GROOM TEAM	P	DEFINED BY TYCOM	MAINTAIN HIGH LEVEL OF MATERIAL CONDITION	TYCOM TASKING	PERIODICALLY	RMC, CEMAT	TYCOM	B,D,E,F,G,W	GROOM TEAMS SHOULD BE REQUESTED AND ARRANGED THROUGH THE TYCOM
MACHINERY CONDITION ANALYSIS (MCA) TESTING	L, S (#), U	COMPONENT VIBRATION ANALYSIS	SUPPORT CONDITION BASED MAINTENANCE DECISIONS	PMS AS SCHEDULED. FORMAL DLI MCA VISITS PRE	PERIODICALLY THROUGHOUT CYCLE	SSNN Code 1800, SF	SSNN Code 1800, SF	B,W	
SURFACE NUCLEAR PROPULSION MOBILE TRAINING TEAM (SNPMTT)	NONE	OPERATIONAL & VISUAL	ORSE/PORSE PREPS	ROUTINE	PERIODICALLY THROUGHOUT CYCLE	TYCOM N9	TYCOM N9	A,B,D,E,F,G,W	
ORSE	M	OPERATIONAL & VISUAL	OPNAV, NRC SAFEGUARD INSPECTION	EVERY 12 PLUS OR MINUS 3 MOS	TYPICALLY DURING WORKUPS AND RETURN FROM DEPLOYMENT	NPEB	NPEB	A,B,D,E,F,G,W	
INSURV	N, Q	OPERATIONAL & VISUAL (MI)	LIFECYCLE ASSESSMENT	36 - 54 MOS	AS SCHEDULED	BOARD OF INSPECTION AND SURVEY	BOARD OF INSPECTION AND SURVEY	B,D,E,F,G,N,W	
NON-NUCLEAR POINT-OF- ENTRY TESTING (POET)	R	COMPONENT VISUAL INSPECTION & OPERATIONAL TESTING	VALIDATES AWP & COMPONENT RELIABILITY TO SUPPORT CRITICALITY	PRE- AVAILABILITY	RETURN TRANSIT FROM DEPLOYMENT (A-2 TO A-4)	SY ENGINEERING AND PROJECT TEAM MEMBERS WITH ASSISTANCE FROM SF	SY ENGR	A,B,D,F,J,K,W	SOME GROOMING PERFORMED DURING POET
POST-DEPLOYMENT NUCLEAR TECH ASSESSMENT	C (9020-0-g) O (3.1.1)	VISUAL ZONE INSPECTION & RECORDS REVIEW	VALIDATE AWP	PRE- AVAILABILITY	AFTER RETURN FROM DEPLOYMENT	SY NUC ENGR	SY NUC ENGR	A,B,C,D,E,F,G,H,O,W	
NON-NUCLEAR TECH ASSESSMENT	K (4.a.(1)(a))	VISUAL ZONE INSPECTION & RECORDS REVIEW	VALIDATE AWP	PRE- AVAILABILITY	AFTER RETURN FROM DEPLOYMENT	SY ENGR	SY ENGR	A,B,D,F,J,K,W	
PRE-AVAIL MATERIAL CONDITION ASSESSMENT INSPECTION (MCAI)	C (9020-0-g) O (3.6) K (4.a.(1)(b))	VISUAL ZONE INSPECTION	IDENTIFY DEFICIENCIES FOR EARLY INCLUSION IN THE AWP	LESS THAN 90 DAYS PRIOR TO AVAILABILITY START	TYPICALLY AFTER RETURN FROM DEPLOYMENT	TEAM OF SF AND SY PROJ TM MEMBERS, ENGINEERS, NUCLEAR INSPECTORS	SY ENGR	A,B,C,D,E,F,G,H,K,O,W	
PMS	A, S	VARIOUS	MAINTAIN MATERIAL CONDITION	CONTINUOUS	CONTINUOUS	SF	SF	A,S,W	
NUCLEAR PRETEST INSPECTION	C (9020-0-g) O (3.1.1.(2))	VISUAL OF WORK PERFORMED	CERTIFY READINESS FOR TESTING	PRE-TEST	DURING AVAIL	SY NUC INSPECTORS	SY NUC ENGR	A,B,C,D,E,F,G,H,W	

II-1-2B-1

COMUSFLTFORCOMINST 4790.3 REV C

			REQUIREMENT		WHO				
ASSESSMENT/ INSPECTION/ TEST	REFERENCE & PARAGRAPH # OF REQUIREMENT(S)	TYPE OF ASSESSMENT	"WHY"	WHEN	WHEN TYPICALLY CONDUCTED	PERFORMS	EVALUATES	INSPECTION/ ACCEPTANCE CRITERIA	COMMENTS
NON-NUCLEAR PRETEST INSPECTION	K (4.a.(1)(c))	VISUAL OF WORK PERFORMED	CERTIFY READINESS FOR TESTING	PRE-TEST	DURING AVAIL	SY ENGR	SY ENGR	A,B,D,E,F,G,H,K,W	
PORSE	T (6.a)	VISUAL ZONE INSPECTION & RECORD REVIEW	OPNAV, NRC SAFEGUARD	PRE-CRIT DURING AVAILS SKED GREATER THAN 6 MONTHS	PRIOR TO REACTOR START-UP DURING AVAILS SKED GREATER THAN 6 MONTHS	NPEB	NPEB	A,B,D,E,F,G,W	
NUCLEAR/NON-NUCLEAR PRE-EVENT INSPECTIONS	C (9020-0-g) O (3.7.3) K (4.a.(1)(d))	VISUAL ZONE INSPECTION	VALIDATES PROPULSION PLANT MATERIAL CONDITION FOR AVAIL KEY EVENTS	PRIOR TO HOT OPS/NON-CRIT STEAMING	TYPICALLY AFTER PRODUCTION COMPLETION DATE (PCD)	TEAM OF SF AND SY PROJ TM MEMBERS, ENGINEERS, NUCLEAR INSPECTORS	SY ENGR	A,B,C,D,E,F,G,H,K,O,W	
NUCLEAR/NON-NUCLEAR PRE-CRITICALITY CERTIFICATION	C (9020-0-g) O (3.7) K (4.a.(1)(d))	VISUAL ZONE INSPECTION	VALIDATES PROPULSION PLANT READY FOR CRITICAL OPERATIONS	PRE-CRIT, POST NON CRIT STEAMING	PRIOR TO CRIT	TEAM OF SF AND SY PROJ TM MEMBERS, ENGINEERS, NUCLEAR INSPECTORS	SY ENGR	A,B,C,D,E,F,G,H,K,O,W	
NRRO PRE-EVENT/PRE- CRITICALITY WALKTHROUGHS	NONE	VISUAL ZONE INSPECTION	VALIDATE PROPULSION PLANT READY TO SUPPORT ASSOCIATED KEY EVENT	UPON PROJECT TEAM DETERMINATION THAT PROP PLANT IS READY FOR ASSOCIATED KEY EVENT	TYPICALLY 2 DAYS PRIOR TO KEY EVENT	NRRO REPS	NRRO/SY ENGR	A,B,C,D,E,F,G,H,K,O,W	A SY SENIOR MGMT WALKTHROUGH MAY BE SCHEDULED BETWEEN THE PRE-EVENT CERTIFICATION AND THE NRRO WALKTHROUGHS
AVAILABILITY PERIODIC ZONE ASSESSMENTS	O (3.7.4) K	VISUAL ZONE INSPECTION	ENSURE CONTINUOUS IDENTIFICATION AND CORRECTION OF PROP PLT DEFICIENCIES TO SUPPORT DOWNSTREAM KEY EVENTS	AT PERIODICITY TO BE DETERMINED BY THE PROJECT TEAM	COMMENCE AT AVAILABILITY START AND SCHEDULED PERIODICALLY UNTIL 2-3 WEEKS PRIOR TO PRODUCTION COMPLETION DATE (PCD)	TEAM OF SF AND SY PROJ TM MEMBERS, ENGINEERS, NUCLEAR INSPECTORS AS APPROPRIATE	SY ENGR	A,B,C,D,E,F,G,H,K,O,W	

References:

- | | |
|---|---|
| A) NAVSEA 0989-026-1000 | L) SSNN Code 1800 Tasking Letter, 4710 |
| B) Component Technical Manuals | M) OPNAVINST 3540.3 |
| C) NAVSEA 0989-043-0000 | N) INSURVINST 4730.1 |
| D) Various System Diagrams & Piping Plans | O) NAVSEA 0989-062-4000 |
| E) NAVSEA Instructions (9210.18, 9210.36, Etc.) | P) COMUSFLTFORCOMINST 4790.3, Volume VI, Chapter 42 |
| F) Military Standards (MIL-STD-767, MIL-STD-2041, Etc.) | Q) COMUSFLTFORCOMINST 4790.3, Volume IV, Chapter 26 |
| G) NAVSEA Manuals 389-0317, 250-1500-1, 389-0288, 0989-150-0000 | R) NAVSEA S9092-AC-ADM-010 |
| H) Off-Yard Correspondence | S) NAVSEAINST 4790.8/OPNAVINST 4790.4 |
| I) OPNAVINST C9210.2 | T) OPNAVINST 9080.3 |
| J) NAVSEA 0989-036-0000 | U) COMUSFLTFORCOMINST 4790.3, Volume II, Part I, Chapter 2, Paragraph 2.4.4 |
| K) NAVSEAINST 4730.2 | V) COMUSFLTFORCOMINST 4790.3, Volume II, Part I, Chapter 2, Paragraph 2.9.3.2.a |
| | W) COMUSFLTFORCOMINST 4790.3, Volume II, Part I, Chapter 2, Paragraph 2.9.5 |

** INCREMENTAL MAINTENANCE PLAN (IMP) MANUAL SHOWS RECOMMENDED GROOM TIMELINE
MCA COVERED BY PMS, e.g.: MIP 2550/003-76 FOR MAIN FEED PUMPS, SYSCOM MRC 84 C1ZQ N APPLIES

APPENDIX C

**SYSTEM CERTIFICATION CHECKLIST
FOR CNO AVAILABILITY KEY EVENTS
(AIRCRAFT CARRIERS ONLY)**

PURPOSE: This checklist is provided as a guide during CNO Availabilities when reference (s) is invoked for determination of system readiness to support execution of a Key Event. This checklist may also be used outside of availabilities to determine system readiness to support ship operations.

NOTE: THIS CHECKLIST IS FOR USE TO CERTIFY SYSTEMS/COMPONENTS LISTED IN REFERENCE (s) ENCLOSURES (1) THROUGH (3) WHERE SHIPYARD RESPONSIBLE WORK WAS NOT PERFORMED IN ORDER TO MAKE SIGNATURES ON KEY EVENT PREREQUISITE LISTS. SPECIFIC ATTRIBUTES ARE LISTED IN REFERENCE (s) ENCLOSURE (4) AS A GUIDE.

System _____

Attribute	Yes/No
AWP reviewed to ensure all authorized work has been performed and any incomplete work (adjudicated at the appropriate supervisory level) does not affect certification.	
EDL, CSMP, Nuc and Non-Nuc DR Logs and DFS Log reviewed for unresolved deficiencies.	
WAF Log reviewed to ensure all authorized work is completed, tested or ready for testing.	
CWPs and FWPs reviewed for accuracy and completeness.	
Preventive maintenance complete and up to date (i.e., SU maintenance complete, PMS within periodicity).	
All standing orders, including temporary standing orders in effect for system, have been reviewed and adjudicated by the JTG.	
<p>NOTE: THE INTENT OF THIS STEP IS FOR THE ZONE MANAGER AND PRINCIPAL ASSISTANT TO DETERMINE WHICH SYSTEM OR PORTIONS OF A SYSTEM/CIRCUIT REQUIRE AN INSPECTION USING HISTORICAL FAILURES AND TESTING TO BE PERFORMED.</p> <p>System inspection, based on history and deficiencies noted, completed and operating deficiencies resolved.</p>	
Instrument (i.e., gages, pressure/temperature switches, meters) calibration is within periodicity and will not expire within two months of ship delivery.	
Operating logs are updated and approved for configuration changes/modifications.	
System/component safety features are set, tested and operational and all automatic controls necessary to support the planned testing are calibrated, tested and operational.	

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VOLUME II

PART I

CHAPTER 3

CHIEF OF NAVAL OPERATIONS SCHEDULED MAINTENANCE AVAILABILITIES

REFERENCES.

- (a) Integrated Project Teams for Aircraft Carrier Maintenance Handbook
- (b) OPNAVINST C3000.5 - Operation of Naval Nuclear Powered Ships
- (c) OPNAVNOTE 4700 - Representative Intervals, Durations, Maintenance Cycles, and Repair Mandays for Depot Level Maintenance Availabilities of U.S. Navy Ships
- (d) OPNAVINST 4700.38 - Berthing and Messing During CNO Scheduled Maintenance Availabilities
- (e) OPNAVINST 3120.32 - Standard Organization and Regulations of the U.S. Navy
- (f) COMSUBLANT/COMSUBPACNOTE C3120 - Submarine Operating Restrictions and Depth Authorizations
- (g) OPNAVINST 3120.33 - Submarine Extended Operating Cycle (SEOC) Program
- (h) NAVSEA S9086-7G-STM-010 - NSTM Chapter 997 (Docking Instructions and Routine Work in Dry Dock)
- (i) NAVSEAINST 4441.2 - Changes to Coordinated Shipboard Allowance List (COSAL); Procedures for
- (j) COMNAVAIRLANTINST 9090.2 - Conduct of Shipyard Trials and Inspections Incident to Service Life Extension Program (SLEP), Overhauls or Availabilities of Conventionally Powered Aircraft Carriers
- (k) COMNAVSURFLANT/COMNAVSURFPACINST 3502.2 - Surface Force Training Manual
- (l) COMNAVAIRLANT/COMNAVAIRPACINST 3500.20 - Aircraft Carrier Training and Readiness Manual
- (m) COMNAVAIRLANTINST 9080.2 - Conduct of Trials and Inspections Incident to Construction, Overhauls or Availabilities of Nuclear Powered Aircraft Carriers (CVN)
- (n) OPNAVINST 9080.3 - Procedures for Tests and Trials of Navy Nuclear Powered Ships Under Construction, Modernization, Conversion, Refueling and Overhaul
- (o) OPNAVINST 3540.3 - Naval Nuclear Propulsion Examining Boards
- (p) OPNAVINST C9210.2 - Engineering Department Manual for Naval Nuclear Propulsion Plants
- (q) COMNAVSUBFOR OPORD 2000
- (r) NAVSEA S9086-DA-STM-000 - NSTM Chapter 100 (Hull Structures)
- (s) NAVSEA S9086-C4-STM-000 - NSTM Chapter 094 (Trials)
- (t) NAVSEA 0924-062-0010 - Submarine Safety (SUBSAFE) Requirements Manual
- (u) COMNAVSUBFORINST 5400.25 - Standard Submarine Supply Department Organization and Regulations Manual
- (v) COMNAVSUBFORINST 5400.29 - Standard Submarine Navigation/Operations Department Organization and Regulations Manual
- (w) COMNAVSUBFORINST 5400.40 - Standard Submarine Combat Systems Department Organization and Regulations Manual (SSN)
- (x) COMNAVSUBFORINST 5400.41 - Standard Submarine SSBN 726 Class Weapons Department Organization and Regulations Manual
- (y) COMNAVSUBFORINST 5400.47 - Standard Submarine Combat Systems Department Organization and Regulations Manual (SSGN)
- (z) COMNAVSUBFORINST C3500.2 - Continuous Training Manual
- (aa) OPNAVINST 9110.1 - Submarine Test and Operating Depths; Policy Concerning
- (ab) COMSUBLANTINST 5400.4 - Submarine Force, U.S. Atlantic Fleet Regulations
- (ac) COMSUBPACINST 5400.7 - Submarine Force, U.S. Pacific Fleet Regulations
- (ad) COMLANTFLT OPORD 2000/COMPACFLT OPORD 201
- (ae) NAVSEAINST C9094.2 - Submarine Valve Operation Requirements for Builders and Post Overhaul Sea Trial Test Dives
- (af) NAVSEAINST 4790.8/OPNAVINST 4790.4 - Ships' Maintenance and Material Management (3-M) Manual

- (ag) NAVSEAINST C9210.30 - Procedures for Administration of Nuclear Reactor Plant Preventive Maintenance and Tender Nuclear Support Facilities Preventive Maintenance on Ships
- (ah) SSPINST 5600.11 - Preventive Maintenance Management Program for Strategic Weapon Systems Equipments and Associated Material
- (ai) OPNAVINST 4700.7 - Maintenance Policy for U.S. Naval Ships
- (aj) COMLANTFLTINST 5400.2 - U.S. Atlantic Fleet Regulations
- (ak) COMPACFLTINST 5400.3 - U.S. Pacific Fleet Regulations
- (al) NAVSEA 0989-LP-043-0000 - Commissioned Surface Ship General Reactor Plant Overhaul and Repair Specifications
- (am) OPNAVINST 3540.4 - Propulsion Examining Boards for Conventionally Powered Ships
- (an) NAVSEA 0989-LP-037-2000 - Commissioned Submarine General Reactor Plant Overhaul and Repair Specifications
- (ao) NAVSEA 0989-064-3000 - Cleanliness Requirements for Nuclear Propulsion Plant Maintenance and Construction
- (ap) NAVSEA S9AA0-AB-GOS-010 - General Specifications for Overhaul of Surface Ships (GSO) 2004 Edition
- (aq) NAVSEA S9086-TX-STM-010 - NSTM Chapter 583 (Boats and Small Craft)
- (ar) NAVSEA S9086-G9-STM-000 - NSTM Chapter 231 (Propulsion and SSTG Steam Turbines)
- (as) NAVSEA S9086-GY-STM-010 - NSTM Chapter 221 (Boilers)
- (at) NAVSEA S9086-HN-STM 010 - NSTM Chapter 244 (Propulsion Bearings and Seals)
- (au) NAVSEA S9086-HK-STM-010 - NSTM Chapter 241 (Propulsion Reduction Gears, Couplings, Clutches and Associated Components)
- (av) NAVSEA S9086-TV-STM-010 - NSTM Chapter 581 (Anchoring)
- (aw) NAVSEA S9086-RK-STM-010 - NSTM Chapter 505 (Piping Systems)
- (ax) NAVSEA S9086-TA-STM-010 - NSTM Chapter 562 (Surface Ship Steering)
- (ay) NAVSEA S9086-TD-STM-010 - NSTM Chapter 565 (Surface Ship Stabilizing Systems)
- (az) CNAFINST 3500.71 - Flight Deck Certification
- (ba) OPNAVNOTE 5400 - DNS-33/10U229822 of 16 Sep 10
- (bb) NAVSEAINST 5400.95 - Waterfront Engineering and Technical Authority Policy
- (bc) NAVSEAINST 5450.142 - Mission and Function of the Surface Ship Life Cycle Management Activity
- (bd) NAVSEA S9AA0-AB-GOS-030 - General Specifications for Overhaul of Surface Ships (GSO) AEGIS Supplement

LISTING OF APPENDICES.

- A Typical CNO Availability Planning Milestones (Submarines Only)
- B Typical CNO Availability Planning Milestones (Surface Force Only)
- C Typical CNO Availability Planning Milestones (Aircraft Carriers Only)
- D Suggested Guidelines for Forces Afloat Review of Availability Work Packages
- E Monitoring Procedures (Surface Force Ships and Aircraft Carriers)
- F₁ SITREP/Progress Report (Aircraft Carriers Only)
- F₂ SITREP/Progress Report (Surface Force Ships Only)
- G Sample New Work Forwarding Letter and Index
- H Suggested Message Format for a New Work Candidate
- I Minimum Dock Trials Requirements (Surface Force Ships and Aircraft Carriers)
- J Minimum Fast Cruise Requirements (Surface Force Ships and Aircraft Carriers)
- K Minimum Tests to be Performed During Sea Trials (Surface Force Ships and Aircraft Carriers)
- L Minimum Dock Trials Requirements (Submarines Only)
- M Minimum Fast Cruise Requirements (Submarines Only)
- N Minimum Sea Trials Requirements for Chief of Naval Operations Availabilities Less Than Six Months Duration (Submarines Only)
- O Minimum Sea Trials Requirements for Chief of Naval Operations Availabilities Greater Than Six Months Duration (Submarines Only)
- P Summary of Significant Post Repair Sea Trial Requirements (Submarines Only)
- Q Applicable RMC Availability Completion Certification Sheet (Surface Force Ships Only)
- R Availability Quality Management Plan (QMP) (Surface Force Ships Only)

SAMPLE MESSAGES FOR CNO SCHEDULED AVAILABILITIES (SURFACE SHIPS ONLY)

- AA Sample Ship's Request for Permission to Commence Fast Cruise (Surface Force Ships and Aircraft Carriers)
- AB Sample Ship's Report of Fast Cruise Completion (Surface Force Ships and Aircraft Carriers)
- AC Sample Supervising Authority Readiness for Sea Trial Message (Surface Force Ships and Aircraft Carriers)
- AD Sample Prime Contractor Availability Key Event Readiness Certification Memorandum (Surface Force Ships Only)
- AE Sample Fleet Maintenance Activity Availability Key Event Readiness Certification Memorandum (Surface Force Ships Only)
- AF Sample Naval Shipyard Availability Key Event Readiness Certification Memorandum (Surface Force Ships Only)
- AG Sample Alteration Installation Team Availability Key Event Readiness Certification Memorandum (Surface Force Ships Only)
- AH Sample Ship's Force Availability Key Event Readiness Certification Memorandum (Surface Force Ships Only)
- AI Sample Quality Assurance Availability Key Event Readiness Certification Memorandum (Surface Force Ships Only)
- AJ Sample Final Availability Key Event Readiness Certification Memorandum (Surface Force Ships Only)
- AK Branding Category (CAT) A Change Deferral Process (Surface Force Ships Only)
- AL BAWP Change Deferral Request (SAMPLE)
- AM Availability Planning Conference Agenda Sample (Surface Force Ships Only)
- AN BAWP Work Item Branding Categories (Surface Force Ships Only)
- AO FDNF BAWP to AWP Process (Surface Force Ships Only)

SAMPLE MESSAGES FOR CNO SCHEDULED AVAILABILITIES OF LESS THAN SIX MONTHS IN DURATION (SUBMARINES ONLY)

- BA Sample TYCOM Message Concerning Escort Services
- BB Sample ISIC Message to TYCOM Concerning Crew Certification and Material Condition for Fast Cruise and Sea Trials
- BC Major Trial and Inspection Milestones
- BD Sample TYCOM Message to Ship Concerning Sea Trials Depth Authorization
- BE Sample Ship Message to TYCOM Concerning Readiness for Follow-On Sea Trials
- BF Sample ISIC Message to TYCOM Concerning Material Certification for Follow-On Sea Trials
- BG Sample TYCOM Message to Ship Concerning Follow-On Sea Trials Depth Authorization
- BH Sample Ship Message to ISIC Concerning Readiness for Fast Cruise
- BI Sample ISIC Message to Ship Authorizing Commencement of Fast Cruise
- BJ Sample Ship Message to ISIC and TYCOM Concerning Readiness for Sea Trials
- BK Sample ISIC Message to TYCOM Concerning Final Material Certification Prior to Sea Trials
- BL Sample Ship Message to ISIC and TYCOM Concerning Material Certification Upon Completion of Sea Trials
- BM Submarine Sea Trial Situation Report (SITREP)
- BN Sample Message Concerning Mod Alert Notification
- BO Sample TYCOM Message to Ship Concerning URO for Industrial Activity Availabilities Less Than Six Months in Duration
- BP Message Scenario for CNO Availabilities of Less than Six Months in Duration
- BQ Sample ISIC Message to TYCOM Concerning Fly-By-Wire Crew Certification and Fly-By-Wire Material Condition for At-Sea Testing or Fast Cruise and Sea Trials
- BR Sample TYCOM Message to Ship Concerning Authorization to Use Fly-By-Wire Ship Control Systems
- BS Sample ISIC Message to TYCOM Concerning Fly-By-Wire Material Certification upon Completion of At-Sea Testing or Sea Trials
- BT Sample TYCOM Message to Ship Concerning URO for Fly-By-Wire Ship Control Systems

SAMPLE MESSAGES FOR CNO SCHEDULED AVAILABILITIES OF GREATER THAN SIX MONTHS IN DURATION (SUBMARINES ONLY)

- CA Sample SRDRS Support Services Message
- CB Sample ISIC Message to TYCOM Concerning Crew Certification
- CC Major Trial and Inspection Milestones
- CD Sample TYCOM Message to Ship Concerning Completion Prerequisites
- CE Sample TYCOM Message to NAVSEA Concerning Fast Cruise and Critical Reactor Operations
- CF Sample TYCOM Message to Ship Concerning Sea Trials Depth Authorization
- CG Sample TYCOM Message to Ship Concerning URO
- CH Sample ISIC Message to TYCOM Concerning Material Certification Prior to Sea Trials
- CI Sample ISIC Message to TYCOM Concerning Material Certification upon Completion of Sea Trials
- CJ Sample Ship Message to TYCOM Concerning Readiness for Fast Cruise
- CK Sample Ship Message to TYCOM Concerning Readiness for Sea Trials
- CL Sample TYCOM Message Concerning Resumption of Sea Trials Completion Prerequisites
- CM Sample ISIC Message to TYCOM Concerning Material Certification for Follow-On Sea Trials
- CN Sample Ship Message to TYCOM Concerning Readiness for Follow-On Sea Trials
- CO Sample TYCOM Message to Ship Concerning Follow-On Sea Trials Depth Authorization
- CP Submarine Sea Trial Situation Report (SITREP)
- CQ Sample Message Concerning Mod Alert Notification
- CR Message Scenario for CNO Availabilities of Greater than Six Months in Duration
- CS Sample ISIC Message to TYCOM Concerning Fly-By-Wire Crew Certification and Fly-By-Wire Material Condition for At-Sea Testing or Fast Cruise and Sea Trials
- CT Sample TYCOM Message to Ship Concerning Authorization to Use Fly-By-Wire Ship Control Systems
- CU Sample ISIC Message to TYCOM Concerning Fly-By-Wire Material Certification Upon Completion of At-Sea Testing or Sea Trials
- CV Sample TYCOM Message to Ship Concerning URO for Fly-By-Wire Ship Control Systems

3.1 PURPOSE. This chapter provides guidance in support of advanced planning, pre planning, execution and close out of Chief of Naval Operations (CNO) Scheduled Maintenance Availabilities. The implementation of policies as set forth in references (a) through (bd) provide additional guidance as required. Requirements listed here apply unless otherwise approved by Naval Sea Systems Command (NAVSEA). Where differences may exist, NAVSEA requirements take precedence.

3.2 CHIEF OF NAVAL OPERATIONS SCHEDULED MAINTENANCE AVAILABILITIES.

- a. Chief of Naval Operations (CNO) scheduled maintenance availabilities greater than six months in duration are:
 - (1) Overhaul. An availability scheduled for accomplishment of industrial maintenance and modernization. Types of availabilities include:
 - (a) Regular Overhaul.
 - (b) Complex Overhaul.
 - (c) Engineered Overhaul.
 - (d) Refueling Overhaul.
 - (e) Refueling Complex Overhaul.
 - (f) Engineered Refueling Overhaul.
 - (2) Other availabilities. An availability scheduled primarily for industrial maintenance and installation of major, high priority alterations. Types of these availabilities include:
 - (a) Depot Modernization Period.
 - (b) Planned Incremental Availability.

- (c) Docking Planned Incremental Availability.
 - (d) Extended Drydocking Phase Maintenance Availability.
 - (e) Post Shakedown Availability.
 - (f) Carrier Incremental Availabilities.
- b. CNO scheduled maintenance availabilities less than six months in duration. Short, labor intensive availabilities scheduled for accomplishment of industrial maintenance and modernization. Types of these availabilities include:
- (1) Selected Restricted Availability (SRA).
 - (2) Docking SRA.
 - (3) Phased Maintenance Availability (PMA).
 - (4) Docking Phased Maintenance Availability.
 - (5) Service Craft Overhaul.
 - (6) Extended SRA.
 - (7) Extended Docking SRA.
 - (8) Incremental SRA.
 - (9) Extended Refit Period.
 - (10) Post Shakedown Availability.
 - (11) Pre-Inactivation Restricted Availability (PIRA)

3.2.1 **Early Start.** An “early start” is defined as that time when ships or submarines are made available by Type Commanders (TYCOM) for the execution of maintenance/modernization, including dry-docking, prior to a scheduled CNO availability start date. Other terms such as “fast start” or “smart start” are considered synonymous with “early start” within this policy.

3.2.2 **Early Start Concurrence.** TYCOMs shall provide the cognizant Naval Supervisory Authority (NSA) (e.g., Naval Shipyard, Ship Repair Facility, Regional Maintenance Center, Supervisor of Shipbuilding (SUPSHIP)) with written concurrence to execute an “early start” period not later than A-75 days, A-365 days, or A-210 days from scheduled availability start for surface ships, aircraft carriers, and submarines, respectively. The cognizant maintenance activity will formally document each “early start” period using applicable availability management control tools (e.g., Navy Data Environment, Final Review Estimate provided to the TYCOM, etc.), and include NSA acknowledgement that the availability cost to the TYCOM will be the same, as if no “early start” period was utilized, within that documentation.

3.2.3 **Readiness to Start Availability (Aircraft Carriers and Surface Force Ships Only).** The Project will conduct a Readiness to Start brief in accordance with the appropriate milestones listed in Appendix C for Aircraft Carriers and Part II, Chapter 2, Appendix D of this volume for Surface Force Ships. The purpose of this briefing is for the Project Team to demonstrate its readiness to execute, test and certify the maintenance availability. The Project Team shall review the Availability Work Package (AWP) for risks that would threaten the Project Team’s ability to accomplish the work to the expected level of quality within the scheduled time and budget. The Project Team shall develop risk mitigation strategies that eliminate or minimize risks. These risk mitigation strategies shall be outlined in a letter provided to the TYCOM and the NSA’s Immediate Superior In Command (ISIC) (e.g., Commander, Navy Regional Maintenance Center (CNRMC), NAVSEA 04X, Program Executive Officer (PEO)).

3.2.3.1 **Readiness to Start Brief.**

- a. All required Technical Work Documents (TWD) are complete, reviewed and approved by the NSA Engineering Department. Any unfinished TWDs will be discussed.
- b. The Quality Maintenance Plan (QMP) is complete and signed.

- c. The initial conditions can be established to support the work (e.g., drained, depressurized, de-energized, tag out and Work Authorization Form (WAF)).
- d. The required repair parts, materials (including pre-fabrication) and test equipment are available or will be available to support the work.
- e. Assigned project team personnel are knowledgeable, trained and qualified. The Executing Activity shall provide appropriate written documentation to support the qualifications or certifications prior to personnel performing any work.
- f. The milestones and key events schedule, critical path jobs and budget (including the overtime plan).
- g. All required MOAs are signed and a communications plan has been established between the key participants of the availability.
- h. A risk management plan is developed to mitigate or reduce risk. These mitigation or risk reduction options will be continuously evaluated throughout the availability.
- i. A Fast Start strategy shall be developed and monitored. A 100 hour beginning of the availability strategy will be part of this plan.
- j. Ship's Force availability related training plan.
- k. Readiness to receive Ship's Force. Items to be discussed shall include: adequacy of work space, computer and telephone connectivity, completion of training and Ship's Force watchbill qualifications.

3.3 MAINTENANCE POLICIES AND PROCEDURES.

3.3.1 Critical Path Jobs. Critical Path Jobs (CPJ) are those jobs or series of jobs that require special management attention and normally present the greatest risk to on time completion of the Key Event or availability. Industrial activities should be judicious in designating jobs as CPJs to prevent diverting management attention from those jobs which are, in fact, critical to on time completion of the availability. Consideration shall be given to, but not limited to, the following in determining the CPJs:

- a. Little or no room for delay exists.
- b. Establishing plant conditions.
- c. Long Lead Time Material (LLTM).
- d. Complexity of job or special skills or resources required.
- e. Significant test requirements.
- f. Not previously accomplished by a Fleet Maintenance Activity (FMA) (alterations, etc.).

3.3.2 Work Sequence Schedule. The Work Sequence Schedule is an integrated timeline (Pert Chart, Gantt Chart, etc.) that includes plant conditions, major work steps, tests and recertifications used to identify and progress CPJs. The Work Sequence Schedule should include:

- a. Staging.
- b. Establishing plant conditions.
- c. Issuing work procedures.
- d. Identifying major production steps.
- e. Testing/Recertifying.
- f. Closing out work procedures.

3.3.3 Milestones. Appendices A, B and C of this chapter are representative of Typical CNO Maintenance Availability milestones for ships.

- a. Appendix A of this chapter is applicable to submarines only. Naval Sea Systems Command (NAVSEA) will issue specific advance planning milestones for each CNO Maintenance Availability.

- (3) Publish policy concerning the number of duty sections, liberty, ship cleanliness, tagout procedures, tank closeout and blanking of otherwise exposed fluid systems, waveguides and air systems before availability start.
 - (4) Ensure non-conformances (Waivers/Deviations or Departures from Specification) submitted during the availability by any activity are approved prior to trials at sea (if held) and not later than the completion of the availability.
- b. Submarines Only.
- (1) Review the status of PMR maintenance schedules and CSMP reports with parent ISIC prior to CNO Maintenance Availabilities in order to assist in planning for accomplishment of the required planned maintenance and corrective maintenance. Additional information and requirements concerning PMR are discussed in detail in Volume VI, Chapter 24 of this manual.
 - (2) Maintain a current SUBMEPP PMR inventory of maintenance requirements and Maintenance Standards applicable to the ship class.

3.3.7.7 Maintenance Team (Surface Force Ships Only).

- a. BAWP requirements uploaded to the CSMP with a due date prior to the ship's A-470 milestone must be screened no later than 60 days prior to the requirement's due date.
- b. Screen 50 percent of the BAWP requirements in the CSMP by A-470. If A-470 occurs within 30 calendar days of C+140, the MT may forgo this screening milestone and instead have 100 percent of the BAWP requirements screened by A-410.
- c. Meet with TYCOM Representatives and SURFMEPP at A-410 to review the ship's BAWP, CSMP, active DFSs, Class Advisories and routines/services. All items will be reviewed and evaluated for branding per Appendix AN. MT will assign a Job Control Number (JCN) to active temporary DFSs with no open JCN in the CSMP (the MT shall update the DFS to reflect the new JCN as appropriate and ensure the "Job Closure Method" is set to "Both" as referred in Part II, Chapter 3 of this volume). Any updates to the BAWP will be completed by A-400.
- d. Screen 100 percent of the BAWP requirements in the CSMP by A-410.
- e. Screen any mandatory CMP requirement uploaded to the CSMP after A-410 within 60 days of its Regional Maintenance Automated Information System (RMAIS) Import Date.

NOTE: MT WILL SCREEN ALL REQUIREMENTS TO A SCHEDULED OR FUTURE MAINTENANCE PERIOD/AVAILABILITY (OTHER THAN UNFUNDED) WITHIN THE CURRENT FRP MAINTENANCE CYCLE.

- f. Forward recommended BAWP Change Deferral Requests to the TYCOM AWP Manager with justification/recommendation for approval.
- g. Provide timely close-out information for completed requirements.
- h. When required, provide CMP configuration data corrections to SURFMEPP.

3.3.7.8 Technical Warrant Holders and In-Service Engineering Agents (Surface Force Ships Only).

- a. When tasked and funded, evaluate BAWP requirement Change Deferral Requests.
- b. Provide approval or disapproval recommendations to NAVSEA 05D.

3.3.7.9 NAVSEA 05D (Surface Force Ships Only).

- a. Coordinate with the regional waterfront CHENG to review, adjudicate and provide a response for all Change Deferral Requests to SURFMEPP within ten (10) business days of receipt.
- b. For Change Deferral Requests requiring other agency approvals (e.g., Naval Air Systems Command, Naval Ship Systems Engineering Station, etc.), NAVSEA 05D will coordinate with the appropriate Technical Authority for adjudication.

- c. Provide a representative to all BAWP Process Milestone Meetings when practical.

3.3.7.10 Assessment Teams (Surface Force Ships Only).

- a. Execute CMP assessments as assigned.
- b. Upon completion of a CMP assessment requirement, the assessor will always start the Block 35 narrative for any Automated Work Request (AWR) with the words “Per (JCN)”, where ‘(JCN)’ is the Assessment JCN that generated the repair 2-Kilo followed by the characters “XX” (e.g., “Per YYYYYEM01ZA56XX”, where “YYYYY” is the ship’s Unit Identification Code and “XX” signifies a break between the JCN and the beginning of the 2-Kilo’s text description). This methodology allows maintenance personnel to connect each repair job to its initiating assessment.

3.4 AVAILABILITY WORK PACKAGE PLANNING.

3.4.1 Forces Afloat Planning Sources. The majority of the Forces Afloat Work Package can be identified in advance from the following sources:

- a. Ship’s CSMP Integrated with the Life Cycle Maintenance Plan. This document contains work items deferred during the previous maintenance availabilities, outstanding Departures from Specifications, dry dock requirements, etc. To ensure the CSMP accurately reflects the required ships maintenance, the ISIC Material Officer/TYCOM will review each ship’s CSMP in detail with the ship prior to the WDC/PRC for CNO Maintenance Availabilities. The ISIC/TYCOM 3-M Coordinator and Maintenance Document Control Office (MDCO) should provide the necessary technical assistance and training to facilitate CSMP updates.
 - (1) (Submarines Only) PMR/URO. The ISIC will load scheduled PMRs into each ship’s CSMP for a specific availability.
 - (2) Alterations.
 - (a) (Aircraft Carriers and Submarines only) The ISIC MDCO/TYCOM will enter alterations on the ship’s CSMP which the TYCOM has authorized for accomplishment. The ISIC/TYCOM calls out alterations for a specific availability based on material availability as identified by the industrial activity. Within funding constraints and TYCOM guidance, all alterations authorized on the TYCOM Alteration Management System/Navy Modernization Process are candidates for accomplishment during each availability.
 - (b) (Surface Force Ships only) SURFMEPP enters alterations on the ship’s CSMP as discussed in section 3.6 of this chapter.
 - (3) Condition Based Maintenance. (Machinery Condition Analysis/Technical Assessment, Repair, Groom and Evaluation Team/Performance Monitoring Team (PMT), Combat System Readiness Review, etc.). The ISIC/TYCOM Material Officer and Ship’s Force shall ensure that all material deficiencies identified by Condition Based Maintenance programs as identified in Part I, Chapter 2, section 2.4 of this volume are loaded into the CSMP for a specific availability.
 - (4) Life Cycle Planning Conference (Surface Force Ships Only).
 - (a) **The Life Cycle Planning Conference, held at C+130, will establish dates for the BAWP milestones, identify pre-availability assessments, review applicable DFSs, assess Ship Change Document status, review CNO availability services and routines, and discuss organizational responsibilities necessary to develop the BAWP. SURFMEPP and the Ashore Ships Maintenance Manager are required to attend.**
 - (b) **SURFMEPP will maintain lead responsibility for BAWP development and will provide procedural oversight throughout the BAWP to AWP process. The TYCOM Type Desk Officer, Type Desk Assistant or AWP Manager, the Combat Systems Port**

Engineer, the RMC Project Manager, NRCM Code 200, SEA-21 Program Manager Representatives, NAVSEA 05D Ship Design Manager, CNSL/CNSP N43, MSMO Contractor (and/or Planning Activity), RMC Assessment Director and the ship's MT are all invited to attend.

- b. Work Routines. A set of Master Job Catalog standard work routines should be developed for every availability. The MDCO/TYCOM tailors each work routine package to the needs of the ship by calling out additional work routines to document periodic, interim drydocking, URO maintenance and calibration recall requirements, as applicable.
- c. Pre-Availability Tests and Inspections. Ship's Force, PMTs and industrial activity inspectors perform and submit the results of these pre-availability tests and inspections to the industrial activity/SUBMEPP (Submarines)/PMS 312C (Aircraft Carriers)/applicable TYCOM (Surface Force Ships) for evaluation and inclusion in the AWP, as applicable. NAVSEA 07T provides results and recommendations for pre-availability tests performed by PMTs and Ship's Force.
- d. Additional requirements for nuclear powered ships are contained in reference (b).

3.4.2 Forces Afloat Planning Actions. Ship's Force shall take the following maintenance availability planning actions, as applicable:

3.4.2.1 Forces Afloat Work Package Preparations.

- a. Develop a Ship's Force concurrent Work Package that includes all major maintenance actions such as Planned Maintenance System (PMS), Reactor Plant PMS, repairs, PMRs, alterations, and testing to be conducted by Ship's Force during the availability, as applicable.
- b. Identify CPJs in accordance with paragraph 3.3.1 of this chapter, and submit to the planning/industrial activity for integration into the availability schedule.
- c. Establish a strategy for calibration of gages, instruments, and tools based on the Calibration Recall List.
- d. Identify all industrial activity provided production and testing support equipment needed to accomplish Ship's Force work, or to recertify systems following Ship's Force work. Identify this equipment to the industrial activity prior to the start of the availability. This support equipment includes the following, as applicable:
 - (1) Reactor Plant PMS support equipment.
 - (2) System hydrostatic test equipment.
 - (3) Calibration equipment.
 - (4) Special tools.
- e. Ship's Force should use Appendices A, B or C of this chapter as guidance to prepare for availabilities, as applicable. These appendices provide Typical CNO Maintenance Availability Planning Milestones for submarines, surface ships and aircraft carriers respectively.

3.4.3 Availability Work Packages.

3.4.3.1 Availability Work Package Content. The AWP includes all nuclear and non-nuclear authorized industrial work and associated Forces Afloat work for modernization, maintenance and repair during the availability. The work described is developed from NAVSEA and TYCOM instructions. **Forces Afloat actions in the AWP scheduled to complete prior to availability start are critical in defining additional work candidates in accordance with Appendix D.**

3.4.3.2 Availability Work Package Sources.

- a. CMP.
- b. NAVSEA authorized alterations.
- c. TYCOM authorized alterations, repairs, PMRs, Engineering for Reduced Maintenance Costs items and baseline AWP.

- d. Results of pre-availability tests and inspections.
- e. CSMP.

3.4.3.3 Availability Work Package Development. The five stages of AWP development include Baseline, Preliminary, Proposed, Approved, and Completed.

- a. SUBMEPP (Submarines)/PMS 312C (Aircraft Carriers)/SURFMEPP Activity (all other Surface Ships) develop and maintain Baseline AWP for each ship class and type of availability.
- b. SURFMEPP (Surface Force Ships only) is responsible for BAWP development. The BAWP is comprised of mandatory periodic CMP requirements and mandatory corrective maintenance actions from the Technical Foundation Paper's Long Range Maintenance Schedule. Additional mandatory life cycle critical work (i.e., CSMP repairs that have been branded as mandatory by SURFMEPP and repairs associated with DFSs) as well as non-mandatory CMP items (i.e., TYCOM requested assessments, approved and authorized modernization jobs and CNO availability services) will be combined with the BAWP to develop the AWP as the maintenance cycle progresses. Mandatory life cycle critical work (identified by having an "A" brand in the category of work field), regardless of its origin (e.g., SURFMEPP, Ship's Force or RMC), will be tracked and/or adjudicated using processes described in this section.
- c. SUBMEPP (Submarines)/PMS 312C (Aircraft Carriers)/applicable TYCOM (all other Surface Force Ships) consolidate the Baseline AWP, NAVSEA authorized alterations and TYCOM authorized alterations, repairs, PMRs and Engineering for Reduced Maintenance Costs items to produce the Preliminary AWP. This Preliminary AWP is issued approximately 12 to 14 months prior to the start of the availability.
- d. Systems Command (SYSCOM), TYCOM, and the ship's CO should review the Preliminary AWP to ensure that it includes known work candidates and authorized alterations that will not be accomplished prior to availability start and for proposed work candidates, which in their opinion, are unnecessary. Appendix D of this chapter provides suggested guidelines for review of the AWP. Following the initial review of the Preliminary AWP, Ship's Force shall host a meeting with the TYCOM and SUBMEPP/PMS 312C, as applicable to consolidate comments and recommendations for the WDC/PRC. This meeting is normally held early in the same week as the WDC/PRC.
- e. SUBMEPP (Submarines only)/PMS 312C (Aircraft Carriers only)/TYCOM (**Other** Surface Force ships **only**) will host a WDC/PRC attended by NAVSEA, the Supervising Authority, FMA (if applicable), TYCOM, ISIC, PMT (Submarines Only), Strategic Systems Project Officer (SSBN/SSGN 726 Class submarines only) and Ship's Force when practical. During this meeting the Preliminary AWP is carefully reviewed and the SYSCOM and the TYCOM authorize the work. When actions are required before a decision is made, those actions are identified and subsequently monitored. The goal is to issue the Proposed AWP (one which represents all SYSCOM/TYCOM authorized work integrated and specifically tailored to the ship involved) within two months following this meeting. At this meeting, the SYSCOM/TYCOM authorizes the industrial activity to continue with planning on the basis of the work identified in the AWP. During this meeting any activity may submit new work candidates for consideration by the SYSCOM/TYCOM. The SYSCOM/TYCOM will authorize or reject each new work candidate submitted. **For Surface Force Ships only, the NSA Chief Engineer will review requested growth and new work items for technical compliance.**
- f. SURFMEPP (Surface Force Ships only) will host three scheduled meetings over the course of the ship's FRP Maintenance Cycle: the LCPC (C+130), the CSMP/DFS/BAWP Mid-Cycle Review (A-410) and the BAWP Close-Out Verification and Assessment Meeting (C+45). When possible, SURFMEPP conferences will be held in conjunction with other MT scheduled meetings, such as monthly Availability Advanced Planning Meetings and Planning Board for Maintenance (PB4M).
- g. SYSCOM/TYCOM and the ship's CO should review the Proposed AWP to ensure that it contains all agreements made at the WDC/PRC. Appendix D of this chapter also provides suggested guidelines for review of this AWP.

- h. The Supervising Authority will host a PAC attended by NAVSEA, FMA (if applicable), TYCOM, ISIC, SUBMEPP (Submarines)/PMS 312C (Aircraft Carriers), and Ship's Force when practical. During this meeting the Proposed AWP, with results of the pre-availability tests and inspections incorporated where possible, will be carefully reviewed and the SYSCOM/TYCOM will approve the work. The goal is to issue the Approved AWP at the conclusion of this meeting. During this meeting any activity may submit new work candidates for consideration by the SYSCOM/TYCOM and NSA Chief Engineer. The SYSCOM/TYCOM will authorize or reject each new work candidate submitted. For Surface Force Ships only, the NSA Chief Engineer will review requested growth and new work items for technical compliance.
- i. Within six months after the completion of the availability, SUBMEPP (Submarines)/PMS 312C (Aircraft Carriers)/applicable TYCOM (all other Surface Ships) will issue the Completed AWP.

3.5 AVAILABILITY PLANNING.

3.5.1 Ship's Force Pre-Planning.

- a. To effectively complete the Ship's Force and Maintenance Support Team (MST) (if assigned) responsibilities during the months preceding the start of the availability, it is necessary to assign an Officer/Chief Petty Officer as the Availability Coordinator, responsible for coordinating the completion of the milestones. The quality of the availability will be reflected in the preparations done by Ship's Force and MST (if assigned).
- b. Prior to commencement of the availability, the industrial activity will request the ship to provide personnel Temporary Assigned Duty to the activity (approximately one month prior to the start date). The industrial activity will identify the personnel requirements of this pre-arrival team based on the type of availability and ship class.

NOTE: THE SUCCESS OF THE AVAILABILITY IS DIRECTLY RELATED TO THE QUALITY AND EXPERIENCE LEVEL OF THE TEAM MEMBERS ASSIGNED.

3.5.1.1 Industrial Activity Visit. The ship's CO, Executive Officer, MST Officer In Charge (OIC) (if applicable) and department heads will visit the industrial activity as soon as practical prior to the start of the availability. The CO shall meet key industrial activity managers involved in the availability, other COs of ships in availabilities at the same industrial activity and if applicable, the local Naval Reactors Representative. The Executive Officer, MST OIC (if applicable) and department heads shall meet their counterparts within the industrial activity Project Team and counterparts assigned to other ships in an availability at the same industrial activity. The Executive Officer shall also check available crew quarters and barge accommodations, if applicable. Ship's Force shall:

- a. Coordinate with the industrial activity to conduct pre-availability training and indoctrination. The following are suggested topics for training:
 - (1) Industrial activity organization and Ship's Force/MST (if assigned) interface.
 - (2) Industrial activity procedures and practices, including:
 - (a) Operational Control Transfer.
 - (b) Tagout/Rip-Out/Work Authorization Form. This training shall address the WAF/tagout process described in Volume IV, Chapter 10, paragraph 10.4.1.2 of this manual.
 - (c) SUBSAFE REC Procedures.
 - (d) Deficiency Reporting and Correcting.
 - (e) Radiological Controls Agreement.
 - (f) General Testing Requirements.
 - (g) Defueling/Fueling Requirements (Nuclear Reactor and Fossil Fuel).
 - (h) Industrial Activity Procedures for Accomplishing PMS of Equipment Under Their Cognizance.

- (i) Nuclear Reactor/Radiological Accident Plan.
 - (j) Maintenance of Ship's Cleanliness.
 - (k) QA Interface with the Industrial Activity.
 - (3) General schedule of Key Events and phases of work and testing.
 - (4) Safety requirements including Ship's Force/MST (if assigned) industrial activity responsibilities for:
 - (a) Dry Dock Safety.
 - (b) Fire Watches.
 - (c) Watertight Integrity.
 - (d) Reactor Plant Safety.
 - (e) Personal Protective Equipment.
 - (5) Relationship with industrial activity management including responsibility regarding weekly management meetings.
 - (6) Functions and responsibilities of the joint test groups (Nuclear/Hull, Mechanical and Electrical/Combat Systems) and the Ship's Safety Council including the designation of Ship's Force group and council members.
 - (7) Control mechanism for work and tests affecting ship's conditions.
 - (8) Special evolutions and procedures to be conducted early in the availability such as dry docking and establishing plant conditions.
 - (9) QA.
 - (10) IEM.
 - (11) Hazardous Material Requirements.
 - (12) Special Environmental Requirements.
 - (13) Support of Trials and Inspections.
 - (14) System Experts.
 - (15) Space Turnover.
- b. Develop training plan and watchstation requalification program in accordance with TYCOM directives.
 - c. Develop Plan of Action and Milestones for Ship's Force/MST (if assigned) responsibilities during the availability.
 - d. Review and prepare SSRs for turnover to the planning yard/industrial activity at the start of the availability (see paragraph 3.6.6 of this chapter).
 - e. Support the industrial activity's pre-availability shipchecks, tests and inspections.

3.5.1.2 BAWP Milestones for Surface Force Ships.

3.5.1.2.1 C+75. SURFMEPP will establish the date, location and agenda for the LCPC.

3.5.1.2.2 C+120. SURFMEPP will send a list of the FRP Maintenance Cycle CMP requirements and a list of recommended availability services to the ship's **Port Engineer (PE)** for review. This list is a preview of the initial BAWP and will be discussed in detail at the LCPC. SURFMEPP will provide a list of CMP-required assessments to TYCOM, NRMC and RMC as requested in support of the TSRA process.

3.5.1.2.3 C+130. The LCPC agenda will include a review of the planning schedule, required CMP assessments, Navy Data Environment (NDE) modernization forecasts, CNO Availability services/routines as applicable, organizational responsibilities and DFSs.

3.5.1.2.4 C+140.

- a. SURFMEPP will upload a data file (MM0001 file) with all mandatory maintenance actions and expected CNO Availability services into the ship's CSMP in support of ship-specific MT screening and brokering requirements. The data file will span approximately ten (10) calendar quarters and will include the requirements through C+120.
- b. SURFMEPP will issue formal correspondence detailing the BAWP planning schedule and outstanding action items from the LCPC.
- c. Requirements uploaded to the maintenance screening and brokering system (e.g., RMAIS) with a due date prior to the ship's A-470 milestone must be screened no later than 60 days prior to the requirement's due date.

3.5.1.2.5 A-470.

- a. Update the BAWP with new requirements resulting from configuration updates and completed mandatory requirements whose next due date falls within the current FRP Maintenance Cycle through C+120.
- b. The PE shall screen 50 percent of the BAWP requirements in **the maintenance screening and brokering system (e.g., RMAIS or the Maintenance Support Tool)**. These requirements shall be screened by the PE to a scheduled or future maintenance period/availability (other than Unfunded) within the current FRP Maintenance Cycle.

NOTE: IF A-470 OCCURS WITHIN 30 CALENDAR DAYS OF C+140, THE PE MAY FORGO THE 50 PERCENT SCREENING MILESTONE AND INSTEAD HAVE 100 PERCENT OF THE BAWP REQUIREMENTS SCREENED BY A-410.

3.5.1.2.6 A-410.

- a. SURFMEPP, TYCOM representatives, RMC and the ship's MT will meet to review the ship's BAWP and CSMP to ensure inclusion of all required services/routines and lifecycle impacting Class Advisories and active DFSs. NDE modernization forecasts are addressed as applicable. RMC Assessment Directors, RMC and TYCOM TSRA Planners, NRMC, Program Manager Representatives and representatives from NAVSEA 05D, NAVSEA 21 Modernization, CNSL/CNSP N43, MSMO Contractor (or Planning Activity), ISIC, and the ship's MT shall attend this meeting.
- b. 100 percent of the BAWP requirements in the maintenance screening and brokering system (i.e., RMAIS) are required to be screened by the ship's PE. These requirements shall be screened by the PE to a scheduled or future maintenance period/availability (other than Unfunded) within the current FRP Maintenance Cycle.
- c. Any mandatory CMP requirement pushed after C+140 (initial BAWP push) is required to be screened within 60 days of the maintenance screening and brokering system import date.

3.5.1.2.7 A-400.

- a. SURFMEPP will update the BAWP with lifecycle critical repair tasks resulting from assessment requirements in addition to the results (i.e., deferral or technical challenges) from the CSMP/DFS/BAWP Mid-Cycle review.
- b. Further changes to the BAWP must be submitted using a Change Request Deferral Letter or the **maintenance screening and brokering system**.
- c. CMP work completion, configuration updates and new CMP additions will require SURFMEPP to upload more CMP requirements into **the BAWP whose next due date falls within the current FRP Maintenance Cycle through C+120**. These updates will be coordinated with the ship's PE prior to **calldown**. If the ship is beyond A-360, updates shall be coordinated with the respective TYCOM AWP Manager in addition to the ship's PE.
- d. Mandatory CMP requirements pushed after C+140 (initial BAWP push) are required to be also screened within 60 days of their **maintenance screening and brokering system** import date.

- e. Ship Design Manager authorization via SURFMEPP Platform Engineering will be obtained if stakeholders desire to withhold or delay CMP requirements generated by configuration updates and new CMP additions if these requirements will be due prior to the end of the current FRP Maintenance Cycle.
- f. Updates will cease after 100 percent D-level maintenance lock.

3.5.1.2.8 A-360. The TYCOM's AWP Manager will review the BAWP and assume responsibility for planning and developing the AWP as described in paragraph 3.5.4 of this chapter.

3.5.1.3 Availability Coordinator (Submarines Only). A submarine served, nuclear trained Limited Duty Officer will be assigned to augment the normal ship's complement during Depot Modernization Periods, Engineered Refueling Overhauls, or Engineered Overhauls and will act as the Availability Coordinator for the ship. Availability Coordinator responsibilities are specified in Volume V, Part I, Chapter 1, paragraph 1.5.6 of this manual.

3.5.2 Docking Conference. For availabilities involving a ship's dry docking, the industrial activity will conduct a Docking Conference prior to the ship entering the activity if scheduled to go directly into dry dock.

3.5.3 Ship's Force Administrative Preparations. Ship's Force administrative preparations for availabilities will include:

- a. Necessary revisions to ship and department organization manuals to ensure compliance with established requirements.
- b. Preparation of necessary ship and department directives to ensure that administration is formally supported in accordance with current requirements.
- c. Formulation of procedures for qualification of underway/steaming watchstanders and maintenance of proficiency of inport watchstanders, including:
 - (1) Implementation of formal provisional qualification procedures.
 - (2) Establishment of qualification goals for Key Events, such as undocking, operational testing of ship and propulsion plant systems, steam testing, initial criticality, space turnover, etc.
 - (3) Incorporation of qualification requirements necessitated by alterations to ship or propulsion plant systems.
- d. Procedures for maintenance and security of Ship's Force/MST (if assigned) barge or office spaces.
- e. General overhaul plan for Ship's Force/MST (if assigned) responsible actions including provisions for:
 - (1) Ship off-load.
 - (2) Establishment of barge, berthing and messing facilities.
 - (3) Establishment of routine ship and barge watch bills.
 - (4) Scheduling of required shore based schools and leave for personnel.
 - (5) Provision for accomplishment of known Ship's Force/MST (if assigned) corrective maintenance.
 - (6) Establishment of Ship's Force PMS routines.
 - (7) Establishment of Integrated Logistics Overhaul (ILO) procedures.
 - (8) Provisions for shift work during known periods of intensive testing (e.g., Engine Room Steaming Operations, Hot Operations, Power Range Testing).
 - (9) Ship load-out.
 - (10) Target dates for completion of key ship and department directives and procedures.
- f. Assignment of ship system experts, or QA Inspectors, capable of monitoring industrial activity work on assigned systems.

3.5.4 TYCOM AWP Schedule and Documentation Requirements (Surface Force Ships Only).

- a. Assume lead responsibility for AWP management at A-360.
- b. TYCOM will conduct Availability Planning Conferences periodically throughout the availability planning timeline **in accordance with the milestones listed in Part II, Chapter 2, Appendix D of this volume.** Further details concerning Availability Planning Conferences can be found in Appendix AM.

3.5.4.1 Resource Allocation.

- a. Identify and evaluate the links between the technically mandated life cycle/service life requirements contained in the CMP, the known repair tasks mandated in the BAWP and the current readiness/corrective maintenance requirements identified in the ship's CSMP.
- b. Across this mutually supportive prioritization and resource allocation process, TYCOM will function as the representative for making resource allocation recommendations in direct support of the AWP.
- c. Submit Change Deferral Requests at any time to expedite reallocation of resources.

3.5.4.2 Prioritization. Review the MT prioritization of corrective maintenance and discretionary work requests and adjust the prioritization and add or delete maintenance items from the availability maintenance proposal based on available funding and resources. Differences between the cost of executing the defined availability maintenance requirement and available resources along with the CMP/mandatory ("A" brand) BAWP requirements that cannot be accomplished will be communicated to SURFMEPP via the Change Deferral Request Letter.

3.5.4.3 Technical Resolution. To resolve technical issues in a timely manner, A-240 and A-120 are the two major milestones for processing Change Deferral Requests and Change Notifications submitted by the TYCOM. See Appendix A O for Forward Deployed Naval Forces ships and Volume I, Chapter 2 of this manual for New Construction ships milestones.

- a. At A-240, TYCOM will submit a Change Deferral Request Letter to SURFMEPP, which will include a list of Change Deferral Requests for subject FRP Maintenance Cycle. The information provided in the Change Deferral Request Letter shall have a sufficient level of detail to enable a complete evaluation by the Technical Warrant Holder and the Ship Design Manager. SURFMEPP will forward the Change Deferral Request Letter to NAVSEA 05D for adjudication.
- b. At A-120, TYCOM will submit a second Change Deferral Request Letter to SURFMEPP providing a list of any additional Change Deferral Requests for the subject FRP Maintenance Cycle. This letter must also address BAWP requirements still in a proposed status, which do not have a pending reprogramming request. SURFMEPP will forward the Change Deferral Request Letter to NAVSEA 05D for adjudication.
- c. Subsequent Change Deferral Request submissions occurring after TYCOM delivery of the A-120 Change Deferral Request Letter shall be individually submitted. It is incumbent upon MTs and TYCOMs to discuss Change Deferral Requests as early as possible to enable a technical evaluation and an approval/disapproval granted prior to A-35.

3.5.4.4 Change Notifications. Subsequent submissions occurring after delivery of the A-120 letter will be provided to SURFMEPP by TYCOM at the BAWP Close-Out Verification and Assessment Meeting using Appendix AL format and will include the same information provided at the A-240 and A-120 milestones.

NOTE: THIS SECTION DOES NOT GOVERN NOR MODIFY THE POST-AVAILABILITY TESTING AND CERTIFICATION OR CLOSE-OUT PROCESS.

3.5.4.5 Technical Deferral and Adjudication Process for Post-AWP Definitization (A-35 Through the End of Production Work).

- a. The local RMC/Ship Repair Facility (SRF) SEA 05 Chief Engineer is empowered as prescribed in reference (bd) to provide final technical deferral authority of mandatory ("A" branded) tasks from definitization through the end of availability execution (A-35 through completion of Sea Trials and correction of RMC-responsible Sea Trials discrepancies).

- b. In the event the RMC/SRF Chief Engineer exercises this deferral authority, a signed letter with the following information must be provided to both TYCOM and SURFMEPP no later than C+45 (Availability closeout meeting).
 - (1) JCN, Job Summary.
 - (2) Reason for Non-Accomplishment.
 - (3) DFS number if required.
 - (4) Any further information that may help future completion or scheduling integration.
- c. The TYCOM will provide a letter documenting all technically adjudicated and deferred work. This letter will be forwarded to SEA 21 and SEA 05, via SURFMEPP, prior to either Hull, Mechanical and Electrical or Combat Systems Production Completion date, whichever is later.

3.5.5 BAWP/AWP Change Management Process (Surface Force Ships Only).

3.5.5.1 Branding. To support work prioritization and authorization decisions, BAWP work items must be branded using the branding category codes in Appendix AN. Change Requests to “A” branded items require adjudication through the BAWP Change Management process per Appendix AK. Change Requests are adjudicated by NAVSEA 05D via SURFMEPP. Work Item Branding Categories will be entered in the “Category of Work” block of the AWR by SURFMEPP.

3.5.5.2 CMP Cancellation Deferral Notification System. The CDNS is imbedded in the maintenance screening and brokering system and is used to track the status of all CMP mandatory maintenance in a ship’s shore file CSMP. If a particular maintenance requirement is screened to a maintenance period that starts greater than 90 days after the requirement’s due date, if the requirement is screened by the ship’s PE to an “unfunded availability”, a series of e-mails are automatically sent from CDNS to key maintenance plan stakeholders. The stakeholders then communicate with the MT to provide technically sound adjudication for the situation surrounding that specific requirement. Deferrals using this system will be routed through SURFMEPP and NAVSEA 05D as appropriate. This system provides an automated, auditable process for monitoring each ship’s accomplishment of CMP requirements. MTs are encouraged to use this system to request deferral or cancellation of mandatory CMP requirements as follows:

- a. Once SURFMEPP has entered the ship’s CMP requirements into maintenance screening and brokering system, the MT will screen each requirement to an appropriate maintenance period. Some CMP requirements may be identified by the MT as requiring deferral or correction based on errant configuration data, substitution JCNs or an inability to accomplish the requirement by the due date.
- b. When the MT identifies such a condition, it shall contact the local SURFMEPP Detachment to review the situation.
- c. If both parties agree this item should be addressed by higher technical authority, the MT will screen the item to an “Unfunded” availability or the proposed later maintenance period to initiate the CDNS process.
- d. The CDNS adjudication process will be followed to resolve the request.
- e. The PE will provide all approved deferrals to the TYCOM AWP Manager, who will list them on the BAWP Change Deferral Request letter.
- f. This process is authorized for use from C+140 to A-35 (A-615 to A-35 for Forward Deployed Naval Forces ships).

3.5.5.3 BAWP Work Item Branding Categories.

- a. Branding Category A (Mandatory – Technical). An approved Change Deferral Request or positive CDNS adjudication is required to defer the maintenance requirement (see Appendix AK). Only SURFMEPP or an authorized Technical Warrant Holder is authorized to brand items in this category. BAWP requirements in this branding category include maintenance actions which have high-level technical requirements and have been subdivided into branding categories as detailed in Appendix AN.

Any “A” branded item whose deferral violates a technical requirement (e.g., CMP mandatory requirement) requires NAVSEA 05D adjudication via the CDNS or a Change Deferral Request Letter. See Figure 1 for further explanation. Late, cancelled or deferred execution of a technical requirement may require a DFS. See Volume V of this manual for guidance regarding DFS requirements.

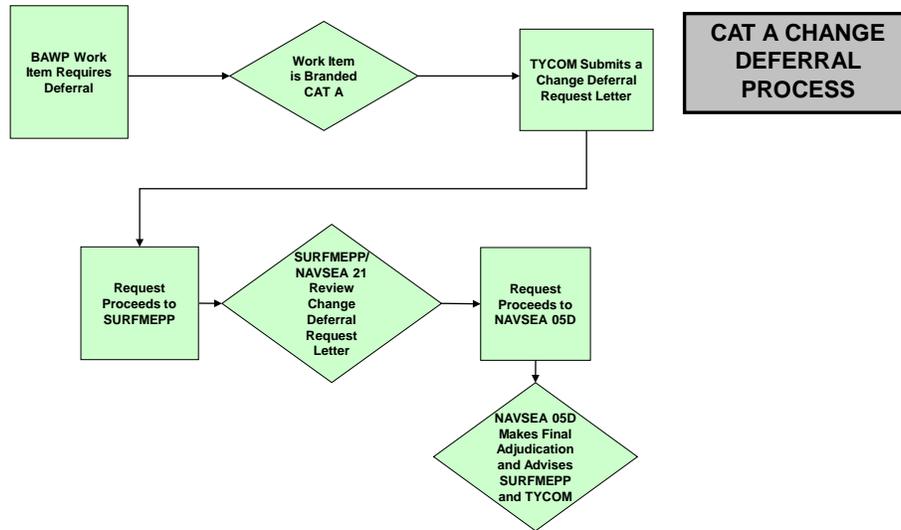


Figure 1. Branding Category (CAT) A Change Deferral Process (Appendix AK)

- b. Branding Category B (Required – Non-Technical). Items in this branding category have TYCOM significant tasks that require its approval prior to non-accomplishment; however, non-accomplishment does not require adjudication via the technical chain of command. The PE shall use RMAIS or the Maintenance Support Tool to re-screen affected task(s) to a scheduled or future maintenance period/availability (other than Unfunded) within the current FRP maintenance cycle. Work items in this branding category have been subdivided into branding categories as detailed in Appendix AN.

3.5.5.4 Branding Responsibility.

- a. SURFMEPP. Brands all technically-required, mandatory maintenance requirements residing in the CMP and any other tasks meeting branding Category “A” criteria. In addition, SURFMEPP will brand all approved and authorized Fleet and Program alterations “B3” per Appendix AN.
- b. Assessment Team. Upon completion of a mandatory assessment, the assessment team is responsible for creating CSMP-ready repair AWRs. In all cases, the assessor will always start the Block 35 narrative for any AWR with the words “Per (JCN)”, where ‘(JCN)’ is the Assessment JCN that generated the repair 2-Kilo followed by the characters “XX” (e.g., “Per YYYYYEM01ZA56XX”, where “YYYYY” is the ship’s Unit Identification Code and “XX” signifies a break between the JCN and the beginning of the 2-Kilo’s text description). This methodology allows maintenance personnel to connect each repair job to its initiating assessment.

3.5.5.5 Change Request Types. Change Requests and Change Notifications will be identified in one of the following three ways:

- a. Reprogram. Requirements due during the current FRP Maintenance Cycle, but will be moved to a future FRP Maintenance Cycle.

- b. Cancel. Requirements neither applicable nor due during the current FRP Maintenance Cycle and therefore should not be included in the BAWP, including items for which the configuration or requirement has changed and requirements with periodicities extending to a future FRP Maintenance Cycle beyond C+120 of the current cycle.
- c. De-scope. Requirements that experienced a reduction in the original scope of work, where the portion of work not accomplished is reprogrammed.

3.5.6 Modernization (Surface Force Ships Only). NAVSEA and TYCOM Letters of Authorization (LOA) are issued showing all modernizations scheduled for the CNO Availability.

3.5.6.1 Modernization List. Forecasted ship changes may be viewed through the NDE database at C+130 and continuing throughout the BAWP to AWP development process. This list will be reviewed at each BAWP Milestone Meeting. Items from this list will not be entered into the ship's CSMP until they have been reconciled with an issued LOA. After this reconciliation, SURFMEPP is responsible for entering the modernization work into the ship's CSMP. Category A and Category B BAWP-branded assessment tasks that may be affected by forecasted Ship Change Documents shall be planned and executed, despite discussion of removal or upgrade of equipment due to pending ship changes. Since the majority of "approved and authorized" modernization alterations are completed during the CNO availability, executing the assessments throughout the cycle as scheduled in the BAWP is required to ensure operational readiness throughout the FRP Maintenance Cycle. For example, NDE indicates CG-XX is scheduled for the electric modification SHIPALT 588K, which, among other changes, removes the waste heat boilers. The 18-month and five (5) year mandatory boiler inspections were entered in the BAWP at C+140 for completion during the SRA. The MT, in this case, cannot cancel the scheduled assessment without following the established deferral/adjudication process.

3.5.6.2 BAWP/AWP Update. The BAWP/AWP will be updated as subsequent LOAs are issued by NAVSEA and TYCOM as ship changes mature. This process will continue through the advanced planning and execution phases of the availability to capture late and newly authorized alterations.

3.6 AVAILABILITY EXECUTION.

3.6.1 Responsibilities. Responsibilities for CNO scheduled Maintenance Availabilities are as follows:

3.6.1.1 Fleet Commander.

- a. Monitor availability execution to achieve a balance of cost and schedule for the scope of work authorized. Ensure that any growth in the scope of work authorized is necessary to ensure safe, reliable operation of the ship during the subsequent operating cycle.
- b. Ensure that testing of all systems and equipment installed or repaired during the availability, which require at sea testing, is conducted prior to availability completion.
- c. Provide berthing, messing, offices, classrooms, equipment stowage space, and Ship's Force repair shops in accordance with reference (d), when shipboard facilities are unusable or uninhabitable.

3.6.1.2 Type Commander/Immediate Superior In Command (Group or Squadron).

- a. Authorize new items and growth industrial work items.
- b. Monitor and approve all changes in established milestones, not internal to industrial activity, including LOA and completion dates.
- c. Issue direction when the quality or completeness of industrial activity work is in question.
- d. Monitor off-ship crew messing and berthing arrangements when required.
- e. Notify the TYCOM when essential Ship's Force work cannot be completed on the scheduled contract or Key Event completion date. Make recommendations for assistance where appropriate.
- f. (Surface Ships Only). Periodically assess and monitor shipboard conditions using Appendix E of this chapter for guidance.
- g. (Submarines Only). Periodically assess and monitor shipboard conditions in accordance with paragraph 3.6.8.4.4 of this chapter.

- h. Monitor Ship's Force/MST (if assigned) preparation for LOA (if applicable).
- i. (Nuclear Powered Ships Only). Conduct a Pre-Critical Inspection of the Engineering Department to determine the ship's readiness for either the Reactor Safeguards Examination (RSE) or the Fleet Commander Post-Overhaul Reactor Safeguards Examination (PORSE) as applicable.
- j. (Submarines Only). Schedule a salvage inspection by Forces Afloat in time to have discrepancies corrected prior to the start of Fast Cruise. Normally, the salvage inspection should be completed not less than one week prior to the scheduled start of the Fast Cruise.
- k. Conduct formal Phase I crew certification inspection(s) of the Ship's Force in accordance with the TYCOM Training Manual (when required). The purpose of this inspection shall be to audit the readiness and training of the Ship's Force, particularly in the areas of watchstander qualifications, damage control readiness, status of operational and emergency bills, presence on board of essential technical manuals, and general operational knowledge. This inspection shall be scheduled about one month prior to Fast Cruise and should include written examinations and personal interviews with officers and key enlisted personnel to determine their readiness and status of training as outlined for Phase I. A comparison of personnel allowance (including Navy Enlisted Classification requirements) versus onboard count shall be made to ensure that the ship is adequately manned.
- l. (Submarines Only). Prior to Fast Cruise, the ISIC QA Officer shall conduct a formal audit of Ship's Force REC, Departure from Specification Records and CSMP. Using the SUBMEPP PMR and URO Maintenance Requirement Card (MRC) scheduling reports and current industrial activity/Ship's Force updates to the latest report, ensure all required "D"-Level PMR and URO MRC accomplishment is current. The ISIC shall forward the audit results to the TYCOM via the cognizant Commander, Submarine Group. The ISIC will then report to the TYCOM by message in accordance with message sample format of Appendix BB or CB of this chapter the status of the crew/material certification. An update of this certification is needed prior to Sea Trial and following the rescinding of certification noted in paragraph 3.6.8.4.1.c. of this chapter.
- m. Conduct Phase II crew certification. Witness and certify to the TYCOM that the state of crew training is satisfactory for at sea operations in accordance with the TYCOM Training Manual. This will be done during a two day period subsequent to Dock Trials and Phase I crew certification, and prior to Fast Cruise. This two day period shall be scheduled so that there is normally a 48 hour period between the end of this event and the beginning of Fast Cruise. This two day Phase II crew certification period is divided into a 40 hour crew work-up and rest period and an eight hour modified dockside Operational Readiness Inspection. The entire period should be scheduled to minimize interference with industrial activity work. However, since the certification must be conducted carefully to be meaningful, the officer scheduling the certification should coordinate industrial activity interference during the eight hour modified Operational Readiness Inspection. This certification should be thorough and meticulous. Pressure from the industrial activity or any other source to compromise ship safety must not be permitted to influence the judgment of the certifying officers. The desired overall sequence of these events is shown in Volume I, Chapter 2, Appendix B of this manual.
- n. Conduct a material inspection of the ship.
- o. Satisfactory completion of the inspections of paragraphs 3.6.1.2.k. through 3.6.1.2.m. of this chapter should be reported to the TYCOM in one "PRIORITY" crew certification message in accordance with sample message format of Appendix BB or CB of this chapter paralleled by a telephone call to the TYCOM Watch Officer reporting the date-time group of the message. If significant deficiencies exist or it appears that an extension of time is required to correct training/material deficiencies, the TYCOM shall be immediately advised by telephone and by message. The Supervising Authority will be included as an information addressee.
- p. Receive from the ship's CO/Supervising Authority the scope, schedule and agenda of tests for Sea Trials for review and approval. When approved, forward copies of the agenda to the TYCOM. The concurrence of NAVSEA is required for the sequencing and scheduling of nuclear propulsion plant Sea Trials for CNO Maintenance Availabilities.

- q. (Submarines only) Prior to Sea Trials, report material certification of the ship by message in accordance with message sample format of Appendix BB or CB of this chapter, to the TYCOM.
- r. Monitor the progress of the availability.
- s. (Submarines Only) If required, initiate Operating Cycle Extension Assessment in accordance with references (f) and (g).

3.6.1.2.1 Extended Operating Cycles. (Submarines only) An extended operating cycle is the period of time from the end of the current operating cycle to the anticipated start of the next major depot availability (Depot Modernization Period, Engineered Overhaul, Engineered Refueling Overhaul, Inactivation). The Interim Drydocking (IDD)//PIRA AWP is comprised of minimum maintenance requirements that are required to support the specific operating cycle extension, as well as necessary repairs based on the submarine's material condition.

- a. For extended operating cycles less than 24 months performed by naval shipyards, the TYCOM shall certify completion of IDD/PIRA availabilities. For extended operating cycles less than 24 months performed by private shipyards, the SUPSHIP, with assistance from NAVSEA, will certify completion of IDD/PIRA availabilities.
- b. For extended operating cycles of 24 months and greater, NAVSEA shall certify completion of IDD/PIRA availabilities.

3.6.1.3 Fleet Maintenance Activity. A scheduled CNO Maintenance availability may involve concurrent FMA repairs. During such availabilities, it is imperative that the industrial activity and the FMA involved maintain a close working relationship, both between themselves and Ship's Force, to ensure a successful, on-time availability completion. As a minimum, the FMA must:

- a. Carry out all FMA work consistent with the procedures described in Part I, Chapter 4 of this volume.
- b. Participate in all Weekly Management Meetings. (See paragraph 3.6.3.1 of this chapter.)
- c. Provide information on FMA Job Status for ship's Weekly Situation Report (SITREP). (See Appendices F₁ or F₂, as applicable, of this chapter.)
- d. Closely coordinate all jobs affecting Key Event/Milestone completion dates with the industrial activity and Ship's Force.
- e. Assist the industrial activity and Ship's Force by maintaining good housekeeping on all job sites.

3.6.1.4 Ship's Force and MST (if assigned).

- a. Support work authorization, tagout and REC programs.
- b. (Submarines Only) Ensure no work is conducted within the certified SUBSAFE boundaries without proper authorization.
- c. Monitor the quality of the industrial activity's performance.
- d. Support industrial activity test programs and witness equipment testing.
- e. Perform IEM.
- f. Ensure Ship's Force work is integrated into the industrial activities schedule.

NOTE: FLEET POLICY DOES NOT PROHIBIT SHIP'S FORCE FROM ACCOMPLISHING WORK ON EQUIPMENT, COMPONENTS OR SYSTEMS NOT OTHERWISE ASSIGNED TO THE INDUSTRIAL ACTIVITY AS LONG AS SUCH WORK DOES NOT IMPEDE THE INDUSTRIAL ACTIVITY SCHEDULE OR IMPACT PRIMARY SHIP'S FORCE RESPONSIBILITIES. THE MAJORITY OF PERSONNEL LEAVE, PARTICULARLY FOR THE WEAPONS AND ENGINEERING DEPARTMENTS, SHOULD BE PROGRAMMED EARLY IN THE AVAILABILITY SO THAT NECESSARY PERSONNEL WILL BE AVAILABLE FOR SUCH THINGS AS COMBAT SYSTEM TESTING, HOT OPERATIONS, ENGINE ROOM STEAMING, POWER RANGE TESTING AND FAST CRUISE.

- g. Train and qualify personnel to support the Key Event schedule.
- h. Perform site visits where contractor services are being used for equipment refurbishment.

- i. Ensure LOA preparations are progressing on schedule.
- j. Attend weekly progress meetings.
- k. Ensure that equipment returned to the ship has passed required shop tests.
- l. (Surface Ships Only) For dry docking availabilities:
 - (1) Make sure that bilges are properly preserved. To avoid moisture from condensation, plan to complete bilge painting before the ship undocks.
 - (2) Make sure that air testing scheduled for tanks below the water line is completed before the ship undocks.
 - (3) Make sure that all hull valves are reinstalled and tested before the ship undocks.
 - (4) Make sure that underwater preservation is completed, that water line boot is painted evenly and draft marks restored before the ship undocks.
- m. Arrange for a post repair boiler inspection by Naval Surface Warfare Center Carderock Division (NSWCCD), and ISIC representatives. Detailed information concerning this inspection can be found in Volume IV, Chapter 3 of this manual.
- n. Schedule Combat Systems Mobile Training Team visit with the ISIC.
- o. Develop a Plan of Action and Milestones for LOA.

3.6.2 Arrival Conference.

3.6.2.1 Scheduling and Conducting. The arrival conference is scheduled shortly after the start of an availability and conducted by the industrial activity and attended by the CO, Executive Officer, MST OIC (if applicable), heads of department and their principal assistants, key shipboard personnel and a TYCOM representative. This meeting also provides an excellent opportunity for Ship's Force to meet key industrial activity personnel.

- a. The conference agenda should include, as a minimum, the following topics:
 - (1) Resolve problems not completed at the WDC/PRC/PAC.
 - (2) A discussion of work scheduling and production planning requiring close cooperation between Ship's Force and industrial activity personnel. Changes to dates for Key Events such as dry docking, Dock Trials, Fast Cruise, and Sea Trials shall be made known and agreed upon at this time.
 - (3) Dissemination of planning information, such as job orders that have resulted from the deferral actions approved for industrial activity accomplishment.
 - (4) Resolution of any problems regarding work to be undertaken or material or scheduling problems.
 - (5) Reporting of plans and material status on Key Events or CPJs.
 - (6) Discussion of industrial activity regulations and other pertinent requirements affecting the ship.
 - (7) Dissemination of general administrative information of interest to Ship's Force, such as industrial activity and local facilities for training, recreation, housing accommodation, parking, etc.
- b. Activities may submit new work items for consideration.
- c. Industrial activity schedule daily/weekly meetings.
- d. Submit an Availability Start Message to cognizant Fleet Commander at the start of an industrial availability.

3.6.3 Routine Meetings and Conferences.

3.6.3.1 Weekly Management Meetings. Senior industrial activity management officials should meet weekly with the CO of the ship during the availability.

- a. Purpose. These meetings provide a formal means by which attendees can address important specific issues with the senior industrial activity official to obtain appropriate resolution. Questions not answered relative to the conduct of this meeting should be addressed by the CO through the ISIC (if applicable) to the TYCOM.
- b. Execution.
 - (1) The industrial activity Senior Officer/Manager will designate the time and day of the week for the meeting.
 - (2) Attendees will submit agenda items normally within 24 hours before the meeting. The industrial activity will collect, collate, and prepare all agenda items in writing and distribute them to attendees at the meeting.
 - (3) Attendees will discuss agenda items at the meeting.
- c. Attendees. The industrial activity chairs the meeting. The following personnel shall attend and participate:
 - (1) The CO of the ship being repaired. The Executive Officer should attend if the CO cannot be personally present for any meeting.
 - (2) At some industrial activities, the TYCOM may designate a representative to attend. If so, he may submit agenda items in addition to those submitted by CO's that may be broadly applicable to all ships in specific availabilities. In the record, there shouldn't be any "TYCOM Position" on any items. The CO has the responsibility to deal with the senior industrial activity official on problems relating to his ship.
 - (3) The industrial activity Project Manager or equivalent.
 - (4) (Nuclear Powered Ships Only). The Naval Reactor Representative at industrial activities authorized to conduct naval nuclear work.
 - (5) Industrial Activity Senior Management (e.g., Engineering Department Head, QA Head, Production Officer).
 - (6) Any industrial activity personnel as required to support specific agenda items.
 - (7) MST OIC (if applicable).
- d. General Guidelines.
 - (1) Before submitting an agenda item, the ship CO should have made an attempt to resolve the problem at an appropriate level within the industrial activities organization.
 - (2) When agenda items are general subjects such as overall schedule adherence, overall industrial activity manning of ships, overall ship cleanliness, performance of workers and overall ship safety, sufficient factual data should be included to substantiate them.
 - (3) (Nuclear Powered Ships Only). Ship COs should not routinely submit their agenda items to the Naval Reactors Representative Office (NRRO) for review prior to giving them to the industrial activity's Senior Manager. This does not mean that specific questions related to agenda items cannot be discussed with the NRRO. They should be. Ship COs should not expect the NRRO to be a screen for checking the appropriateness of the item.
 - (4) Ship COs in private activities must be extremely careful in wording their agenda items, in the discussions at the meeting and in agreeing to words in the minutes to assure that they do not introduce or give tacit agreement to contractual matters.
 - (5) Ship COs should not submit items for the management meeting as a means to merely determine the status of a job.
 - (6) If required by the TYCOM, ship COs shall provide a copy of the minutes of each meeting to their ISIC/TYCOM.

COSAL use and maintenance training provides shipboard personnel with a working knowledge of the COSAL, its relationship to other maintenance documents and the procedures to ensure that logistics support remains current, (e.g., use of OPNAV 4790/CK Forms).

- c. The Ship's Force team will develop an off-load schedule of all ship's spare parts. The ship's spare part stowage plan will be updated to reflect changes in the desired location of individual spare parts. Additionally, provisions must be made for the Aviation Consolidated Allowance List to support the embarking air wing.
- d. A ship load-out schedule, including stores, repair parts, yellow gear, and removal of industrial activity equipment, will be prepared by the ship with the assistance of the industrial activity.
- e. During a CNO maintenance availability, the ship will ensure that new/removed equipment is reflected in the COSAL and that the required spare parts are added/subtracted as applicable. Allowance changes are to be requested in accordance with reference (i).
- f. Spare parts, test equipment, and special tools are the hardware portion of new and old equipment. The other portions are software: drawings, technical manuals, allowance lists, operating instructions, and any other technical documentation. Prior to commencement of an availability, NAVSEA will task the industrial activity with providing a listing and schedule, for installation on board the ship, of all technical documentation for new equipment, including changes to SSR drawings and data. The ship is responsible for the installation and maintenance of technical documentation for all existing equipment.
- g. The status of the installation of technical documentation will be reported in the Material Condition/Crew Readiness Status Report.

3.6.6 Ship's Selected Records.

- a. The SSRs include various tables, charts, drawings, damage control books and plates, technical manuals and other data selected for their reference value and kept current throughout the life of the ship. Accurate SSRs are necessary for configuration control, maintenance support and troubleshooting. SSR items are:
 - (1) Ship's Information Books.
 - (2) Technical Manuals.
 - (3) Damage Control Books and Plates.
 - (4) Propulsion Operating Guides/Engineering Operational Sequencing System.
 - (5) Ship's Drawing Index (SDI).
 - (6) Index of Technical Publications.
 - (7) Docking Drawings (plan showing each of the docking positions).
 - (8) Booklet of General Drawings.
 - (9) Tank Capacity and Vehicle Center of Gravity Curves.
 - (10) Tank Sounding Tables.
 - (11) Other tables, charts, allowance lists, etc.
 - (12) Docking Reports (most recent two industrial availability dockings, and any interim reports).
- b. The ship should appoint a SSR Coordinator for the availability. The Coordinator should review the SSRs in paragraph 3.6.6 of this chapter, determine which items will be affected by work candidates listed in the approved work package, and send copies of these SSRs to the industrial activity responsible for executing the availability. The copies sent must include markups showing any changes accomplished during previous availabilities since last update. The ship must retain a master copy of each SSR item and keep it current. If SSR is on microfilm/electronic media, mark up hard copy prints.

- c. The SSR Coordinator will serve as the ship point of contact for dispatch, receipt and monitoring status of SSR items during the availability.

3.6.7 New Work.

- a. New work is any maintenance requiring industrial level assistance which is not authorized until after contract award or definitization.
- b. New work must be requested by message or letter to the appropriate TYCOM (information copy to the Supervising Authority, ISIC, SUBMEPP (Submarines), or PMS 312C (Aircraft Carriers), as applicable). Sample letter/message formats are provided in Appendices G and H of this chapter for requesting new work authorization. Work not currently in ship's CSMP must be added to CSMP prior to requesting new work approval.
- c. All new work candidates must be reviewed by and agreed to by the assigned Ashore Ships Maintenance Manager, Project Manager or Program Manager. Ashore Ships Maintenance Manager and Program Manager recommendations regarding requirement to perform repairs, risk assessment, and schedule impact are mandatory. The TYCOM, or the formally designated TYCOM representative, shall be the final approving authority for all new work. **For Surface Force Ships only, the NSA Chief Engineer will review requested new work items and determine whether or not they are technically required and/or required to achieve minimum material readiness requirements.** In the case of private industrial activity availabilities, the TYCOM will certify that, in accordance with Federal Acquisition Regulations, the accomplishment of the new work is of such unusual and compelling urgency so as to require waiving of Competition In Contracting Act public law regulations.

3.6.8 Trials, Inspections and Crew Certification.

3.6.8.1 Surface Force Ship.

- a. Crew Certification. Crews in ships undergoing major CNO Maintenance Availabilities must be effectively trained in standard operating procedures, emergency bills, casualty drills, etc., and be thoroughly cognizant of equipment either newly installed or relocated during the availability. Based on the length and type of availability, Crew Certifications will be conducted in accordance with references (j), (k) and (l), as applicable.
- b. LOA. LOA will be conducted, if the availability exceeds 120 days or as deemed necessary by the TYCOM. The ISIC, assisted by an assessment team provided by Fleet Commander N7, will conduct the LOA. LOAs will be scheduled by means of the ISICs input into the normal scheduling process.
- c. Steam Testing. All steam systems/equipment worked by the industrial activity shall be tested in accordance with the Testing Plan developed by the industrial activity. Ship's Force shall work closely with the industrial activity, providing necessary assistance and support, to carry out the Test Plan.
- d. Dock Trials. During an industrial activity availability and prior to conducting post-repair trials, the engineering plant shall be tested to ensure its readiness for sea. All special sea details and required general quarters will be manned throughout the trials. Ordinarily, dock trials can be completed in one day or less. The minimum requirements for Dock Trials are listed in Appendix I of this chapter.
- e. Fast Cruise.
 - (1) All ships completing a CNO Maintenance Availability shall conduct a Fast Cruise where the ship assumes, insofar as practical, an "at sea" posture while inport with all equipment/systems used to the maximum extent possible. The primary purpose of the Fast Cruise is to determine and certify the state of training of ship's company as adequate to conduct at-sea operations. The progress toward this goal is a critical evolution ongoing throughout the availability requiring the TYCOM and ship's CO attention. The training program must be designed to have completed all training necessary to safely operate the ship at sea prior to Fast Cruise. The Fast Cruise provides the opportunity to measure ship's preparedness; it is not a basic training period. Commencement of Fast Cruise requires TYCOM permission. Appendix AA of this chapter provides a sample message format for Ship's Request for Permission to Commence Fast Cruise.

- (2) The following procedures pertain to the conduct of Fast Cruise:
- (a) Fast Cruise will be included as a major event and scheduled for at least two days duration by the industrial activity in the case of ships undergoing a CNO maintenance availability greater than six months in duration or at least one day for ships undergoing a CNO maintenance availability less than six months in duration. The Fast Cruise shall follow Dock Trials and precede Sea Trials.
 - (b) A schedule of proposed events shall be promulgated by the ship to all activities concerned and shall be concurred with by the industrial activity.
 - (c) Limited numbers of industrial activity personnel may be permitted to be aboard as necessary to continue testing and production work on systems as required. Shop and technical personnel shall be permitted on board as instructors, troubleshooters and QA representatives of the industrial activity. Equipment that is not complete shall not be included in the Fast Cruise. Settlement of the foregoing provisions shall be reached by mutual agreement between the CO and the industrial activity, as warranted.
 - (d) As a minimum standard, system operation tests and drills described in Appendix J of this chapter shall be conducted in all Fast Cruises. It is intended that the necessary prerequisite training shall have already been accomplished.
- (3) The Ship's CO will report completion of Fast Cruise to the TYCOM. Appendix AB of this chapter provides a sample message format.
- f. Rest and Repair Period. All ships completing a CNO Maintenance Availability shall normally conduct a 48 Hour Rest and Repair Period to ensure Ship's Force is mentally and physically prepared after completing Fast Cruise and before the start of Sea Trials. The primary purposes of the Rest and Repair Period are to evaluate the results of Fast Cruise; to consider ship condition; to conduct necessary repairs on ship's equipment and systems; and to evaluate and conduct additional training for Ship's Company to ensure the ship is prepared to the highest possible standard.
- g. Sea Trials.
- (1) Sea Trials (or Post Repair Trials) constitute the final determination of a ship's material readiness and ability to rejoin the Fleet as a fully operational unit. Each Sea Trial will be conducted in accordance with an agenda prepared by the industrial activity, concurred with by the ship's CO, and approved by the TYCOM. The Sea Trial Agenda will be prepared in four phases and will contain the minimum requirements of Appendix K of this chapter, a time-oriented sequence of events in Gantt chart form, and a matrix of fleet services required to support the trial. The requesting ship/industrial activity will arrange for these Fleet services in accordance with Fleet Commander Instructions. Since the purpose of the trial is to determine the material readiness of the ship, all systems/equipments overhauled by the industrial activity will be tested in accordance with an industrial activity prepared test procedure which will document the results of the test and require operation of the system/equipment in all modes. A Ship's Force Trial Officer will be appointed to coordinate with the industrial activity Trial Coordinator throughout the Sea Trial. The Trial Officer will accept the results of all tests for the ship. Ship's Force personnel will operate all equipment during the Sea Trial in accordance with standard operating instructions or Sea Trial test procedures, as appropriate. Commencement of Sea Trials requires TYCOM permission. Appendix AC of this chapter provides a sample message format for the Supervising Activity to report all work necessary for Sea Trials has been satisfactorily completed.
 - (2) During Sea Trials the ship's CO will advise the TYCOM of major events accomplished and/or significant problems encountered/outstanding on a daily basis. Appendices F₁ or F₂ as applicable, of this chapter provide the desired format for this report.

3.6.8.1.1 Availability Work Certification and Completion Requirements (Surface Force Ship Only). Timely and technically correct planning and execution of availabilities demands a rigorous approach to certifying major Key Events leading to availability completion. A NSA certification plan verifies that work is completed and technically correct and must include Executing Activity qualifications, NSA approval of mandatory technical requirements, an integrated test plan and adequate NSA oversight of all availability work. These elements provide the NSA with maximum reasonable assurance that availability work is complete and technically correct. Executing Activity work completion starts with assurance that each Executing Activity has an approved and current Quality Management System. Each Executing Activity must provide certification of technically correct work completion and Objective Quality Evidence (OQE) as required in NAVSEA Standard Items or other technical requirements. NSA work oversight must include a minimum level of supervision to provide assurance that all mandatory technical requirements have been met and sufficient review of work specifications, integrated test plan, technical work documents, audit of work items, in-process surveillance (Planning Review (PR), Procedures Evaluation, Product Verification Inspection (PVI)) and review of OQE. The NSA shall utilize a risk-based availability QMP as discussed in Volume VII, Chapter 11 and Appendix R. NSA certification includes assurance that technical review/approval has been conducted on all OQE for work items requiring mandatory technical review. NSA certification includes technical review and approval of all waivers and deviations by the NSA CHENG. This includes assurance that any exceptions to completion have been approved as to not adversely impact Key Event completion.

3.6.8.1.2 Key Event/Milestone Readiness (Surface Force Ship Only). Minimum Key Events/Milestones that require certification and prerequisite lists to assure proper completion are listed below. These Key Events constitute the critical availability completion events for the crew to transition from the maintenance phase to an operational phase. Certification of required work and testing supporting each Key Event/Milestone shall be accomplished using a detailed prerequisite list. Appendix Q will be tailored for each Key Event/Milestone and be used to certify work required for each specific Key Event/Milestone. In addition to giving the NSA reasonable assurance that work accomplished is technically correct to support the specific Key Event/Milestone, certification of Key Events/Milestone assures that certification for Fast Cruise/Sea Trial is properly completed to certify the availability. The NSA will normally designate the LMA to develop and track an Event Readiness List utilizing NAVSEA Standard Items 009-60 and 009-67. The Event Readiness List will consist of all prerequisites including work items and actions to be completed by the NSA and all executing activities that have been associated with the Key Event/Milestone. These associations shall include technical connections (technically required to support follow-on training/testing) and strategic ties (work deemed relevant by the maintenance team as required to meet the Key Event). Appendix Q will be tailored to the Key Event and utilized by the NSA for Undocking, Propulsion Plant PCD/Combat Systems PCD, Dock Trials and work completion and certification by all maintenance activities. In lieu of Naval Message, a signed letter/memorandum or centrally managed exception list may be utilized to document completion of all prerequisites for the Key Event/Milestone. If there are exceptions to completion, exceptions will be clearly identified and concurred with by Technical Authority. The Project Manager, Ship's CO, TYCOM, Port Engineer and the NSA will sign the letter/memorandum or centrally managed list for the record noting agreement with Key Event/Milestone completion, including listed exceptions. When memoranda are used as an exception list, sample letters/memorandums (Appendix AD through AJ) shall be tailored to each Key Event and used to certify that work and testing is complete.

- a. Interim Completion Conferences. Milestone to document the availability completion percentage. For these Milestones, the maintenance team shall review and document work listed as complete and verify against OQE and proof of work certification. The emphasis for the maintenance team shall be to certify all work as soon as possible after completion. For any work listed as complete, there shall be follow-on status entries to document OQE on file and completion of Work Certification. If OQE and Work Certification have not been completed, there shall be follow-on status entries to document when it is scheduled to be performed.
- b. Undocking (If applicable). Key Event to document that the ship is ready in all aspects for Undocking. The NSA must certify all related work and testing is completed prior to commencing the ship's Undocking, with any exceptions noted and approved by the appropriate technical authority and agreed to in writing by the Ship's CO, Project Manager, TYCOM and the NSA.

- c. Propulsion Plant PCD. Key Event to document all production work supporting Propulsion Plant testing is complete. The NSA is responsible for thorough and rigorous management of this Key Event and minimizing exceptions. PCD is set to provide the Propulsion Plant and Main Machinery spaces sufficient time to allow the crew to shift from a maintenance environment back to operations and to train in preparation for LOA. The NSA must certify all related work and testing is completed for Propulsion Plant PCD, with any exceptions noted and approved by the appropriate technical authority and agreed to in writing by the Ship's CO, Project Manager, TYCOM and the NSA.
- d. Combat Systems PCD (AEGIS Light Off for AEGIS Ships). Key Event to document all production work supporting Combat Systems testing is complete. The NSA is responsible for thorough and rigorous management of this Key Event and keeping any exceptions to a minimum. PCD is set to provide the spaces sufficient time to allow the crew to shift from a maintenance environment back to operations and to train in preparation for required Readiness Assessments and Certifications. The NSA must certify all related work and testing is completed for Combat Systems PCD, with any exceptions noted and approved by the appropriate technical authority and agreed to in writing by the Ship's CO, Project Manager, TYCOM and the NSA.
- e. Dock Trials. Key Event ship trial conducted during an industrial activity availability to determine the ability of a ship's readiness for sea and capability to safely conduct Sea Trials. The NSA is responsible for conducting integrated dockside system testing, with special sea and anchor detail and general quarters manning to ensure system readiness for sea. The NSA must certify all required work and testing is completed prior to commencing Dock Trials, with any exceptions noted and approved by the appropriate technical authority and agreed to in writing by the Ship's CO, Project Manager, TYCOM and the NSA. The minimum requirements for Dock Trials are listed in Appendix I.
- f. Fast Cruise. Key Event ship trial conducted immediately prior to underway trials during which Ship's Force operates the ship for dockside training. The primary purpose of the Fast Cruise is to determine and certify the state of training of Ship's Company as adequate to conduct at-sea operations. The Ship's CO is responsible for conducting Fast Cruise, the final event prior to Sea Trials where the ship assumes an "at-sea" posture to exercise all equipment and systems to the maximum extent possible. The NSA must certify all required work and testing is completed prior to commencing Fast Cruise, with any exceptions noted and approved by the appropriate technical authority and agreed to in writing by the Ship's CO, Project Manager, TYCOM and the NSA. The minimum requirements for Fast Cruise are listed in Appendix J. Commencement of Fast Cruise requires TYCOM permission. Appendix AA provides a sample message format for ship's request for permission to commence Fast Cruise. Appendix AB provides a sample message format for ships to report Fast Cruise completion.
- g. Sea Trials. Key Event Sea Trial that constitutes the final determination of a ship's material readiness and ability to rejoin the Fleet as a fully operational unit. The Ship's CO is responsible for conducting Sea Trials in accordance with an agenda developed by the NSA, concurred on by the Ship's CO and approved by the ISIC. The NSA must certify all required work and testing is completed prior to commencing Sea Trials, with any exceptions noted and approved by the appropriate technical authority and agreed to in writing by the Ship's CO, Project Manager, TYCOM and the NSA. The minimum requirements for Sea Trials are listed in Appendix K. Commencement of Sea Trials requires TYCOM permission. The NSA must certify to the TYCOM that all work and testing is complete and readiness to start Sea Trials (with exceptions noted) via the Readiness for Sea Trials message. Appendix AC provides a sample message format for the Supervising Activity to report all work necessary for Sea Trials has been satisfactorily completed. Completion of Sea Trials requires a formal report from the Ship's CO to the TYCOM via the ISIC.
- h. Availability Completion. Key Event to document the Availability Completion. The NSA must certify all work and testing is complete, OQE is completely reviewed and is on file and all work has been properly certified to report Availability Completion, with any exceptions noted and approved by the appropriate technical authority and agreed to in writing by the Ship's CO, Project Manager, TYCOM and the NSA. The NSA shall report Availability Completion to the TYCOM via message upon the satisfactory completion of Sea Trials and the correction or resolution of mandatory deficiencies.

- i. End of Maintenance Phase. Milestone to document the end of the Maintenance Phase and entrance into the Basic Training Phase. The Maintenance Phase exit criteria for equipment shall include, but not be limited to: successful passing of Readiness Assessments and Certifications for non-Engineering systems (i.e. AEGIS Light-Off, Aviation Certification, TSRA, etc.), and a Light-Off Assessment for Engineering systems, and successful completion of comprehensive post-Availability Sea Trials that tests all systems. Minimum Equipment (Redlines) must be met and maintained for all Mission Areas.

3.6.8.1.3 Availability/Key Event/Milestone Certification Procedures (Surface Force Ship Only).

- a. The procedures outlined in the following sections provide the minimum requirements to (RMCs/NSA) to utilize during execution of CNO Availabilities and major Continuous Maintenance Availabilities (as directed by the Fleet or TYCOM) for Availability Certification and Key Event/Milestone Management. This process is developed to provide the RMC Commander, via the RMC Project Manager and RMC CHENG, the maximum reasonable assurance that all availability work has been properly completed and that the ship is materially ready for the next Key Event or Sea Trial. This process provides assurance that all technical waivers/deviations have been reviewed and approved, any work exceptions (incomplete work) have been approved to not impact the Key Event/Sea Trials and work was planned, executed and tested technically correct.
- b. The following process defines the steps to be taken by the NSA and all Executing Activities when certifying work to support readiness for Key Event/Milestone. When Key Events/Milestones are accomplished sequentially and in conjunction with a tailored availability QMP, (Appendix R), this process will support incremental certification of Readiness for Fast Cruise/Sea Trials and Availability Completion and avoid late gathering of data and certifications to ensure readiness for Fast Cruise/Sea Trials. Certification may be tracked via a centralized signature sheet and central exceptions list or through each Executing Activity providing memoranda documenting work certification and exceptions. When memoranda are used, the Appendix Q signature sheet and Appendix AD through AJ certification letters/memorandums shall be collected in an Availability Certification Book maintained by the Project Support Engineer on the Project Team. Normally, the Project Support Engineer works closely with the Integrated Test Engineer to manage the availability certification process for the Project Manager. The paragraphs below describe minimum requirements associated with each action leading to certification.

3.6.8.1.4 Availability Certification Requirements and Procedures (Surface Force Ship Only).

- a. Work Authorization. This step is required for Fast Cruise/Sea Trial Certification and Availability Completion Certification, but is not normally required for Key Event/Milestone Certification. TYCOM work authorization is screened and brokered by availability vice by availability Key Event. TYCOM certification of work authorization may be completed prior to Fast Cruise/Sea Trial and does not need to be repeated prior to availability completion unless new/growth work is identified during Sea Trials which is required to be added to the AWP as a condition of availability completion.
 - (1) The TYCOM's agent (Port Engineer) or Business Agent SRF-Japan Regional Maintenance Center (JRMC) will certify that all authorized CNO Availability or Continuous Maintenance Availability work identified in the AWP has been tasked to the Prime Contractor (Multi-Ship Multi-Option or Firm Fixed Price), Naval Shipyard (NSY), FMA, Alteration Installation Team (AIT) or Ship's Force.
 - (2) The TYCOM's agent (Port Engineer) or Business Agent (SRF-JRMC) will certify that all work identified after work package definition (new/growth work) has been branded and authorized for accomplishment or deferred. If work branded as "A" or technically mandated as required to be deferred, it must be concurred on by the waterfront Technical Warrant Holder (NSA CHENG).
 - (3) The TYCOM's agent (Port Engineer) or Business Agent (SRF-JRMC) will certify that a review has been accomplished on all existing deviations, waivers, and records of out-of-commission equipment. This review shall include all conditions resulting in Temporary Standing Orders (TSO), DFSs and Casualty Reports (CASREP). Deviations have either been included in the AWP or an extension of the technical deviation has been submitted to the NSA

- CHENG for approval and concurred on by the TYCOM. If the condition resulting in a TSO or CASREP does not require technical concurrence for extension, the TYCOM must concur with not correcting the condition that resulted in the TSO or CASREP.
- (4) Prior to Fast Cruise/Sea Trial, the TYCOM will certify to the NSA via signature on central signature sheet or serialized letter/memorandum that the above conditions have been met. Exceptions will be noted and provided for approval by the NSA.
 - (5) The NSA/RMC certification signature will be provided by the Project Manager with the TYCOM signature or letter/memorandum and serial number noted, verifying receipt of TYCOM certification or proper work authorization accomplished.
- b. Work Documents Issued/Prime Contractor (KTR). (This step shall be completed by Key Event/Milestone for work tied to each Key Event/Milestone.)
- (1) Code 200 & 130 Review of Work Specifications and Test Procedures. The RMC/NSA Code 200 Project Support Engineer or Test Engineering (SRF-JRMC) and RMC/NSA Code 130 Quality Assurance Supervisor (QAS) will validate that Work Specifications and Test Procedures issued by the Master Ship Repair Contractor have received a technical review in accordance with RMC attributes checklist. At a minimum, work specifications will receive technical review in accordance with approved Availability QMP requirements and as outlined in Volume VII, Chapter 11, paragraph 11.2.3 of this manual.
 - (2) Code 300 Review of Work Specifications and Test Procedures. The RMC/NSA Project Manager shall validate that all work specifications and test procedures issued by the prime contractor have received a government review for compliance with contractual requirements in accordance with Volume VII, Chapter 4, Appendix E of this manual and approved in **the appropriate maintenance database**.
 - (3) Contractor Furnished Reports (CFR). The RMC/NSA Project Manager will verify that all required CFRs have been received as required by NAVSEA Standard Item 009-01, paragraph 3.2.
 - (4) CFRs. The RMC/NSA Project Support Engineer will verify that all CFRs requiring Code 200 action have been reviewed and answered, all deferred maintenance action and/or test result CFRs have been technically adjudicated, and all CFRs screened to Code 200 for action have been documented via Engineering Service Request (ESR).
- c. Key Event/Availability Completion/Prime KTR. (This step shall be completed by Key Event/Milestone for work tied to each Key Event/Milestone.) The Prime KTR will provide to the NSA a signed letter/memorandum (Appendix AD) or sign a centrally managed list certifying all authorized work is completed satisfactorily, with any exceptions noted. Exceptions must be itemized and technically approved by the RMC/NSA CHENG as to not impact Key Event/Milestone completion or Readiness for Sea Trials. Exceptions must include a plan for accomplishment. Testing scheduled to be conducted on Sea Trials does not need to be itemized on this letter/memorandum or centrally managed list, but can be referred to as “except testing included on Sea Trials agenda.” Signature of the centrally managed signature sheet or a letter/memorandum will be received prior to Key Event/Sea Trials. The RMC/NSA Project Manager will sign the signature sheet acknowledging receipt of letter/memorandum and noting serial number or signed list as noted above.
- d. Key Event/Availability Completion/FMA (I-Level). (This step shall be completed by Key Event/Milestone for work tied to each Key Event/Milestone.) The FMA/RMC Code 900 will provide to the NSA assigned letter/memorandum (Appendix AE) or sign a centrally managed list certifying that all Formal Work **Packages**/Controlled Work Packages (FWP/CWP) and test procedures planned and accomplished by the FMA are technically correct and completed. Exceptions will be noted and

technically approved by the RMC/NSA CHENG as to not impact Key Event/Milestone completion or Readiness for Sea Trials. Exceptions must include a plan for accomplishment. Testing scheduled to be conducted on Sea Trials does not need to be itemized on this letter/memorandum or centrally managed list, but can be referred to as “except testing included on Sea Trials agenda.” The RMC/NSA Project Manager will sign the signature sheet acknowledging receipt of letter/memorandum and noting serial number or signed list as noted above.

- e. Key Event/Availability Completion/NSY. (This step shall be completed by Key Event/Milestone for work tied to each Key Event/Milestone.) The NSY Project Superintendent will provide to the NSA a signed letter/memorandum (Appendix AF) or sign a centrally managed list certifying that all TWDs and test procedures planned and accomplished by the NSY are technically correct and completed. Exceptions will be noted and technically approved by the RMC/NSA CHENG as to not impact Key Event/Milestone completion or Readiness for Sea Trials. Exceptions must include a plan for accomplishment. Testing scheduled to be conducted on Sea Trials does not need to be itemized on this letter/memorandum or centrally managed list, but can be referred to as “except testing included on Sea Trials agenda.” The RMC/NSA Project Manager will sign the signature sheet acknowledging receipt of letter/memorandum and noting serial number or signed list as noted above.
- f. Key Event/Availability Completion/AIT. (This step shall be completed by Key Event/Milestone for work tied to each Key Event/Milestone.) Each AIT On-Site Installation Coordinator will provide to the NSA a signed letter/memorandum (Appendix AG) or sign a centrally managed list certifying that respective AIT work and test procedures are technically correct and complete, with exceptions noted. Exceptions must be itemized and technically approved by the RMC/NSA CHENG as to not impact Key Event/Milestone completion or Readiness for Sea Trials. Exceptions must include a plan for accomplishment. Testing scheduled to be conducted on Sea Trials does not need to be itemized on this letter/memorandum or centrally managed list, but can be referred to as “except testing included on Sea Trials agenda”. Signature of the centrally managed signature sheet or a letter/memorandum will be received prior to Key Event/Milestone. The Project Manager or AIT Manager (if assigned) will sign the signature sheet acknowledging receipt of letter/memorandum and noting serial number or signed list as noted above.
- g. Key Event/Availability Completion/Ship’s Force (SF). (This step shall be completed by Key Event/Milestone for work tied to each Key Event/Milestone.) Ship’s Force CO will submit to the NSA a signed letter/memorandum (Appendix AH) or sign a centrally managed list certifying all Ship’s Force FWPs and CWPs are technically correct and complete to support Key Event/Milestone completion or readiness for Fast Cruise/Sea Trials. At a minimum, this certification shall include a review of:
 - (1) Ship’s Force Work Package derived from the CSMP.
 - (2) Inactive Equipment Maintenance is properly performed.
 - (3) TSO review.
 - (4) PMS review, including all checks to remove equipment/systems from IEM.
 - (5) Pre-underway or Pre-Event check-off list checks are complete.
 - (6) The RMC/NSA Project Manager will sign the signature sheet acknowledging receipt of Ship’s Force CO letter/memorandum and noting serial number or signed list as noted above.
- h. Key Event/Availability Completion/RMC Engineering. (This step shall be completed by Key Event/Milestone for work tied to each Key Event/Milestone.)
 - (1) RMC/NSA CHENG to certify that all work assigned has been tasked and properly executed prior to Fast Cruise/Sea Trials and at the end of an availability where RMC is the NSA. This process also ensures that there are no outstanding technical waivers/deviations or QA deficiencies that have not been properly adjudicated and identifies any exceptions to completion, including work or testing that will occur after Sea Trials completes and assures these work items have been technically adjudicated to prevent adverse impact on availability completion.

The submarine involved shall submit the Sea Trial Agenda to the ISIC for approval, with an information copy to the TYCOM. Extensions or reductions of the Sea Trial period may be granted where warranted by the scope of the work accomplished. Where extension of the Sea Trial period 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 will be satisfactorily resolved prior to the 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.

- a. EMBT Blow: An EMBT blow is required for each Sea Trial following an industrial activity availability, availability docking, or availability of less than six months duration. EMBT blow shall be conducted in accordance with the applicable URO MRC and does **not** require an escort for EMBT blow at depths of 400 feet or less.
- b. Assignment of Escort Ship.
 - (1) In accordance with reference (aa), a surface escort shall be provided during deep dive submergence trials for ships completing an availability for repair of collision/grounding damage where deformation is observed to be in the hull integrity envelope and/or supporting structure.
 - (2) In accordance with reference (aa), the requirement for providing an escort during deep dive submergence trials upon completion of all other availabilities will be evaluated by Commander, NAVSEA on a case basis. Commander, NAVSEA will advise the applicable Submarine Force Commander in writing whether or **not** an escort will be required based on the scope of work in the availability. In general, an industrial activity availability of less than six months duration should **not** require an escort, since the work typically performed in these availabilities is limited in scope, is carefully controlled and, therefore, does not result in substantial risk of unidentified or incomplete work adversely affecting the SUBSAFE boundary.
 - (3) Escort requirements should be determined early so that an escort satisfying the requirements of paragraph 3.6.8.4.7.b.(6) of this chapter can be scheduled if required. The TYCOM will in turn request services from the Fleet Commander as applicable. As a general rule, pressure hull work which could not affect hull circularity will not require an escort.
 - (4) 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 Commander, NAVSEA for approval. An escort waiver request message is to include all of the following specific statements, as applicable:
 - (a) 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.
 - (b) The hull cut weld satisfactorily passed RT and 7 day MT non-destructive tests.
 - (c) Post repair frame circularity check readings are within specifications.
- c. Assignment of SRDRS During Submarine Sea Trials.
 - (1) A SRDRS will be placed in a modified alert status at the beginning of Sea Trials requiring an escort following an industrial availability or major maintenance availability for:
 - (a) Ships 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 judgment, a Sea Trial requires an escort due to major hull cuts.

- (2) A modified alert message will be sent by the industrial activity with the required SRDRS support dates 6 weeks prior to the requested date. Any changes in this request date will require immediate notification to the Fleet commander, Commander Naval Sea Systems Command (COMNAVSEASYSCOM) and Commander, Submarine Squadron (COMSUBRON) ELEVEN. Sample messages in Appendices BN and CQ of this chapter.
- (3) The ship conducting Sea Trials will notify COMSUBRON ELEVEN and COMNAVSEASYSCOM when SRDRS services are no longer required due to completion of the events in paragraph 3.6.8.3.9.c.(1) of this chapter or due to delay in completing Sea Trials.
- (4) The SRDRS is not required to be placed in a modified alert status for those Sea Trials requiring an escort solely for the accomplishment of an EMBT blow from depths greater than 400 feet.

3.6.8.3.10 Interrupted Sea Trials. In the event a Sea Trial is interrupted, or an additional Sea Trial becomes necessary, the following requirements are to be met. These requirements shall be invoked if the ship returns to port for industrial activity repairs which affect SUBSAFE certification or which will require at-sea testing.

- a. The industrial activity will draft a revised Sea Trials agenda to support resumption of the trials. This agenda shall be provided to the ISIC for concurrence and TYCOM for information.
- b. The Ship will report by message (format of Appendix BE of this chapter) that Ship's Force is ready for follow-on sea trials.
- c. The ISIC shall report by message (format of Appendix BF of this chapter) to the TYCOM that the material condition of those SUBSAFE Certification boundaries that were installed, repaired and/or tested by Ship's Force is satisfactory for resuming Sea Trials.
- d. Upon completion of all of the requirements in paragraphs 3.6.8.3.10 a. and b. above, the TYCOM will provide a message (Appendix BG of this chapter) to the ISIC granting permission to proceed with the conduct of Sea Trials and authorize the ship to dive to the Sea Trial operating depth.
- e. The industrial activity will identify by message to COMNAVSEASYSCOM and COMSUBRON ELEVEN any additional SRDRS requirements to support the interrupted trials. Sample message in Appendices BN and CQ of this chapter.
- f. Submarine surface transits from industrial port in advance of completion of CNO availabilities (prior to certification for unrestricted operations) to a different or homeport can be executed without a sea trial, without an escort and without an SRDRS after obtaining NAVSEA concurrence and authorization from the TYCOM. The submarine shall not be authorized to dive and no testing is permitted during the transit. Operational need for transit and mitigating actions, if applicable, shall be determined by the TYCOM.

3.6.8.3.11 Availability Completion Prerequisites. Upon completion of Sea Trials and correction/resolution of deficiencies, the following requirements must be met prior to completion of an industrial availability less than six months duration:

- a. The Supervising Authority shall report by message (format similar to reference (t), Appendix B.3.8) to the TYCOM, satisfactory completion of all Sea Trials, completion of controlled dives, correction of all mandatory and Sea Trial deficiencies. Report that the SUBSAFE material condition of the ship installed, repaired, and/or tested by the industrial activity is satisfactory for URO to test depth. Identify any deferred SUBSAFE work and/or conditionally approved deviations and waivers.
- b. Following verification from the ship Commanding Officer and the Supervising Authority of satisfactory completion of all Sea Trials, completion of controlled dives, correction of all mandatory Sea Trial deficiencies, certification that the SUBSAFE material condition of those parts of the ship installed, repaired, and/or tested by the industrial activity is satisfactory, and upon confirmation of maintenance of SUBSAFE certification of portions of ship not affected by the industrial activity, the TYCOM shall report by message (Appendix BO of this chapter) to the ship, with copies to CNO and NAVSEA, reporting status of SUBSAFE certification and authorizing URO to test depth.

- f. Upon completion of all of the requirements in paragraphs 3.6.8.4.8.a. through e above, the TYCOM will provide a message (Appendix CO of this chapter) to the ship granting permission to proceed with the conduct of Sea Trials and authorize the ship to dive to the Sea Trial operating depth recommended by NAVSEA.
- g. Submarine surface transits from industrial port in advance of completion of CNO availabilities (prior to certification for unrestricted operations) to a different or homeport can be executed without a sea trial, without an escort and without an SRDRS after obtaining NAVSEA concurrence and authorization from the TYCOM. The submarine shall not be authorized to dive and no testing is permitted during the transit. Operational need for transit and mitigating actions, if applicable, shall be determined by the TYCOM.

3.6.8.4.9 Availability Completion Prerequisites. Upon completion of Sea Trials and correction/resolution of deficiencies, the following requirements must be met prior to completion of an industrial availability greater than six months duration. These requirements will be reiterated in the TYCOM "Countdown Message" Appendix CD or CL of this chapter:

- a. The Supervising Authority shall report by message (reference (t), Appendix B.3.8) to NAVSEA, satisfactory completion of all Sea Trials, completion of controlled dives, correction of all mandatory sea trial deficiencies, and resolution of all NAVSEA SSCA Category IA recommendations. Report that the SUBSAFE material condition of the ship installed, repaired, and/or tested by the industrial activity is satisfactory for URO to test depth. Identify any deferred SUBSAFE work and/or conditionally approved deviations and waivers.
- b. Following verification from the Supervising Authority of satisfactory completion of all Sea Trials, completion of controlled dives, correction of all mandatory Sea Trial deficiencies, and resolution of all NAVSEA SSCA Category IA recommendations, NAVSEA shall certify by message (reference (t) Appendix B.3.9) to the TYCOM, with information copies to CNO and the appropriate Fleet Commander, the SUBSAFE material condition of those parts of the ship installed, repaired, and/or tested by the industrial activity is satisfactory, and recommend authorization for URO to design test depth subject to TYCOM verification that SUBSAFE certification of areas outside the industrial activity AWP has been sustained.
- c. Following verification from NAVSEA of satisfactory completion of all sea trials, completion of controlled dives, correction of all mandatory sea trial deficiencies, certification that the SUBSAFE material condition of those parts of the ship installed, repaired, and/or tested by the industrial activity is satisfactory, and upon confirmation of maintenance of SUBSAFE certification of portions of ship not affected by the industrial activity, the TYCOM shall report by message (Appendix CG of this chapter) to the ship, with copies to CNO and NAVSEA, reporting status of SUBSAFE certification and authorizing URO to test depth.

3.7 COMPLETION OF AVAILABILITY.

- a. (Surface Force Ships/Aircraft Carriers) In order to standardize reporting practices, the official end of a CNO Availability will be upon Certification of work in accordance with "Availability Work Certification" dictated in this chapter and completion of the TYCOM approved Sea Trials Agenda. Ships shall report Sea Trial Agenda Completion in the form of Appendix F1 or Appendix F2 of this chapter. Availability Certification Completion can occur with agreed to exceptions as discussed in Volume VII, Chapters 7 and 8 of this manual. The TYCOM, Contractor, FMA and NSA should consider Work Certification Requirements and the definition of "Availability Completion" when adjudicating New or Growth work in any availability. If scope, time and cost are impacted by New or Growth work, the impact should be addressed and documented in writing (by the RMC Project Manager) to the TYCOM/ISIC.
- b. (Submarines only) CNO availabilities are complete when the TYCOM transmits one of the two following messages:

- (1) Appendix BO of this chapter. (SAMPLE TYCOM MESSAGE TO SHIP CONCERNING URO FOR INDUSTRIAL ACTIVITY AVAILABILITIES LESS THAN SIX MONTHS IN DURATION (SUBMARINES ONLY)).
- (2) Appendix CG of this chapter. (SAMPLE TYCOM MESSAGE TO SHIP CONCERNING URO FOR INDUSTRIAL ACTIVITY AVAILABILITIES GREATER THAN SIX MONTHS IN DURATION (SUBMARINES ONLY)).

3.8 AVAILABILITY COMPLETION DEPARTURE CONFERENCE.

3.8.1 Departure Conference and Availability Completion Message. At the end of the availability, the Supervising Authority, FMA (if applicable), and Ship's Force will conduct a Departure Conference to finalize the status of all work performed during the availability. The conduct of this conference is similar to that of the Progress Reviews conducted in accordance with paragraph 3.6.3.1.b. of this chapter, and should be used to gather all necessary information to draft and send the Availability Completion Message. Further policy on availability completion can be found in Volume VII, Chapter 7, paragraph 7.12 and Chapter 8, paragraph 8.5 of this manual. As a minimum, the Availability Completion Message should address all areas addressed in the Weekly Progress Message, Appendices F1 or F2 of this chapter as applicable, as well as the following:

- a. Unresolved maintenance issues and guarantee work items.
- b. Report of configuration changes resulting from alterations installed during the availability.
- c. Summarize the NAVSEA waivers issued during the availability.
- d. Identify those work candidates that will be deferred until the next industrial availability.

3.9 POST AVAILABILITY.

3.9.1 Completed Availability Work Package. Within six months after the completion of the availability, SUBMEPP (Submarines)/PMS 312C (Aircraft Carriers)/applicable TYCOM (all other Surface Ships) will issue the Completed Work Package.

3.9.2 End-of-Cycle Analysis (Surface Force Ships Only). Provide inputs to support the SURFMEPP End-of-Cycle Analysis. These inputs will include DFSs approved during the availability and work that was accomplished, but not in the approved AWP.

3.9.2.1 Post-Availability Analysis (Surface Force Ships Only). TYCOM will participate in the post-availability analysis process, attend CNO Availability completion Maintenance and Modernization Performance Reviews in accordance with Volume VI, Chapter 44 of this manual and provide post-availability lessons learned to SURFMEPP.

3.10 BASELINE AVAILABILITY WORK PACKAGE CLOSE-OUT (Surface Force Ships Only).

3.10.1 Fleet Readiness Plan Maintenance Cycle BAWP Close-Out. The following procedures will be utilized to close-out and complete the FRP Maintenance Cycle and associated BAWP.

3.10.2 BAWP Close-Out Verification and Assessment Meeting. No later than 45 days after CNO Availability completion, SURFMEPP will conduct a BAWP Close-Out Verification and Assessment Meeting. This meeting will determine the status of all "A" branded BAWP items. A list of all BAWP work items that were not accomplished and the reason(s) for non-accomplishment will be compiled for inclusion in the BAWP Close-Out Report.

3.10.2.1 Attendees. The BAWP Close-Out Verification and Assessment Meeting will be chaired by a SURFMEPP representative. The following personnel are encouraged to attend this meeting:

- a. Ship's CO (or designated representative).
- b. Engineer Officer and Availability Coordinator.
- c. Project Engineer and Combat Systems Project Engineer.
- d. Project Manager and/or Class Team Lead.
- e. Multi-Ship Multi-Option/LMA/Planning Activity Representative.

- f. TYCOM Representative.
- g. ISIC Representative.
- h. Planning Yard Representative.
- i. Program Manager's Representative.
- j. Navy Regional Maintenance Center Representative.
- k. NRMCA Assessment Director.
- l. NAVSEA 05D Representative.

3.10.2.2 Agenda. The following agenda will be used for reviewing, assessing and closing out the BAWP. Additional agenda items may be added at the discretion of the TYCOM, ISIC, Planning Activity or ship. Attendees will be prepared to address their respective portions of the agenda.

- a. Identify "A" branded BAWP requirements completed during the FRP maintenance cycle.
- b. Identify "A" branded BAWP requirements affected by de-scoping.
- c. Identify and reschedule work not deferred from the BAWP and not fully accomplished during the FRP Maintenance Cycle.
- d. Establish the basic requirements for the next FRP Maintenance Cycle.
- e. Review the status of outstanding DFSs.
- f. Assess the quality of BAWP and AWP documents and provide recommendations for improvement.

3.10.2.3 BAWP Close-Out Report. This report will detail all non-accomplished "A" branded BAWP items and their deferral status as well as all BAWP Job Control Numbers that were not scheduled but completed. Requested action items will be annotated on the report and on the individual work candidates not accomplished. This report will be submitted to COMNAVSURFLANT/COMNAVSURFPAC N43 and the local TYCOM representatives with copies to NAVSEA 05D, NAVSEA 21, Multi-Ship Multi-Option Contractor (or Planning Activity) and the ship's Maintenance Team.

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APPENDIX B
TYPICAL CNO AVAILABILITY PLANNING MILESTONES
(SURFACE FORCE SHIPS ONLY)

- * 1 - Both Naval and Private Industrial Activities
 2 - Private Industrial Activities only
 3 - Naval Activities

MILESTONES	*CODE	RESPONSIBLE ACTIVITY	TIMELINE (Days)
1. Review CSMP and make sure that all ship deferred maintenance actions desired for accomplishment are documented.	1	Maintenance Team (MT)	Continuous
2. Review SURFMEPP PRE-BAWP.	3	MT	C+120 (after last CNO avail completion)
3. Life Cycle Planning Conference (LCPC) Meeting.	1	SURFMEPP	C+130 (after last CNO avail completion)
4. Upload BAWP tasks to ship's CSMP.	3	SURFMEPP	C+140 (after last CNO avail completion)
5. Review SURFMEPP Planning Schedule Letter for action items.	3	SURFMEPP	C+140 (after last CNO avail completion)
6. Review FMPMIS and prepare recommended list of Title "D" and "F" SHIPALTs for the TYCOM.	1	TYCOM	A-548 to A-487
7. 50 percent of BAWP is screened to maintenance availabilities.	1	MT/RMC	A-470
8. Participate in SURFMEPP CSMP/DFS/BAWP Review.	1	SURFMEPP/RMC/TYCOM	A-410
9. Ensure 100 percent of BAWP is screened to maintenance availabilities.	1	MT	A-410
10. Issue Letter of Authorization (including AITs).	1	Ship's Program Manager/TYCOM	A-360
11. Issue Title "K" SHIPALT advance planning letter.	1	NAVSEA	A-360
12. Integrated Planning Conference (Issue AWP).	1	TYCOM/MT	A-360

MILESTONES	*CODE	RESPONSIBLE ACTIVITY	TIMELINE (Days)
13. Design shipcheck before development of Ship Installation Drawings.	1	Design Agent	A-425 to A-360
14. Advance planning briefing.	1	TYCOM	A-425 to A-360
15. Pre-Availability Test and Inspection or Work Package Definition Conference, including combat systems and inspection of boilers (if possible).	1	TYCOM/Industrial Activity/MT	A-360 to A-304
16. Pre-Availability Test and Inspections or WDC completion meeting.	1	TYCOM/MT/Industrial Activity	A-360 to A-304
17. Issue Pre-Availability Test and Inspections or Work Package Definition Conference Meeting report (within 10 days after conference).	1	TYCOM/Industrial Activity	A-334 to A-274
18. Attend TYCOM A-240 Advanced Planning Conference.	1	MT	A-240
19. 50 percent of D-Level maintenance locked based on funding.	3	MT	A-240
20. Submit A-240 Deferral Letter with Maintenance Team Assistance.	1	TYCOM	A-240
21. Initiate Ship's Force material planning and procurement.	1	Ship	A-213
22. Issue Post-WDC report.	3	TYCOM	A-245 to A-135
23. Initiate discussions with Naval Research Laboratory (NRL) to determine potential NRL projects.	1	RMC/NRL	A-180
24. Issue list of work items screened for Forces Afloat accomplishment.	1	TYCOM	A-150 to A-110
25. Complete Bid Specifications.	1	RMC	A-135 to A-110
26. Review Bid Specifications for errors, omissions, duplications (may require conference to resolve).	1	TYCOM/RMC/MT	A-135 to A-110
27. 80 percent of D-Level maintenance work package locked based on funding.	3	MT	A-120
28. 100 percent of O-Level maintenance work package locked.	3	MT	A-120
29. Work Package Integration Conference.	1	RMC	A-120

MILESTONES	*CODE	RESPONSIBLE ACTIVITY	TIMELINE (Days)
30. Finalize/lock NRL projects.	1	NRL	A-120
31. Submit A-120 Deferral Letter with Maintenance Team Assist.	3	TYCOM	A-120
32. Develop General Purpose Electronic Test Equipment management program.	1	Ship	A-110 to A-30
33. Order material for Ship's Force work.	1	Ship	A-90 to A-45
34. 100 percent of D-Level maintenance work package locked based on funding.	3	MT	A-75
35. Issue solicitation for bids or proposals to contractors.	3	RMC	N/A
36. Award Contract.	3	RMC	N/A
37. Develop Off-Load Plan for arrival at industrial activity (including off-load assistance, security and storage arrangements).	1	Ship	A-60 to A-10
38. Review SSRs for changes required as a result of authorized work. Turn over items (including changes previously accomplished) to Planning industrial activity.	1	Ship/Planning Yard	A-90 to A-45
39. Ship representative visit industrial activity for preliminary off-ship berthing and storage inspection.	1	Ship/Industrial Activity	A-30 to A
40. Definitize Work Package.	3	RMC	A-35
41. Work Package Execution Review (WPER).	2	MT	A-30
42. Phase II Pre-availability Tests and Inspections, Boiler Start of Availability Inspection (as applicable).	1	Ship/TYCOM/Naval Surface Warfare Center (NSWC)/ Industrial Activity	A-60 to A
43. Off-load ammunition and fuel as required (TYCOM approval required). Also off-load hazardous material and oily waste.	1	Ship	A-30 to A-1
44. Start availability, start ILO, start Combat System Technical Training.	1	Ship/Industrial Activity	A
45. Send start message to Fleet Commander.	1	TYCOM	A
46. Arrival Conference.	1	Industrial Activity/ISIC/Ship	A to A+3

MILESTONES	*CODE	RESPONSIBLE ACTIVITY	TIMELINE (Days)
47. Cancel all outstanding Casualty Reports (CASREP) which are scheduled to be corrected during the industrial availability.	1	Ship	A to A+3
48. Execute MOA with Industrial Activity.	1	Ship/Industrial Activity	A to A+7
49. Submit Weekly Progress Reports.	1	Ship	A to C
50. 25 percent, 50 percent 75 percent point review conferences.	1	Ship/ TYCOM/Industrial Activity	A to C
51. Start crew training in preparation for Initial LOA.	1	Ship/ISIC	C-120
52. Start Combat System Level Testing.	1	Ship/Industrial Activity	C-90
53. Prepare Dock Trial, Fast Cruise, and Sea Trial agendas.	1	Ship	C-45
54. Post-Repair Boiler Inspection.	1	TYCOM/ Ship/NSWC	C-45
55. LOA.	1	ATG/ISIC/Ship	C-40
56. Start crew training in preparation for Sea Trials.	1	Ship	C-40
57. Send Sea Trials Discrepancy Report.	1	Ship	Completion of Sea Trials
58. Visual National Policy for the Control of Compromising Emanations (TEMPEST) Inspection (with Configuration Control Diagram).	1	Industrial Activity	C-10
59. Completion Review Conference.	1	Industrial Activity/Ship/ TYCOM/ISIC	C-5
60. Send Completion Message to Fleet Commander.	1	TYCOM	C
61. CSMP Update. Report completion of all SHIPALTs, Field Changes, Ordnance Alterations (ORDALTs).	1	Ship	C
62. Send letter report of any unsatisfactory work (photographs and later updates may also be sent).	1	Ship	C+10
63. Combat System Post-Overhaul Exam. (If required).	1	Ship/ISIC	C+15
64. Attend SURFMEPP BAWP Close-Out Meeting.	3	MT/RMC/TYCOM	C+45
65. Submit Final BAWP Close-Out Report.	3	SURFMEPP	C+90

MILESTONES	*CODE	RESPONSIBLE ACTIVITY	TIMELINE (Days)
66. End of guarantee period for work performed by Industrial Activity. All unsatisfactory work must be reported by this date to be corrected by industrial activity. Deficiencies discovered later should also be reported.	1	Ship	C+90
67. Complete SSR update.	1	Planning Yard	C+90
68. Issue Completed AWP.	1	TYCOM	C+180

NOTE: "A" AND "C" IN THE "TIMELINE" COLUMN REPRESENT THE START AND COMPLETION DATES, RESPECTIVELY. THE DATES SHOWN ARE FOR ILLUSTRATION ONLY, SINCE ACTUAL MILESTONES VARY DEPENDING ON SHIP OPERATING SCHEDULES, START DATE CHANGES, AND OTHER CONSIDERATIONS.

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APPENDIX D

**SUGGESTED GUIDELINES FOR FORCES AFLOAT
REVIEW OF AVAILABILITY WORK PACKAGES**

a. The preliminary AWP includes information which SUBMEPP (Submarines)/PMS 312C (Aircraft Carriers)/applicable TYCOM (Surface Force Ships)/Ashore Ships Maintenance Manager extracts from the CSMP prior to the availability. SUBMEPP/PMS 312C/TYCOM (as applicable) and Ashore Ships Maintenance Manager only reviews items in the CSMP which are coded 1 under the type availability column. SUBMEPP/PMS 312C/TYCOM (as applicable) and Ashore Ships Maintenance Manager continues to monitor the CSMP until submission of the first Supplementary Work List. It is essential that the CSMP be up-to-date and reflect what work the ship requires the industrial activity to accomplish. The CSMP is the primary means of communicating unique work items not already covered by the AWP until submission of the first Supplementary Work List.

b. Ship's Force should review each maintenance item on the CSMP deferred for accomplishment to ensure that the deficiency reported and the work involved to correct it are complete and accurate.

c. To the maximum extent possible, work items that are within the capability of an FMA to accomplish should be accomplished as T/A-2 work prior to the CNO Maintenance Availability.

d. Ship's Force will identify CSMP repair items previously deferred for other than industrial activity action which Forces Afloat will not likely accomplish prior to the availability and change the type availability code to T/A-1, with ISIC concurrence, on these items.

e. Ship's Force will review each outstanding alteration for applicability and ensure that the record of completed alterations is correct. Alterations erroneously reported complete result in plans and tests which do not fit the ship. Completed alterations not reported as complete will cause unnecessary expenditure of shipcheck funds and/or duplication of effort during the availability.

f. During AWP review meetings, Ship's Force should mark up both the index and applicable SWLIN as an aid in recalling information.

g. Ship's Force will review the AWP to see if any component/equipment requiring attention of any kind has been omitted. Note that the Advanced Equipment Repair Program and TRIDENT Planned Equipment Replacement (TRIPER) Program (SSBN/SSGN 726 Class), SEAWOLF Rotatable Pool Program and Aircraft Carrier Planned Equipment Replacement Program replace many components with refurbished units. Repair work on components that will be replaced by AERP can be canceled or noted as covered by the replacement SWLIN.

h. On receipt of the Proposed AWP, Ship's Force should review each Ship System Work Description. Ship's Force should prepare comments as to whether the extent of planned restoration, maintenance or repairs is sufficient or excessive. Additional comments regarding abnormal operation or configuration will be of interest to the industrial activity even if the AWP covers the particular component for repair because the scope of the job can be exactly defined early, avoiding "growth within scope" and schedule slippage later in the availability.

i. Ship's Force should review the General Information Section, "zero" series SWLINs and the glossary for a definition of terms used in the AWP to obtain a general understanding of availability procedures, philosophy and the pre-availability planning requirements.

j. Ship's Force should review all outstanding Departures from Specification to ensure they identify, for correction during the availability, all known non-standard repairs or installations not in accordance with class plans.

k. Ship's Force should identify any recently completed repair actions on components assigned to industrial activities and alterations that may negate the need for, or reduce the extent of, industrial activity refurbishment.

l. Ship's Force should identify any equipment not presently addressed in the AWP. SUBMEPP/PMS 312C/TYCOM (as applicable) and Ashore Ships Maintenance Manager are interested in identifying special or temporary equipment installations which may need maintenance during the availability.

m. Ship's Force should identify any equipment listed for restoration, that is in exceptionally good material condition.

n. Ship's Force should review, "Forces Afloat Actions to be Accomplished Prior To or At Arrival" index in the AWP to ensure these actions are understood.

o. (Submarines only) Ship's Force should review the AWP Part 4.14 NAVSEA 07T/PMT Actions (Non-Nuclear) to ensure SF/PMT actions are completed when required.

APPENDIX F₂
SITREP/PROGRESS REPORT
(Surface Force Ships Only)

FM USS (SHIP NAME)//
 TO (APPLICABLE TYCOM)//
 INFO (APPLICABLE FLEET COMMANDER)//
 COMNAVSEASYSKOM//
 COMNAVAIRSYSKOM (AS APPLICABLE)//
 ISIC (IF APPLICABLE)//
 SUPERVISING AUTHORITY//
 Local RSG/RMC (IF APPLICABLE)//
 FMA//
 PEO THEATER SURFACE COMBATANTS (AS APPLICABLE FOR COMBATANTS)//
 PEO EXW (AS APPLICABLE FOR AUXILIARIES, LITTORALS AND PATROL CRAFT)//
 PEO MUW (AS APPLICABLE FOR MINE WARFARE)//
 NRMK//
 SURFMEPP PORTSMOUTH VA//
 (OTHER UNITS IN AREA IF APPLICABLE)//
 (OTHER UNITS OF CLASS IF APPLICABLE)//
 BT
 UNCLAS //N04790//
 MSGID/GENADMIN/USS _____//
 SUBJ/(TYPE AVAILABILITY) SITREP (SEQUENTIAL NUMBER)//
 REF/A/DOC/COMUSFLTFORCOM/(DATE)//
 AMPN/REF A IS COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL, VOL II//
 RMKS/1. THE FOLLOWING PROGRESS REPORT IS SUBMITTED IAW REF A. CO'S SUMMARY:

- A.
- B.
- C.

2. CRITICAL PATH WORK, INDUST, FMA, AND OTHER AREAS OF CONCERN:

- A.
- B.
- C.

3. STATUS OF PLANNING

- A.
- B.
- C.

4. STATUS OF WORK

	FOR WEEK	FOR AVAILABILITY	
A. INDUSTRIAL ACT			
PLANNED	(MAN-DAYS)		
EXPENDED	(MAN-DAYS)		
B. FMA			
ASSIGNED JOBS	N/A	()	
SCHEDULED COMPL	(#)	()	
ACTUAL COMPL	(#)	()	
C. SHIP'S FORCE			
SCHEDULED	(MAN-DAYS)	()	
EXPENDED	(MAN-DAYS)	()	
(45)	(45)	(20)	(95)

5. PROGRESS

	INDUST ACT	FMA	SHIP'S FORCE
A. AVAILABILITY	PROGRESS(%)	PROGRESS(%)	PROGRESS(%)
(45)	(45)	(20)	(95)

- 6. STATUS OF TESTING
 - A. INDUSTRIAL ACTIVITY
 - TOTAL TESTS AUTHORIZED ()
 - TESTS STARTED ()
 - TESTS COML ()
 - TESTS CANCELLED ()
 - B. FMA
 - TESTS SCHED TO START (100)
 - TESTS STARTED ()
 - TESTS SCHED TO COMPL ()
 - TESTS COMPL ()
- 7. STATUS OF KEY EVENTS

	ORIG SCHED	REV DATE	ACT COMP
COMMENCE AVAIL	2/1	2/11	2/12
DRY-DOCKING (IF APPLICABLE)	2/1	2/11	3/20
ELEX REMOVALS COMP	4/11		
UNDOCK		6/2	
SPACE TURNOVER			
#1MMR	6/23		
#2MMR	7/1		
LOA		7/20	
CREW CERT			
COMPLETE AVAIL	9/15		
HOT WASH	MM/DD/YYYY		

(THIS IS NOT AN ALL INCLUSIVE LISTING. SUPERVISING AUTHORITY WILL ISSUE THEIR LIST OF KEY EVENTS)

- 8. STATUS OF SELECTED RECORDS. (SHORT NARRATIVE HIGHLIGHTING ANY PROBLEM AREAS).
 - 9. FOL IS STATUS OF USS XXXXXX BLUE AND GREEN (IF NECESSARY)
 COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, COMBAT SYSTEMS,
 INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (C5ISR), INFORMATION
 TECHNOLOGY FOR THE 21ST CENTURY (IT-21) AND CNSL/SPAWAR ALTERATION INSTALL
 TEAM (AIT) HARDWARE AND SOFTWARE INSTALLS/UPGRADES FOR THE WEEK ENDING
 DDMMYY: (READ IN FIVE COLUMNS)
- | SYSTEM/EQUIP/ALT | START DATE | ESTIMATED
COMPLETION
DATE | ESTIMATE
PERCENTAGE
COMPLETED | ESTIMATE
(Y/N) | TCD BUST |
|------------------|------------|---------------------------------|-------------------------------------|-------------------|----------|
|------------------|------------|---------------------------------|-------------------------------------|-------------------|----------|

- 10. THE FOLLOWING C5ISR, IT-21 AND AITs ARE SCHEDULED FOR INSTALLATION: (READ IN FIVE COLUMNS)

SYSTEM/EQUIP/ALT	SPONSOR	STATUS	ESD	ECD
------------------	---------	--------	-----	-----

- STATUS NOTES
- NOTE 1 - WAITING RMMCO CHECK-IN
 - NOTE 2 - RMMCO CHECK-IN COMPLETE
 - NOTE 3 - AWAITING SHIP IN-BRIEF
 - NOTE 4 - WORK STARTED (TAGOUT/WAF SUBMITTED)
 - NOTE 5 - PLANNED, BUT NOT YET AUTHORIZED

- 11. FOL C5ISR, IT-21 AND AIT INSTALLS ARE COMPLETE:
 SYSTEM ALT SOVT (Y/N) SOVT COMP MSG (Y/N)
- 12. POSSIBLE HOT WASH ITEMS
- 13. SUPERVISING AUTHORITY COMMENTS.//

BT

NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND CURRENT PLAD IS UTILIZED.

APPENDIX I
MINIMUM DOCK TRIALS REQUIREMENTS
(SURFACE FORCE SHIPS AND AIRCRAFT CARRIERS)

REQUIREMENT	AIRCRAFT CARRIERS	SURFACE FORCE SHIPS
1. Check all Telephone, Announcing and Interior Communications circuits between all stations.	X	X
2. Test all alarms, i.e., General Quarters, Collision, etc.	X	X
3. Check all operational status readout interior communications circuits.	X	X
4. Test whistle.	X	X
5. Check adequacy of interior lighting and emergency lighting.	X	X
6. Operate all hydraulic systems using each installed pump.	X	X
7. Test operation of all radio transmitters and receivers using all antennas.	X	X
8. Operate all radar equipment.	X	X
9. Operate all sonar equipment.	X	X
10. Take and plot fixes using all navigation equipment and each antenna.	X	X
11. Test operation of trim/ballast control/list control system and pump (from all operating locations) in accordance with local instructions.	X	X
12. Test operation of portable submersible pump from each installed outlet.	X	X
13. Test engine order telegraphs.	X	X
14. Test magazine/pyro flooding systems.	X	X
15. Operate each lube oil system, including pumps, controllers, purifiers and indicators.	X	X
16. Energize the Navigation System and gyrocompass; determine that they settle out; take azimuth; check all repeaters.	X	X
17. Check potable water system, have water samples analyzed.	X	X
18. Test capstans and winches.	X	X
19. Operate steering system in all modes. Test normal and emergency rudder angle indicators.	X	X

REQUIREMENT	AIRCRAFT CARRIERS	SURFACE FORCE SHIPS
20. Remove all brows.	X	X
21. Test Automatic Bus Transfer devices.	X	X
22. Operate each watertight door and hatch.	X	X
23. Check operation of escape hatches/scuttle fittings.	X	X
24. Check navigation/running lights for brightness and proper lenses (to be done at night). Includes Flight Deck lighting. (if applicable)	X	X
25. Check air conditioning, chill water, ventilation, and heating systems.	X	X
26. Test underwater log and dummy log if water depth permits.	X	X
27. Check operation of all 400 cycle generating equipment.	X	X
28. Check all galley, messing, and ship's service equipment.	X	X
29. Check fathometer.	X	X
30. Check that mooring lines are doubled and taut and that camels are secured to the pier not the ship.	X	X
31. Check bilge flooding alarm.	X	X
32. Check all High Pressure and Low Pressure air systems/components.	X	X
33. Operate distilling units.	X	X
34. Check anchor windlass and brake operation.	X	X
35. Check atmosphere monitoring equipment, both installed and portable.	X	
36. If possible, operate Secondary Propulsion Motor(s) (SPM), auxiliary propulsion units and thrusters.		X
37. Operate the emergency diesel generator(s).	X	X
38. Engage and disengage propulsion shaft clutch(es).	X	X
39. Test Main Engines; Nuclear Powered ships jack main engines.	X	X
40. Check all TV monitoring systems.	X	X
41. Check small arms lockers and security devices.	X	X
42. Operate all Identification Friend or Foe (IFF) Equipment.	X	X
43. Check degaussing equipment.	X	X

REQUIREMENT	AIRCRAFT CARRIERS	SURFACE FORCE SHIPS
44. Check hangar bay doors.	X	X
45. Inventory and check all damage control equipment.	X	X
46. Inspect and operate oxygen and nitrogen systems.	X	
47. Check out all Tank Level Indicating systems.	X	X
48. Check out Flight Deck communications. (if applicable)	X	X
49. Check meteorological equipment.	X	X
50. Check graphics preparation/display equipment.	X	X
51. Check 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
52. Operate all electrical/mechanical medical equipment.	X	X
53. Inspect all compartments for proper stowage and cleanliness and operability of equipment.	X	X
54. Test operation of all data processing equipment.	X	X
55. Test and inspect jet blast deflectors.	X	X
56. Test and inspect JP-5 fuel systems.	X	X
57. Test and inspect all aircraft starting, handling and launching equipment including catapults.	X	X
58. Test and inspect aircraft landing equipment including land signal officer equipment, arresting gear, barricades, as applicable.	X	X
59. Operate all Refueling at Sea equipment.	X	X
60. Check bridge window wiper system.	X	X
61. Operate all accommodation ladders.	X	X
62. Operate all conveyors.	X	X
63. Launch and raise motor whaleboat.	X	X
64. Operate all Boats.	X	X
65. Test and inspect Lifeboat/Life Raft stowage and launch equipment.	X	X
66. Test and inspect all elevators in all modes of operation.	X	X
67. Test and inspect all fire fighting systems.	X	X

REQUIREMENT	AIRCRAFT CARRIERS	SURFACE FORCE SHIPS
68. Test and inspect refrigeration system.	X	X
69. Test and inspect all sea water cooling systems.	X	X
70. Operate stern gate doors.		X
71. Operate cranes.	X	X
72. Operate all ship's service generators.	X	X
73. Check all photographic processing and recording equipment.	X	X

NOTE: DURING SEA TRIALS DO NOT OPERATE TDUs WITH BALL VALVES BELOW 200 FEET OR TDUs WITH FLAPPER VALVES BELOW 150 FEET.

- (10) At maximum authorized operating depth:
- (a) Repeat item (9) (a) - Depth gauges and repeaters. (See Note 7)
 - (b) Equalize signal ejectors or launchers. Shoot pyrotechnics from each by hand and impulse methods, as applicable (See Note 8).
 - (c) Repeat item (9) (c) - Shafting and bearings.
 - (d) Repeat item (9) (e) - Cycle hull and back-up valves as specified in reference (ae).
 - (e) Repeat item (9) (f) - Bulkhead ventilation valves and watertight doors.
 - (f) Repeat item (9) (g) - Trim and drain pumps.
 - (g) Repeat item (9) (h) - Torpedo tubes. (See Notes 2 and 9)
 - (h) Repeat item (9) (i) - Cycle main ballast tank vents, manually only, and check for binding.
 - (i) Repeat item (9) (j) - Equalize TDU with sea pressure through trim line.
- (11) Prior to blow, visually inspect discharge of automatic drains in each EMBT quadrant for seawater leakage. Surface fully with EMBT blow from maximum authorized operating depth (not to exceed maximum depth permitted by the SOE at the initial speed required for the test). Check air bank pressures before and after blow. For SSN 23 only: Perform an MBT 6 normal blow from the BCP until MBTs 6A and 6B are blown to residual water levels.
- (12) Additional requirements may be imposed at the discretion of the CO.
- g. The following tests and evolutions shall be carried out on the surface following the deep dive:
- (1) Transmit completion of deep dive message.
 - (2) Note condition of periscope optics.
 - (3) Measure resistance to ground of all external electrical cables.
 - (4) Take radio antenna megger/capacitance readings (as appropriate) immediately after surfacing, again in one-half hour, and compare with readings obtained in item 3.b.(19) of this appendix.
 - (5) Measure resistance across and to ground from each side of all sonar hydrophones, projectors, and transducers or run applicable sonar hydrophone and transducer fault localization test (See Note 14).
 - (6) Measure rodmeter coil and button resistance and coil insulation resistance to ground.
 - (7) Open all lower hatches, except **DO NOT** open weapons shipping hatch while at sea. Check the upper hatch seals, Logistics Escape Trunks/Logistics Plug Trunks inter-seals and penetrations for leakage. Open the sonar sphere access door, where applicable, and check sonar sphere for leakage. Weapons shipping trunk shall be opened and checked dockside, immediately upon return from sea trials, for evidence of leakage.
- h. The following tests and evolutions shall be carried out submerged following the deep dive:
- (1) Full power run (See Notes 15, 16 and 17).
 - (2) Emergency stop (See Notes 15 and 16).
 - (3) Steering and diving operation at full speed (See Notes 16 and 18).
 - (4) Steep angles - operate ship through several depth changes using large up and down angles to check operation of ship machinery (See Note 16).

- (5) Time raising each periscope and mast at maximum depth and speed for which they are designed. Check training feature where applicable.
- (6) Comply with CS/CCS test program with regard to firing of water slugs and testing of torpedo tubes (See Note 2).
- (7) 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.
- (8) Additional requirements may be imposed at the discretion of the CO.

4. Sea Trial Conclusion. At the conclusion of Sea Trials, and based on a review of Sea Trial deficiencies and TYCOM concurrence, the submarine may transit to a port other than the overhauling activity. During this transit the submarine shall not operate at depths greater than one-half test depth plus fifty feet, unless specifically authorized by NAVSEA, and shall not be released for unrestricted operations until all RECs are closed and final URO certification is received, per the Submarine Safety (SUBSAFE) Requirements Manual.

NOTES

1. **Temporary condensate strainers that cannot be monitored for differential pressure shall be inspected and cleaned during sea trials following at least one hour of operation at between 45 and 55 percent reactor power, and prior to operation at higher power levels, in accordance with reference (ao).**
2. **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).**
3. **For SSBN/SSGN 726 Class only - This surface evolution, full power run astern, shall be conducted only if maintenance was accomplished on the reduction gears, the astern throttle(s) or the main shaft thrust bearing.**
4. **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.**
5. **Pumps should be tested in the industrial activity, prior to Sea Trials, to determine that they can pump against a test depth head.**
6. **Reference (ae) prescribes procedures for system operation during deep dive.**
7. **Compare all depth and pressure gauges. Depth and pressure gauges should be checked as soon as the next specified depth is reached.**
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 depths specified by reference (ae). Shoot pyrotechnics on initial dive and at test depth on 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. **If major structural modifications were accomplished, 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., blown sanitary tanks). If major structural modifications were not accomplished, those sea water 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, may be equalized and operated on the initial dive to test depth (See reference (ae)).**

APPENDIX R

AVAILABILITY QUALITY MANAGEMENT PLAN (QMP) (SURFACE FORCE SHIPS ONLY)

1. NSA Certification Requirements. Naval Supervising Activity (NSA) certification of readiness for major Key Events, Fast Cruise/Sea Trials and availability completion is required. NSA certification of readiness for events must include a basis for certification. For surface force ship availabilities, this basis includes:
 - a. Approved QMS. The Executing Activity performing the work has a NAVSEA approved QMS. The QMS is audited periodically and includes ongoing in-process surveillance and follow-up to assure that recurring, systemic problem areas are identified and corrective action is taken. The QMS is further defined in NAVSEA Standard Item 009-04, Quality System Management.
 - b. Mandatory Oversight. The NSA or Government activity performing the oversight of contract execution provides mandatory oversight to include “G” point observation and mandatory review of test data when required by the contract for critical work as required by Volume VII, Chapter 11, Section 11.5 of this manual and other higher level documentation.
 - c. Non-Mandatory Oversight. The NSA or Government activity performing oversight of contract execution must also perform adequate oversight of contract work not identified as mandatory. Although not specified, frequency or degree of oversight is often described as “random.” There should be a systematic approach taken to defining where government oversight should be applied in order to provide the NSA with the maximum reasonable level of assurance that work is planned, executed and tested correctly.

2. QMP Requirement. The Availability Quality Management Plan (QMP) provides a risk-based methodology for the NSA to utilize and provide this maximum reasonable level of assurance in work planning, execution and testing without requiring 100 percent oversight or review of contractor work products. An Availability QMP is required by Volume VII, Chapter 11 of this manual (Contract Administration Quality Assurance Program). Specifically, paragraph 11.5.1 requires “Development of a QA plan for each work item in the contract based on degree of risk and contractor quality history.”

3. QMP Methodology. The Availability QMP then is a product of review(s) conducted on the Availability Work Package (AWP) that evaluates each work item based on probability of failure and criticality of failure. The evaluation of the work items for these two attributes, discussed below, should result in a plan which dictates which work items should get a detailed Document Review/Planning Review (PR), or technical “Work Specification Review” by Engineering/QA and which items will have increased levels of Procedures Evaluation (PE) and Product Verification Inspection (PVI) by Engineering, QA and Waterfront Operations Departments. In addition, the Availability QMP should determine which work items will receive Quality Audits by QA Department.
 - a. Probability of Failure. Contractor’s past performance history in different work areas, as captured in Code 130 Quality Data Evaluation, is utilized to evaluate work items that will require additional oversight based on contractor’s past performance. If a contractor does not have any previous experience in a work area, probability of failure should be evaluated as high, unless there is work experience in a related area sufficient to build confidence in expectation of good contractor performance.
 - b. Criticality of Failure. A consistent approach needs to be utilized by the NSA when developing Availability QMPs to identify work items which have higher criticality of failure. Simply put, equipments/systems that, by their failure alone, will result in the inability of the ship to get underway or meet primary mission requirements, (C4 CASREP) would equate to highest criticality of failure impact. Those systems/equipments that, by their failure alone, would result in a major degradation to ship’s ability to meet mission requirements, (C3 CASREP) would have next highest criticality of failure consideration. Systems/equipments that, by their failure alone, would result in minor degradation to ship’s ability to meet mission requirements, (C2 CASREP) would have the lowest criticality of failure

consideration. There is no single source of input to determine criticality of failure. CNSP/CNSLINST 3504.1 identified “Redlines” requirements for surface force ships and should be utilized when identifying criticality of failure of systems/equipments being worked in the availability. Additional discussion on these requirements is provided below:

- (1) **Critical Systems.** Regardless of contractor past performance, if a higher level document requires 100 percent review and oversight by the government, this oversight is provided via contractor’s use of Expanded Process Control Procedures (EPCP). These EPCPs require 100 percent government review and approval to assure correct technical references are utilized and to assure that correct government checkpoint “G” points, as well as contractor QA checkpoint (“I” and “V” points), are utilized. These types of systems and equipment require mandatory Objective Quality Evidence (OQE) consisting of QA forms to document critical steps in the EPCP and reviewed/approved by the NSA prior to work certification. The Availability QMP should account for critical systems requiring EPCPs and assure that additional PEs and PVIs are scheduled for these systems.
- (2) **Redlines Systems.** CNSP/CNSLINST 3504.1 includes matrices which identify minimum equipment lists by ship class. The NSA should utilize the redlines instruction as a guideline for determining “criticality of failure” when evaluating work items that may require additional oversight. Consideration should be given to redundancy, for example: On a DDG, relative level of oversight on a boat davit (1 of 1 required) would likely dictate more oversight than work on an air conditioning plant (2 of 5 required). For all redlines systems/equipments, contractor past performance discussed in paragraph 3.a. above should be considered.
- (3) **Non-Redlines Systems.** Systems/equipments that are not addressed by CNSP/CNSLINST 3504.1 normally require less oversight. An exception would be if there is a record of poor past performance. For example, poor performance on critical coatings systems application in tanks/voids. While Volume VII, Chapter 11 of this manual requires increased RMC inspection requirements for these systems, additional PE, PR, PVI or QA audit may also be required by the RMC due to a contractor’s past performance.
- (4) **QMP Applicability to FMA (I-Level), Ship’s Force (SF), Naval Shipyards (NSY) and Alteration Installation Teams (AIT).** While the QA Plan described herein generally refers to work contracted through the RMC, the NSA availability certification includes all work accomplished in the availability to include I-Level (FMA), SF, NSY and AIT. Each of these executing activities is also required to maintain an approved QMS. The NSA may not have direct oversight responsibility for these executing activities or provide auditing of their QMS. Oversight for NSY, FMA and SF work is provided organic to those organizations and does not normally require additional oversight by the NSA. The AWP review conducted concurrent with development of the QMP should, however, include a determination of high risk jobs being conducted that may require additional NSA oversight. This oversight, if required, should be part of the Availability QMP. For AIT work, NAVSEA Technical Standard 9090310E requires that AIT contractors maintain a QMS approved by NAVSEA 04XQ and audited by respective government sponsor. NAVSEA Technical Standard 9090310E also requires that respective AIT government sponsors provide on-site oversight of AIT contractors, including specification review and approval, G point checks, and in-process surveillance of work. The NSA should include AIT work in the QMP development and make a determination on what additional oversight may be required to include in the QMP for AIT work.

APPENDIX AJ

**SAMPLE FINAL AVAILABILITY KEY EVENT READINESS CERTIFICATION MEMORANDUM
(SURFACE FORCE SHIPS ONLY)**

XXXX

Ser ____

DD MMM YY

MEMORANDUM

From: Chief Engineer, _____ Regional Maintenance Center

To: Commanding Officer, _____ Regional Maintenance Center

Subj: FINAL READINESS FOR UNDOCKING CERTIFICATION FOR USS PILOT SHIP (XXX XX)

Ref: (a) COMUSFLTFORCOMINST 4790.3 Joint Fleet Maintenance Manual (JFMM)

(b) Prime Contractor readiness for Undocking Certification Memorandum / Ser XXX

(c) Fleet Maintenance Activity readiness for Undocking Certification Memorandum / Ser XXX

(d) Naval Shipyard readiness for Undocking Certification Memorandum / Ser XXX

(e) Alteration Installation Team readiness for Undocking Certification Memorandum / Ser XXX

(f) USS Pilot Ship (XXX XX) readiness for Undocking Certification Memorandum / Ser XXX

(g) XXRMC Code 130 Quality Assurance readiness for Undocking Certification Memorandum / Ser XXX

1. In accordance with references (a) through (g), this memorandum acknowledges that all executing activities have certified completion of all work and testing required to support readiness for Undocking.

2. Exception items provided in references (b) through (g) have been reviewed and do not impact readiness for Undocking.

AA FIRST

Commanding Officer, USS Pilot Ship (XXX XX)

BB NEXT

Project Manager, ____ Regional Maintenance Center

CC MIDDLE

Port Engineer/TYCOM

DD LAST

NSA CHENG

COPY TO:

Commanding Officer, USS Pilot Ship (XXX XX)

Project Manager, ____ Ashore Ships Maintenance

Manager/TYCOM

NSA CHENG

RMC Integrated Test Coordinator, Code XXX

Commander, Navy Regional Maintenance Center

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APPENDIX A O

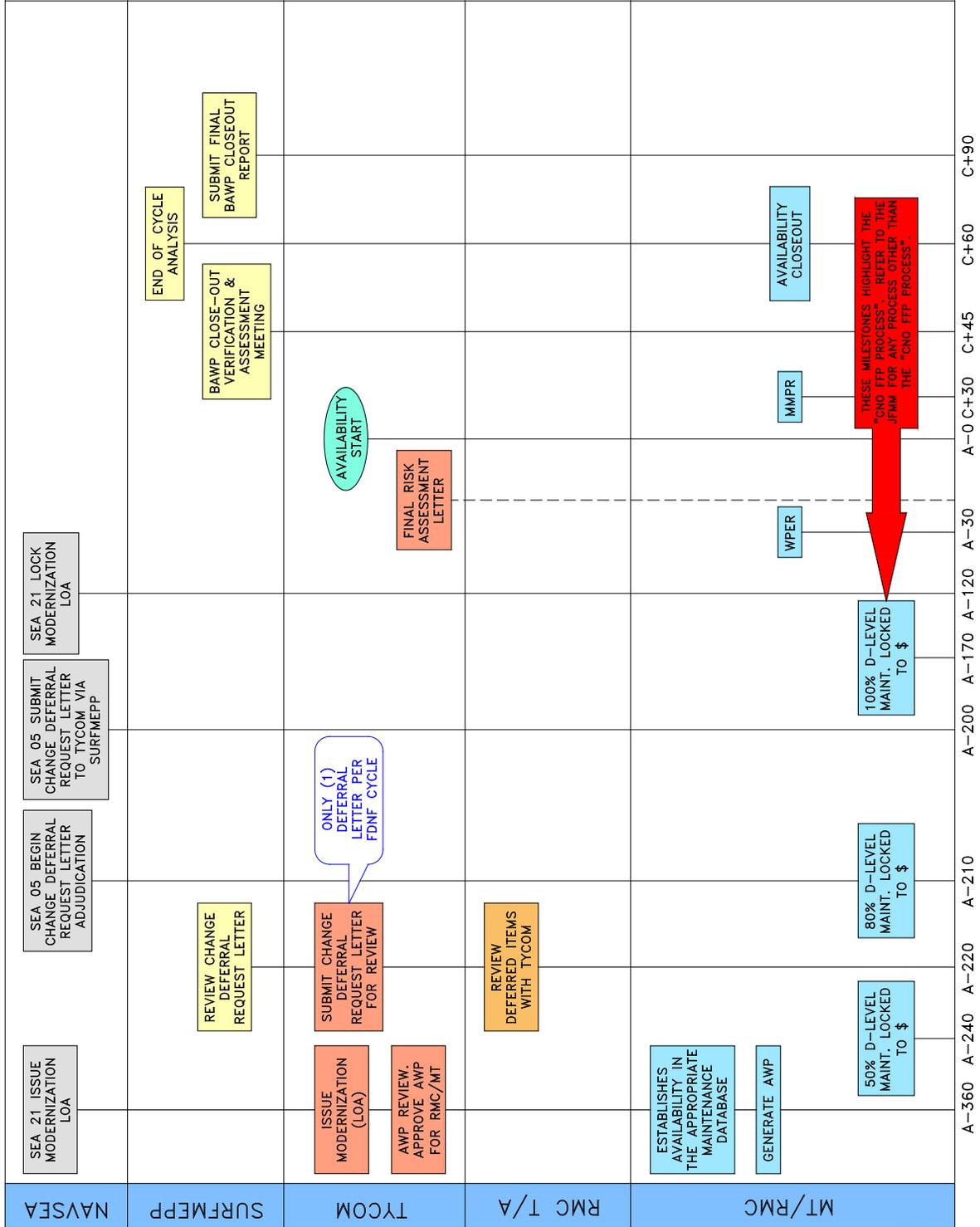
FDNF BAWP TO AWP PROCESS

(SURFACE FORCE SHIPS ONLY)

NOTE: SURFMEPP WILL HOST THREE (3) SCHEDULED MEETINGS OVER THE COURSE OF THE SHIP'S FRP MAINTENANCE CYCLE: THE LCPC (A-615), THE CSMP/DFS/BAWP MID-CYCLE REVIEW (A-410) AND THE BAWP CLOSE-OUT VERIFICATION AND ASSESSMENT MEETING (C+45). DUE TO A COMPRESSED FORWARD DEPLOYED NAVAL FORCES (FDNF) FRP MAINTENANCE CYCLE, TWO MAINTENANCE CYCLES ARE PLANNED CONCURRENTLY. THE FOLLOW-ON CYCLE'S LCPC OCCURS AFTER TYCOM'S CURRENT CYCLE DEFERRAL LETTER SUBMISSION AT A-220 AND PRIOR TO THE START OF THE CURRENT CYCLE'S CNO AVAILABILITY. WHEN POSSIBLE, SURFMEPP CONFERENCES WILL BE HELD IN CONJUNCTION WITH OTHER MT SCHEDULED MEETINGS, SUCH AS MONTHLY AVAILABILITY ADVANCED PLANNING MEETINGS AND PLANNING BOARD FOR MAINTENANCE (PB4M).

1. **The Life Cycle Planning Conference will be controlled in accordance with paragraph 3.4.1a.(4) of this chapter.**
2. A-670. SURFMEPP will establish the date, location and agenda for the LCPC.
3. A-625. SURFMEPP will send a list of the FRP Maintenance Cycle CMP requirements and a list of recommended availability services to the ship's PE for review and correction. This list is a preview of initial BAWP and will be discussed in detail at the LCPC. Upon request SURFMEPP will provide a list of CMP-required assessments to TYCOM, NRMC and RMC in support of the TSRA process.
4. A-615. The LCPC agenda will include a review of the planning schedule, required CMP assessments, Navy Data Environment (NDE) modernization forecasts, CNO Availability services/routines as applicable, organizational responsibilities, and DFSs.
5. A-605.
 - a. SURFMEPP will upload a data file (MM0001 file) with all mandatory maintenance actions and expected CNO Availability services into the ship's CSMP in support of ship-specific MT screening and brokering requirements. The data file will span approximately six (6) calendar quarters.
 - b. SURFMEPP will issue formal correspondence detailing the planning schedule and outstanding action items from the LCPC.
6. All other requirements listed in the body of this manual are germane (refer to Volume II, Part I, Chapter 3).

APPENDIX AO BAWP TO AWP PROCESS - FDNF COMBATANTS



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APPENDIX BB

**SAMPLE ISIC MESSAGE TO TYCOM CONCERNING CREW CERTIFICATION AND MATERIAL
CONDITION FOR FAST CRUISE AND SEA TRIALS FOR INDUSTRIAL ACTIVITY AVAILABILITIES
LESS THAN SIX MONTHS IN DURATION**

(SUBMARINES ONLY)

FM COMSUB<RON/GRU NO.>//
 TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 INFO <SUPERVISING AUTHORITY>//<CODES>//
 USS <SHIP NAME>//
 COMSUBGRU<NO.>//
 BT
 UNCLAS//N09094//
 MSGID/GENADMIN/COMSUB<RON/GRU NO.>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.> CREW AND MATERIAL CERTIFICATION//
 REF/A/DOC/COMUSFLTFORCOM/<DATE>//
 REF/B/DOC/NAVSEA/<DATE>//
 REF/C/DOC/NAVSEA/<DATE>//
 NARR/REF A IS COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL. REF B IS
 SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL, NAVSEA 0924-062-0010. REF C IS
 NAVSEA URO MRC TECHNICAL MANUAL//
 RMKS/1. CREW CERTIFICATION CONDUCTED AND SATISFACTORILY COMPLETED IAW REF A.
 2. IAW REFS A AND B, COMSUB<RON/GRU NO.> CERTIFIES THE SUBSAFE CERTIFICATION BOUNDARY
 OF <SHIP NAME/HULL NO.> INSTALLED, REPAIRED AND/OR TESTED BY FORCES AFLOAT IS
 SATISFACTORY FOR SEA TRIALS TO TEST DEPTH. ALL SUBSAFE CONTROLLED WORK PACKAGES
 ARE CLOSED. CERTIFICATION REQUIREMENTS OF REF B HAVE BEEN SUSTAINED FOR THE
 REMAINDER OF THE SUBSAFE CERTIFICATION BOUNDARY. ALL OTHER CONTROLLED WORK
 PERFORMED BY SHIP'S FORCE HAS BEEN COMPLETED AND SATISFACTORILY RETESTED AND THE
 APPROPRIATE WORK PACKAGES CLOSED.
 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:

<u>DEPARTURE NO.</u>	<u>TYPE</u>	<u>SYSTEM/COMPONENT</u>	<u>RESTRICTION (IF ANY)</u>
A.			
B.			

 5. ALL URO MRC AND MANDATORY TESTS/INSPECTIONS SPECIFIED IN REF C HAVE BEEN
 ACCOMPLISHED OR VERIFIED TO BE WITHIN THE REQUIRED PERIODICITY.
 6. COMSUB<RON/GRU NO.> REPORTS READINESS OF USS <SHIP NAME/HULL NO.> FOR COMMENCEMENT
 OF FAST CRUISE. CO USS <SHIP NAME/HULL NO.> CONCURS.//
 7. SUBJECT TO SATISFACTORY COMPLETION OF FAST CRUISE AND RESOLUTION OF MANDATORY
 DEFICIENCIES COMSUB<RON/GRU NO.> CONSIDERS USS <SHIP NAME/HULL NO.> MATERIAL CONDITION
 READINESS SATISFACTORY FOR COMMENCEMENT OF SEA TRIALS.//
 BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND
CURRENT PLAD IS UTILIZED.**

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APPENDIX BF

**SAMPLE ISIC MESSAGE TO TYCOM CONCERNING
MATERIAL CERTIFICATION FOR FOLLOW-ON SEA TRIALS IN CASES WHERE A PREVIOUS SEA
TRIAL WAS ABORTED OR CORRECTIVE ACTIONS FOR SEA TRIAL DEFICIENCIES REQUIRE AN
ADDITIONAL DEEP DIVE FOR INDUSTRIAL ACTIVITY AVAILABILITIES LESS THAN SIX
MONTHS IN DURATION**

(SUBMARINES ONLY)

FM COMSUB<RON/GRU NO.>//
TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
INFO COMSUBRON ELEVEN//
COMSUBGRU <NO.>//
USS <SHIP NAME>//
<SUPERVISING AUTHORITY>//<CODES>//
BT
UNCLAS //N09094//
MSGID//GENADMIN/COMSUB<RON/GRU NO.>//
SUBJ/(SUBS) USS <SHIP NAME/HULL NO.>MATERIAL CERTIFICATION/ READINESS FOR <FOLLOW-ON ^(NOTE 1)>
SEA TRIALS//
REF/A/DOC/ COMUSFLTFORCOM/<DATE>//
REF/B/RMG/COMSUB<RON/GRU NO.>/<DTG>//{ APPENDIX BK }
REF/C/DOC/NAVSEA /<DATE>//
REF/D/RMG/USS <SHIP NAME>/<DTG>//{ APPENDIX BE }
NARR/REF A IS COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL, VOLUME II.
REF B IS COMSUB<RON/GRU NO.> MSG TO TYCOM ON MATERIAL STATUS PRIOR TO INITIAL SEA
TRIALS. REF C IS NAVSEA 0924-062-0010, SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS
MANUAL. REF D IS USS <SHIP NAME/HULL NO.> REPORT OF READINESS FOR FOLLOW-ON SEA
TRIALS.//
RMKS/1. IAW REF A AND C, THIS MSG CERTIFIES THAT NO MANDATORY DEFICIENCIES FOR
<FOLLOW-ON ^(NOTE 1)> SEA TRIALS HAVE BEEN IDENTIFIED. THERE HAVE BEEN NO RECS OPENED AND
NO FORCES AFLOAT SUBSAFE DEPARTURES FROM SPECIFICATION PROCESSED SINCE THE START
OF THE INITIAL SEA TRIALS <OR, SUBSEQUENT TO REF B, REPORT ANY MANDATORY DEFICIENCIES DISCOVERED
WITH CORRECTIVE ACTION, AND IF RECS AND/OR DEPARTURES FROM SPECIFICATIONS WERE PROCESSED SINCE THE
START OF THE INITIAL SEA TRIALS, REPORT ALL RECS OPENED SINCE THE START OF INITIAL SEA TRIALS ARE CLOSED
AND/OR ALL SUBSAFE DEPARTURES FROM SPECIFICATIONS PROCESSED SINCE THE START OF SEA TRIALS ARE RESOLVED
^{NOTE 2}>.
2. THERE ARE NO SUBSAFE DEPARTURES FROM SPECIFICATIONS WITH CONDITIONS WHICH
HAVE NOT BEEN SATISFIED. THE FOLLOWING DEPARTURES FROM SPECIFICATIONS ARE
CURRENTLY OUTSTANDING:
DEPARTURE NO. TYPE SYSTEM/COMPONENT RESTRICTION (IF ANY)
A.
B.
3. SHIP REPORTED READINESS FOR FOLLOW-ON SEA TRIALS IN REF D.//
BT

NOTE 1: UPCOMING TRIAL WHICH IS SUBJECT OF THIS CERTIFICATION (E.G., SECOND SEA TRIAL, ETC.).

NOTE 2: 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 FOR FAST CRUISE MESSAGE.

NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND CURRENT PLAD IS UTILIZED.

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APPENDIX BK

**SAMPLE ISIC MESSAGE TO TYCOM CONCERNING FINAL MATERIAL CERTIFICATION PRIOR
TO SEA TRIALS FOR INDUSTRIAL ACTIVITY AVAILABILITIES LESS THAN SIX MONTHS IN
DURATION**

(SUBMARINES ONLY)

FM COMSUB<RON/GRU NO.>//
 TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 INFO COMSUBRON ELEVEN//
 COMSUBGRU <NO.>//
 USS <SHIP NAME>//
 <SUPERVISING AUTHORITY>//<CODES>//
 BT
 UNCLAS //N09094//
 GENADMIN/COMSUB<RON/GRU NO.>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.> MATERIAL CERTIFICATION/ READINESS FOR SEA TRIALS//
 REF/A/DOC/ COMUSFLTFORCOM/<DATE>//
 REF/B/RMG/COMSUB<RON/GRU NO.><DTG>//{ APPENDIX BB }
 REF/C/RMG/USS<SHIP NAME>/<DTG>//{ APPENDIX BJ }
 REF/D/DOC/NAVSEA /<DATE>//
 NARR/REF A IS COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL, VOLUME II.
 REF B IS COMSUB<RON/GRU NO.> MSG TO TYCOM ON CREW CERT. REF C IS SHIP REPORT OF
 COMPLETION OF FAST CRUISE AND READINESS FOR SEA TRIALS. REF D IS NAVSEA 0924-062-0010,
 SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL. |
 RMKS/1. IAW REFS A AND D, THIS MSG CERTIFIES THAT NO MANDATORY DEFICIENCIES FOR SEA
 TRIALS HAVE BEEN IDENTIFIED AS REPORTED IN REF B AND C. THERE HAVE BEEN NO RECS
 OPENED AND NO SUBSAFE DEPARTURES FROM SPECIFICATION PROCESSED SINCE THE START OF
 FAST CRUISE. <OR, REPORT ANY MANDATORY DEFICIENCIES DISCOVERED WITH CORRECTIVE ACTION, AND IF RECS
 AND/OR DEPARTURES FROM SPECIFICATIONS WERE PROCESSED SINCE THE START OF FAST CRUISE, REPORT ALL RECS
 OPENED SINCE THE START OF FAST CRUISE ARE CLOSED AND/OR ALL SUBSAFE DEPARTURES FROM SPECIFICATIONS
 PROCESSED SINCE THE START OF FAST CRUISE ARE RESOLVED.> (NOTE 1.)
 2. THERE ARE NO SUBSAFE DEPARTURES FROM SPECIFICATIONS WITH CONDITIONS WHICH
 HAVE NOT BEEN SATISFIED. THE FOLLOWING ADDITIONAL DEPARTURES FROM SPECIFICATIONS
 WERE GENERATED SUBSEQUENT TO REF B. <If None, indicate NONE>
DEPARTURE NO. TYPE SYSTEM/COMPONENT RESTRICTION (IF ANY)
 A.
 B.
 3. REQUEST PERMISSION TO COMMENCE SEA TRIALS. CO <SHIP NAME/HULL NO.> CONCURS.//
 BT

**NOTE 1: 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 FOR FAST CRUISE MESSAGE.**

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND
CURRENT PLAD IS UTILIZED.**

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APPENDIX BO

SAMPLE TYCOM MESSAGE TO SHIP CONCERNING URO FOR INDUSTRIAL ACTIVITY
AVAILABILITIES LESS THAN SIX MONTHS IN DURATION

(SUBMARINES ONLY)

FM COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 TO USS <SHIP NAME>//
 INFO CNO WASHINGTON DC//
 COMNAVSEASYS COM WASHINGTON DC//
 COM<LANT/PAC>FLT <NORFOLK VA/PEARL HARBOR HI>//
 DIRSSP WASHINGTON DC//{FOR SSBN/SSGN}
 COMSUBGRU <NO.>//
 COMSUB<RON/GRU NO.>//
 <SUPERVISING AUTHORITY>//
 SUBMEPP PORTSMOUTH NH//
 BT
 UNCLAS //N09094//
 MSGID/GENADMIN/COMSUB<LANT/PAC>//
 SUBJ/(SUBS) UNRESTRICTED OPERATION OF USS <SHIP NAME/HULL NO.>//
 REF/A/RMG/ USS <SHIP NAME>/<DTG>//
 REF/B/RMG/<SUPERVISING AUTHORITY>/<DTG>//
 REF/C/DOC/COMUSFLTFORCOMINST 4790.3//
 REF/D/DOC/ NAVSEA 0924-062-0010//
 REF/E/DOC/ COMSUB<PAC/FOR>/<DATE>//
 NARR/REF A IS USS <SHIP NAME> MSG CONCERNING COMPLETION OF SEA TRIALS. REF B IS THE
 <SUPERVISING AUTHORITY> REPORT OF SATISFACTORY REVIEW OF SEA TRIALS TEST DATA AND
 SATISFACTORY MATERIAL CONDITION FOLLOWING DEPOT AVAILABILITY. REF C IS THE JOINT
 FLEET MAINTENANCE MANUAL. REF D IS THE SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS
 MANUAL. REF E IS THE COM<LANT/PAC>NOTE C3120 CONCERNING SUBMARINE DEPTH
 AUTHORIZATIONS AND RESTRICTIONS//
 RMKS/1. REF A REPORTED THE SATISFACTORY COMPLETION OF SEA TRIALS WITH NO SUBSAFE
 DEFICIENCIES IDENTIFIED. (IF SPECIFIC SUBSAFE DEFICIENCIES WERE IDENTIFIED BUT WERE
 NOT DEEP DIVE RETEST FAILURES LIST SPECIFICS – DEEP DIVE TEST FAILURES WILL REQUIRE A
 FOLLOW-ON SEA TRIAL).
 2. REF B REPORTED SATISFACTORY REVIEW OF SEA TRIAL AGENDA BY <SUPERVISING
 AUTHORITY> AND SATISFACTORY MATERIAL CONDITION OF THE SHIP FOLLOWING SEA TRIALS.
 3. TYCOM AUTHORIZES, USS <SHIP NAME/HULL NO.> TO CONDUCT OPERATIONS TO <SPECIFIED>
 DEPTH, SUBJECT TO THE FOLLOWING RESTRICTIONS: <LIST RESTRICTIONS IF THEY EXIST OR
 STATE "NONE">.
 4. CONTINUED CERTIFICATION FOR OPERATIONS TO TEST DEPTH IS SUBJECT TO COMPLIANCE
 WITH REF C AND REF D.
 5. URO/MRC PERIODICITIES FOLLOWING THE MINOR DEPOT AVAILABILITY COMMENCE ON
 <DATE> IN ACCORDANCE WITH VOLUME VI, SECTION 25.2.3.1.B OF REF C.
 6. THIS MSG REMAINS IN EFFECT UNTIL INCLUDED IN A FUTURE REVISION OF REF E.//
 BT

NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND CURRENT PLAD IS UTILIZED.

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APPENDIX CB

SAMPLE ISIC MESSAGE TO TYCOM CONCERNING CREW CERTIFICATION FOR INDUSTRIAL
ACTIVITY AVAILABILITIES GREATER THAN SIX MONTHS IN DURATION

(SUBMARINES ONLY)

FM COMSUB<RON/GRU NO.>
 TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 INFO <SUPERVISING AUTHORITY>//<CODES>//
 USS <SHIP NAME>
 COMSUBGRU <NO.>//
 COMNAVSEASYS COM WASHINGTON DC//
 BT
 UNCLAS//N09094//
 MSGID/GENADMIN/COMSUB<RON/GRU NO.>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.> CREW AND MATERIAL CERTIFICATION//
 REF/A/DOC/COMUSFLTFORCOM/<DATE>//
 REF/B/DOC/NAVSEA 0924-062-0010/<DATE>//
 REF/C/DOC/NAVSEA/<DATE>//
 NARR/REF A IS COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL. REF B IS
 SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL. REF C IS NAVSEA URO MRC
 TECHNICAL MANUAL.//
 RMKS/1. CREW CERTIFICATION CONDUCTED AND SATISFACTORILY COMPLETED IAW REF A.
 2. IAW REFS A AND B, COMSUB<RON/GRU NO.> CERTIFIES THE MATERIAL CONDITION SUBSAFE
 CERTIFICATION BOUNDARY OF <SHIP NAME/HULL NO.> INSTALLED, REPAIRED AND/OR TESTED BY
 FORCES AFLOAT IS SATISFACTORY FOR SEA TRIALS TO TEST DEPTH. ALL SUBSAFE
 CONTROLLED WORK PACKAGES ARE CLOSED. CERTIFICATION REQUIREMENTS OF REF B HAVE
 BEEN SUSTAINED FOR THE REMAINDER OF THE SUBSAFE CERTIFICATION BOUNDARY. ALL
 OTHER CONTROLLED WORK PERFORMED BY SHIP'S FORCE HAS BEEN COMPLETED AND
 SATISFACTORILY RETESTED AND THE APPROPRIATE WORK PACKAGES CLOSED.
 3. MATERIAL/SALVAGE CONDITION CERTIFIED READY FOR SEA UPON COMPLETION OF THE
 FOLLOWING CORRECTIVE ACTIONS:
 A.
 B.
 4. THERE ARE NO OUTSTANDING REC'S. THE FOLLOWING DEPARTURES FROM SPECIFICATION
 ARE CURRENTLY OUTSTANDING:

<u>DEPARTURE NO.</u>	<u>TYPE</u>	<u>SYSTEM/COMPONENT</u>	<u>RESTRICTION (IF ANY)</u>
A.			
B.			

 5. ALL URO MRC AND MANDATORY TESTS/INSPECTIONS SPECIFIED IN REF B AND C HAVE BEEN
 ACCOMPLISHED OR VERIFIED TO BE WITHIN THE REQUIRED PERIODICITY.
 6. COMSUB<RON/GRU NO.> REPORTS READINESS OF USS <SHIP NAME/HULL NO.> FOR COMMENCEMENT
 OF FAST CRUISE. CO USS <SHIP NAME/HULL NO.> CONCURS.//
 7. SUBJECT TO SATISFACTORY COMPLETION OF FAST CRUISE AND RESOLUTION OF MANDATORY
 DEFICIENCIES COMSUB<RON/GRU NO.> CONSIDERS USS <SHIP NAME/HULL NO.> MATERIAL CONDITION
 READINESS SATISFACTORY FOR COMMENCEMENT OF SEA TRIALS.//
 BT
**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND
 CURRENT PLAD IS UTILIZED.**

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APPENDIX CD

**SAMPLE TYCOM MESSAGE TO SHIP CONCERNING COMPLETION
PREREQUISITES FOR AVAILABILITIES OF GREATER THAN
SIX MONTHS DURATION**

(SUBMARINES ONLY)

FM COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 TO USS <SHIP NAME>//
 COMSUB<RON/GRU NO.>//
 <SUPERVISING AUTHORITY>//<CODES>//
 INFO CNO WASHINGTON DC//
 COM<LANT/PAC>FLT <NORFOLK VA/PEARL HARBOR HI>//
 COMNAVSEASYS COM WASHINGTON DC//
 DIRSSP WASHINGTON DC // {FOR SSBN/SSGN}
 <SUBOPAUTH>// {IF OTHER THAN PARENT TYCOM}
 COMSUBGRU <NO.>//
 COMSUBRON ELEVEN//
 BT
 UNCLAS//N09094//
 MSGID/GENADMIN/TYCOM//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.> <TYPE AVAILABILITY> FAST CRUISE, SEA TRIAL AND
 COMPLETION PREREQUISITES//
 REF/A/DOC/COMUSFLTFORCOM/<DATE>//
 REF/B/DOC/NAVSEA/<DATE>//
 NARR/REF A IS COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL, VOLUME II.
 REF B IS NAVSEA 0924-062-0010, SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL//
 RMKS/1. REFS A AND B PRESCRIBE TYCOM AND NAVSEA REQUIREMENTS FOR INDUSTRIAL
 AVAILABILITY FAST CRUISE, SEA TRIAL AND COMPLETION.
 2. FOLLOWING REPORTS AND AUTHORIZATIONS ARE PREREQUISITES TO START OF FAST CRUISE:
 A. COMSUB<RON/GRU NO.> MSG TO TYCOM IAW REF A THAT CREW CERTIFICATION AND
 MATERIAL CONDITION IS SATISFACTORY FOR FAST CRUISE AND SEA TRIALS. {APPENDIX CB}.
 B. <SUPERVISING AUTHORITY> MSG TO NAVSEA AND TYCOM IAW REF B THAT MATERIAL CONDITION
 OF THOSE PARTS OF <SHIP NAME/HULL NO.> INSTALLED, REPAIRED AND/OR TESTED BY THE
 SHIPYARD ARE SATISFACTORY FOR POST <TYPE AVAILABILITY> TRIALS, INCLUDING CORRECTION
 OF ALL CAT I AUDIT RECOMMENDATIONS HAVE BEEN SATISFACTORILY RESOLVED.
 {REFERENCE B, APPENDIX B.3.1}
 C. CO, USS <SHIP NAME/HULL NO.> MSG TO TYCOM IAW REF A STATING THAT CREW AND SHIP ARE
 READY FOR SEA TRIALS, LISTING EXCEPTIONS SUCH AS COMPLETION OF FAST CRUISE.
 {APPENDIX CJ}
 D. NAVSEA (PMS 392) MSG TO TYCOM IAW REF B CERTIFYING MATERIAL CONDITION OF USS
 <SHIP NAME/HULL NO.> FOR SPECIFIC TRIAL OPERATING DEPTH. {REFERENCE B, APPENDIX B.3.2}
 E. TYCOM MSG TO NAVSEA 08 AND CO, USS <SHIP NAME/HULL NO.> IAW REF A REQUESTING NAVSEA
 AUTHORIZATION FOR CRITICAL REACTOR OPERATIONS AND GRANTING SHIP PERMISSION TO
 START FAST CRUISE UPON RECEIPT OF THIS AUTHORIZATION. {APPENDIX CE}
 F. NAVSEA 08 MSG AUTHORIZING CRITICAL REACTOR OPERATIONS FOR FAST CRUISE AND SEA
 TRIALS
 3. FOLLOWING REPORTS AND AUTHORIZATIONS ARE PREREQUISITES TO START OF SEA TRIALS:
 A. <SUPERVISING AUTHORITY> MSG TO TYCOM IAW REF B REPORTING COMPLETION OF FAST CRUISE
 AND READINESS FOR SEA TRIALS. {REFERENCE B, APPENDIX B.3.3}
 B. CO, USS <SHIP NAME/HULL NO.> MSG TO TYCOM IAW REF A AFTER COMPLETION OF FAST CRUISE
 REPORTING READINESS FOR SEA TRIALS. {APPENDIX CK}
 C. COMSUB<RON/GRU NO.> MSG TO TYCOM IAW REF A PROVIDING STATUS OF MATERIAL
 CONDITION CERTIFICATION SUBSEQUENT TO FAST CRUISE. {APPENDIX CH}

D. COMSUB<LANT/PAC> MSG TO CO, USS <SHIP NAME/HULL NO.> IAW REF A GRANTING PERMISSION TO PROCEED ON SEA TRIALS LISTING ANY OPERATIONAL RESTRICTIONS. {APPENDIX CF}

4. USS <SHIP NAME/HULL NO.> SEA TRIALS WILL BE UNDER OPCON OF <SUBOPAUTH>.

5. CO, USS <SHIP NAME/HULL NO.> IS REQUESTED TO PROVIDE SEA TRIAL SITREPS AT INTERVALS OF 24 HRS OR LESS AND IDENTIFY ITEMS MANDATORY FOR CORRECTION PRIOR TO COMPLETION OF <TYPE AVAILABILITY>. {APPENDIX F}

6. IN THE EVENT SEA TRIALS ARE ABORTED OR CORRECTIVE ACTIONS FOR SEA TRIAL DEFICIENCIES REQUIRE AN ADDITIONAL DEEP DIVE, TYCOM WILL RELEASE ANOTHER PREREQUISITES COMPLETION MESSAGE PRIOR TO THE FOLLOW-ON SEA TRIALS. {APPENDIX CL}

7. FOLLOWING REPORTS AND AUTHORIZATIONS ARE PREREQUISITES TO CONDUCT OF SUBMERGED OPERATIONS AFTER <TYPE AVAILABILITY> COMPLETION:

A. <SUPERVISING AUTHORITY> MSG TO NAVSEA IAW REF B REPORTING SUBSAFE MATERIAL CONDITION TO SUPPORT URO. {REFERENCE B, APPENDIX B.3.8}

B. NAVSEA TO TYCOM MSG IAW REF B CERTIFYING MATERIAL CONDITION OF USS <SHIP NAME/HULL NO.> SATISFACTORY FOR UNRESTRICTED OPERATIONS TO DESIGN TEST DEPTH. {REFERENCE B, APPENDIX B.3.9}

C. COMSUB<RON/GRU NO.> MSG TO TYCOM IAW REF A REPORTING MATERIAL CONDITION OF SHIP AND URO MRC STATUS SUBSEQUENT TO SEA TRIALS. {APPENDIX CI}

D. TYCOM MSG TO CO, USS <SHIP NAME/HULL NO.> IAW REF B AUTHORIZING CONDUCT OF UNRESTRICTED OPERATIONS TO DESIGN TEST DEPTH. {APPENDIX CG}//

BT

NOTE: MESSAGES LISTED IN PARAGRAPHS 2 THROUGH 6 OF THIS APPENDIX SHOULD BE ASSIGNED APPROPRIATE PRECEDENCE AND PARALLELED BY TELEPHONE TO ACTION ADDEES CITING DATE-LINE GROUP OF FORTHCOMING MESSAGES. ALL ADDEES OF THIS MESSAGE ARE TO BE INCLUDED AS ADDEES ON THE MESSAGES LISTED IN PARAGRAPHS 2 THROUGH 6 OF THIS APPENDIX.

NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND CURRENT PLAD IS UTILIZED.

APPENDIX CG

SAMPLE TYCOM MESSAGE TO SHIP CONCERNING URO FOR INDUSTRIAL ACTIVITY
AVAILABILITIES GREATER THAN SIX MONTHS IN DURATION

(SUBMARINES ONLY)

FM COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 TO USS <SHIP NAME>//
 INFO CNO WASHINGTON DC//
 COMNAVSEASYS COM WASHINGTON DC//
 <LANT/PAC>FLT<NORFOLK VA/PEARL HARBOR HI>//
 <DIRSSP WASHINGTON DC FOR SSBN>//
 COMSUBGRU <NO.>//
 COMSUBBRON <NO.>//
 <SUPERVISING AUTHORITY>//
 BT
 UNCLAS //N09094//
 MSGID/GENADMIN/COMSUB<LANT/PAC>//
 SUBJ/(SUBS) UNRESTRICTED OPERATION OF USS <SHIP NAME/HULL NO.>//
 REF/A/MSG/COMNAVSEASYS COM/<DTG>// {B.3.9}
 REF/B/MSG/ISIC/<DTG>//
 REF/C/DOC/NAVSEA 0924-062-0010//
 REF/D/DOC/COMSUB<LANT/PAC>NOTE C3120//
 NARR/REF A IS NAVSEA URO MSG FOR USS <SHIP NAME/HULL NO.>. REF B IS ISIC SEA TRIAL
 MATERIAL CERTIFICATION MSG FOR USS <SHIP NAME/HULL NO.>. REF C IS THE SUBSAFE
 REQUIREMENTS MANUAL. REF D CONTAINS TYCOM AUTHORIZED SUBMARINE OPERATING AND
 TEST DEPTHS.//
 RMKS/1. REF A CERTIFIED THE SUBSAFE MATERIAL CONDITION OF THOSE PARTS OF USS <SHIP
 NAME/HULL NO.> INSTALLED, REPAIRED, AND/OR TESTED BY THE SHIPYARD IS SATISFACTORY AND
 RECOMMENDED THAT USS <SHIP NAME/HULL NO.> BE AUTHORIZED TO CONDUCT UNRESTRICTED
 OPERATIONS TO TEST DEPTH.
 2. IAW REF B <TYCOM> CONFIRMS THAT CERTIFICATION OF THE REMAINDER OF ITEMS NOT
 COVERED BY REF A WITHIN THE SUBSAFE CERTIFICATION BOUNDARY HAS BEEN SUSTAINED.
 ACCORDINGLY, USS <SHIP NAME/HULL NO.> IS AUTHORIZED TO CONDUCT OPERATIONS TO
 <SPECIFIED> DEPTH, SUBJECT TO THE FOLLOWING RESTRICTIONS: <list restrictions if they exist or state
 "NONE">.
 3. CONTINUED CERTIFICATION FOR OPERATIONS TO TEST DEPTH IS SUBJECT TO COMPLIANCE
 WITH REF C. URO MRC PERIODICITIES COMMENCE ON <DATE>.
 4. THIS MESSAGE REMAINS IN EFFECT UNTIL INCLUDED IN A FUTURE REVISION OF REF D.//
 BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND
 CURRENT PLAD IS UTILIZED.**

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APPENDIX CH

**SAMPLE ISIC MESSAGE TO TYCOM CONCERNING
MATERIAL CERTIFICATION PRIOR TO SEA TRIALS FOR INDUSTRIAL ACTIVITY
AVAILABILITIES GREATER THAN SIX MONTHS IN DURATION**

(SUBMARINES ONLY)

FM COMSUB<RON/GRU NO.>//
 TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 INFO COMSUBRON ELEVEN//
 COMSUBGRU <NO.>//
 USS <SHIP NAME>//
 BT
 UNCLAS //N09094//
 GENADMIN/COMSUB<RON/GRU NO.>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.> MATERIAL CERTIFICATION/ READINESS FOR SEA TRIALS//
 REF/A/RMG/COMSUB<LANT/PAC><DTG>// { APPENDIX CD}
 REF/B/DOC/COMUSFLTFORCOM/<DATE>//
 REF/C/RMG/COMSUB<RON/GRU NO.><DTG>/NOTAL// { APPENDIX CB}
 REF/D/DOC/NAVSEA /<DATE>//
 NARR/REF A IS TYCOM MSG TO USS <SHIP'S NAME/HULL NO.> ON COMPLETION PREREQUISITES FOR
 AVAILABILITIES GREATER THAN SIX MONTHS. REF B IS COMUSFLTFORCOMINST 4790.3, JOINT
 FLEET MAINTENANCE MANUAL, VOLUME II. REF C IS COMSUB<RON/GRU NO.> MSG TO TYCOM ON
 CREW CERT. REF D IS NAVSEA 0924-062-0010, SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS
 MANUAL.
 RMKS/1. IAW REFS A AND B, THIS MSG CERTIFIES THAT NO MANDATORY DEFICIENCIES FOR SEA
 TRIALS HAVE BEEN IDENTIFIED. THERE HAVE BEEN NO RECS OPENED AND NO SUBSAFE
 DEPARTURES FROM SPECIFICATION PROCESSED SINCE THE START OF FAST CRUISE. <OR, REPORT
 ANY MANDATORY DEFICIENCIES DISCOVERED WITH CORRECTIVE ACTION, AND IF RECS AND/OR DEPARTURES FROM
 SPECIFICATIONS WERE PROCESSED SINCE THE START OF FAST CRUISE, REPORT ALL RECS OPENED SINCE THE START OF
 FAST CRUISE ARE CLOSED AND/OR ALL SUBSAFE DEPARTURES FROM SPECIFICATIONS PROCESSED SINCE THE START OF
 FAST CRUISE ARE RESOLVED ^(NOTE 1.)>
 2. THERE ARE NO SUBSAFE DEPARTURES FROM SPECIFICATIONS WITH CONDITIONS WHICH
 HAVE NOT BEEN SATISFIED. THE FOLLOWING ADDITIONAL DEPARTURES FROM SPECIFICATIONS
 WERE GENERATED SUBSEQUENT TO REF C.
DEPARTURE NO. TYPE SYSTEM/COMPONENT RESTRICTION (IF ANY)
 A.
 B.
 3. REQUEST PERMISSION TO COMMENCE SEA TRIALS. CO <SHIP NAME> CONCURS.//
 BT

**NOTE 1: 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 FOR FAST CRUISE MESSAGE.**

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND
CURRENT PLAD IS UTILIZED.**

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APPENDIX CI

**SAMPLE ISIC MESSAGE TO TYCOM CONCERNING MATERIAL CERTIFICATION UPON
COMPLETION OF SEA TRIALS FOR INDUSTRIAL ACTIVITY AVAILABILITIES GREATER THAN
SIX MONTHS IN DURATION**

(SUBMARINES ONLY)

FM COMSUB<RON/GRU NO.>//
 TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 INFO COMSUBRON ELEVEN//
 COMSUBGRU<NO.>//
 USS <SHIP NAME>//
 BT
 UNCLAS //N09094//
 GENADMIN/COMSUB<RON/GRU NO.>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.>MATERIAL CERTIFICATION//
 REF/A/MSG/<SUPERVISING AUTHORITY>//
 REF/B/MSG/<TYCOM>/<DTG>/{APPENDIX CD}
 REF/C/DOC/COMUSFLTFORCOM/<DATE>//
 REF/D/DOC/NAVSEA/<DATE>//
 REF/E/DOC/NAVSEA/<DATE OF CURRENT REVISION>//
 NARR/REF A IS <SUPERVISING AUTHORITY> REPORT CONCERNING SUBSAFE MATERIAL CONDITION TO
 SUPPORT URO. REF B IS THE TYCOM MSG TO USS <SHIP'S NAME/HULL NO.> ON COMPLETION
 PREREQUISITES FOR AVAILABILITIES GREATER THAN SIX MONTHS. REF C IS
 COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL, VOLUME II. REF D IS
 NAVSEA 0924-062-0010, SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL. REF E IS
 NAVSEA, URO REQUIREMENTS MANUAL.
 RMKS/1. IAW REF A THE <SUPERVISING AUTHORITY> REPORTED THE SATISFACTORY COMPLETION OF
 ALL SEA TRIALS, COMPLETION OF CONTROLLED DIVES, AND THE RESOLUTION OF MANDATORY
 SEA TRIAL DEFICIENCIES. IAW WITH REFS B AND C THERE IS NO DEFERRED SUBSAFE WORK AND
 THERE ARE NO SUBSAFE DEPARTURES FROM SPECIFICATIONS WITH CONDITIONS WHICH HAVE
 NOT BEEN SATISFIED. <OR, REPORT ANY FORCES AFLOAT ASSIGNED DEFERRED SUBSAFE WORK AND/OR
 OUTSTANDING CONDITIONAL DEPARTURES FORM SPECIFICATIONS INCLUDING DEPARTURE NUMBER, SHORT TITLE AND
 CALCULATED COMPLETION DATE.>
 2. THIS MESSAGE CERTIFIES THAT ALL WORK ACCOMPLISHED BY FORCES AFLOAT WITHIN THE
 SUBSAFE CERTIFICATION BOUNDARY SINCE CERTIFICATION FOR SEA TRIALS HAS BEEN
 SATISFACTORILY COMPLETED AND RETESTED IAW REF C. CERTIFICATION REQUIREMENTS OF
 REF D HAVE BEEN SUSTAINED FOR THE REMAINDER OF THE SUBSAFE CERTIFICATION
 BOUNDARY. <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 FOR FAST CRUISE MESSAGE.>
 3. ALL URO MRC MANDATORY TESTS/INSPECTIONS SPECIFIED IN REF E HAVE BEEN
 ACCOMPLISHED OR VERIFIED TO BE WITHIN THE REQUIRED PERIODICITY.//
 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 FOR FAST CRUISE MESSAGE.**

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND
CURRENT PLAD IS UTILIZED.**

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APPENDIX CL

**SAMPLE TYCOM MESSAGE CONCERNING RESUMPTION OF
SEA TRIALS COMPLETION PREREQUISITES FOR INDUSTRIAL ACTIVITY AVAILABILITIES
GREATER THAN SIX MONTHS DURATION**

(SUBMARINES ONLY)

FM COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 TO COMNAVSEASYS COM WASHINGTON DC// {for SSN21 only}
 COMSUB<RON/GRU NO.>//
 <SUPERVISING AUTHORITY>//<CODES>//
 USS <SHIP NAME>//
 INFO CNO WASHINGTON DC//
 COM<LANT/PAC>FLT <NORFOLK VA/PEARL HARBOR HI>//
 DIRSSP WASHINGTON DC// {SSBN/SSGN Only}
 <SUBOPAUTH>//<CODES>//
 COMSUBRON ELEVEN//
 COMSUBGRU <NO.>//
 BT
 UNCLAS //N09094
 MSGID/GENADMIN/<TYCOM>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.> SEA TRIAL RESUMPTION AND INDUSTRIAL ACTIVITY
 AVAILABILITY COMPLETION PREREQUISITES//
 REF/A/RMG/COMSUB<LANT/PAC> /<DTG>/{APPENDIX CD}
 REF/B/DOC/COMUSFLTFORCOM/<DATE>//
 REF/C/DOC/NAVSEA /<DATE>//
 NARR/REF A IS TYCOM MSG TO USS <SHIP'S NAME/HULL NO.> ON COMPLETION PREREQUISITES FOR
 AVAILABILITIES GREATER THAN SIX MONTHS. REF B IS COMUSFLTFORCOMINST 4790.3, JOINT
 FLEET MAINTENANCE MANUAL, VOLUME II. REF C IS NAVSEA 0924-062-0010, SUBMARINE SAFETY
 (SUBSAFE) REQUIREMENTS MANUAL.
 RMKS/1. REF A SPECIFIED PREREQUISITES IN SUPPORT OF USS <SHIP NAME/HULL NO.>FAST CRUISE,
 INITIAL INDUSTRIAL ACTIVITY AVAILABILITY SEA TRIALS AND COMPLETION. THESE TRIALS
 WERE ACCOMPLISHED AND <INDUSTRIAL ACTIVITY NAME> HAS CONDUCTED REPAIRS TO USS <SHIP
 NAME> REQUIRING ADDITIONAL SEA TRIALS. THIS MSG PROVIDES TO ALCON REPORTS AND
 AUTHORIZATIONS PREREQUISITE TO COMMENCING ADDITIONAL SEA TRIALS:
 A. SUPERVISING AUTHORITY SHALL DRAFT REVISED SEA TRIAL AGENDA TO SUPPORT
 THE FOLLOW-ON TRIALS. THIS AGENDA SHALL BE FORMALLY APPROVED BY COMSUB<RON/GRU
 NO.> (ACTING FOR TYCOM) AND CONCURRED IN BY NAVSEA PRIOR TO CONDUCT OF SEA TRIALS.
 B. SUPERVISING AUTHORITY MSG TO NAVSEA, INFO TYCOM, THAT MATERIAL CONDI-
 TION OF SYSTEMS AND EQUIPMENTS INSTALLED, REPAIRED AND/OR TESTED BY <INDUSTRIAL
 ACTIVITY> IS SATISFACTORY FOR CONDUCT OF FOLLOW-ON SEA TRIALS. AS A MINIMUM, REPORT
 SHOULD STATE STATUS OF ALL INCOMPLETE CAT 1A AUDIT ITEMS AND THAT ALL WORK HAS
 BEEN PERFORMED IAW REF C. {REFERENCE C, APPENDIX B.3.5}
 C. USS <SHIP NAME/HULL NO.> MSG TO TYCOM STATING THAT CREW AND SHIP ARE READY
 FOR FOLLOW-ON SEA TRIALS LISTING EXCEPTIONS. {APPENDIX CN}
 D. ISIC MSG TO TYCOM THAT THE MATERIAL CONDITION OF THOSE SUBSAFE
 CERTIFICATION BOUNDARY PARTS OF USS <SHIP NAME> INSTALLED, REPAIRED AND/OR TESTED BY
 FORCES AFLOAT {Ship's Force and/or FMA} ARE SATISFACTORY IAW REF B FOR FOLLOW-ON SEA
 TRIALS. {APPENDIX CM}
 E. NAVSEA MSG TO TYCOM RECERTIFYING MATERIAL CONDITION OF USS <SHIP NAME/HULL
 NO.> FOR SPECIFIC TRIAL OPERATING DEPTH. {REFERENCE B, APPENDIX B.3.6}
 F. TYCOM MSG TO USS <SHIP NAME/HULL NO.> GRANTING PERMISSION TO CONDUCT
 FOLLOW-ON SEA TRIALS. {APPENDIX CO}
 2. USS <SHIP NAME/HULL NO.>SEA TRIALS WILL BE UNDER OPCON OF (_____).

3. CO, USS <SHIP NAME/HULL NO.> IS REQUESTED TO PROVIDE SEA TRIAL SITREPS AT INTERVALS OF 24 HRS OR LESS AND IDENTIFY ITEMS MANDATORY FOR CORRECTION PRIOR TO COMPLETION OF INDUSTRIAL AVAILABILITY.

4. FOLLOWING REPORTS AND AUTHORIZATIONS ARE PREREQUISITES TO INDUSTRIAL AVAILABILITY COMPLETION:

A. SUPERVISING AUTHORITY MSG TO NAVSEA AND TYCOM IAW REF C REPORTING COMPLETION OF AUTHORIZED WORK AND CAT 1A AUDIT ITEMS LISTING EXCEPTIONS. MSG SHOULD RECOMMEND <TYPE OF AVAILABILITY> COMPLETION AND LIST PROPOSED GUARANTEE WORK ITEMS.

B. NAVSEA MSG TO TYCOM IAW REF C CERTIFYING MATERIAL CONDITION OF USS <SHIP NAME/HULL NO.> IS SATISFACTORY FOR UNRESTRICTED OPERATIONS TO DESIGN TEST DEPTH.

C. ISIC MSG TO TYCOM AND USS <SHIP NAME/HULL NO.> REPORTING MATERIAL CONDITION OF SHIP AND URO MRC STATUS SUBSEQUENT TO SEA TRIALS. { APPENDIX CI }

D. TYCOM MSG TO CO, USS <SHIP NAME/HULL NO.> IAW REF C AUTHORIZING CONDUCT OF UNRESTRICTED OPERATIONS TO DESIGN TEST DEPTH. { APPENDIX CG }

5. MSGS LISTED IN PARA 1 THROUGH 4 ABOVE SHOULD BE ASSIGNED APPROPRIATE PRECEDENCE AND PARALLELED BY PHONCON TO ACTION ADDEES CITING DTG OF FORTHCOMING MSG. ALL ADDEES OF THIS MSG TO BE INCLUDED AS ADDEES ON MSG LISTED IN PARA 1 THROUGH 4 ABOVE.//

BT

NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND CURRENT PLAD IS UTILIZED.

APPENDIX CM

**SAMPLE ISIC MESSAGE TO TYCOM CONCERNING
MATERIAL CERTIFICATION FOR FOLLOW-ON SEA TRIALS IN CASES WHERE A PREVIOUS SEA
TRIAL WAS ABORTED OR CORRECTIVE ACTIONS FOR SEA TRIAL DEFICIENCIES REQUIRE AN
ADDITIONAL DEEP DIVE FOR INDUSTRIAL ACTIVITY AVAILABILITIES GREATER THAN SIX
MONTHS IN DURATION**

(SUBMARINES ONLY)

FM COMSUB<RON/GRU NO.>//
 TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 INFO COMSUBRON ELEVEN//
 COMSUBGRU <NO.>//
 USS <SHIP NAME>//
 BT
 UNCLAS //N09094//
 MSGID//GENADMIN/COMSUB<RON/GRU NO.>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.>MATERIAL CERTIFICATION/ READINESS FOR <FOLLOW-ON^(NOTE 1)>
 SEA TRIALS//
 REF/A/RMG/TYCOM/<DTG>//{APPENDIX CL}
 REF/B/DOC/COMUSFLTFORCOM/<DATE>//
 REF/C/RMG/COMSUB<RON/GRU NO.>/<DTG>/NOTAL//{APPENDIX CH}
 REF/D/DOC/NAVSEA /<DATE>//
 REF/E/DOC/NAVSEA/<DATE OF CURRENT REVISION>//
 NARR/REF A IS TYCOM MSG TO USS <SHIP'S NAME/HULL NO.> ON RESUMPTION OF SEA TRIAL
 PREREQUISITES FOR AVAILABILITIES GREATER THAN SIX MONTHS. REF B IS
 COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL, VOLUME II. REF C IS
 COMSUB<RON/GRU NO.> MSG TO TYCOM ON MATERIAL STATUS PRIOR TO INITIAL SEA TRIALS. REF
 D IS NAVSEA 0924-062-0010, SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL. REF E IS
 NAVSEA URO REQUIREMENTS MANUAL.//
 RMKS/1. IAW REFS A AND B, THIS MSG CERTIFIES THAT NO MANDATORY DEFICIENCIES FOR
 <FOLLOW-ON^(NOTE 1)> SEA TRIALS HAVE BEEN IDENTIFIED. THERE HAVE BEEN NO RECS OPENED AND
 NO SUBSAFE DEPARTURES FROM SPECIFICATIONS PROCESSED SINCE THE START OF THE INITIAL
 SEA TRIALS <OR, REPORT ANY MANDATORY DEFICIENCIES DISCOVERED WITH CORRECTIVE ACTION, AND IF RECS
 AND/OR DEPARTURES FROM SPECIFICATIONS WERE PROCESSED SINCE THE START OF THE INITIAL SEA TRIALS, REPORT
 ALL RECS OPENED SINCE THE START OF INITIAL SEA TRIALS ARE CLOSED AND/OR ALL SUBSAFE DEPARTURES FROM
 SPECIFICATIONS PROCESSED SINCE THE START OF SEA TRIALS ARE RESOLVED^{NOTE 2}>.
 2. THERE ARE NO SUBSAFE DEPARTURES FROM SPECIFICATIONS WITH CONDITIONS WHICH
 HAVE NOT BEEN SATISFIED. THE FOLLOWING DEPARTURES FROM SPECIFICATIONS ARE
 CURRENTLY OUTSTANDING:
DEPARTURE NO. TYPE SYSTEM/COMPONENT RESTRICTION (IF ANY)
 A.
 B.
 3. ALL URO MRC MANDATORY TESTS/INSPECTIONS SPECIFIED IN REF E HAVE BEEN
 ACCOMPLISHED OR VERIFIED TO BE WITHIN THE REQUIRED PERIODICITY.//
 BT

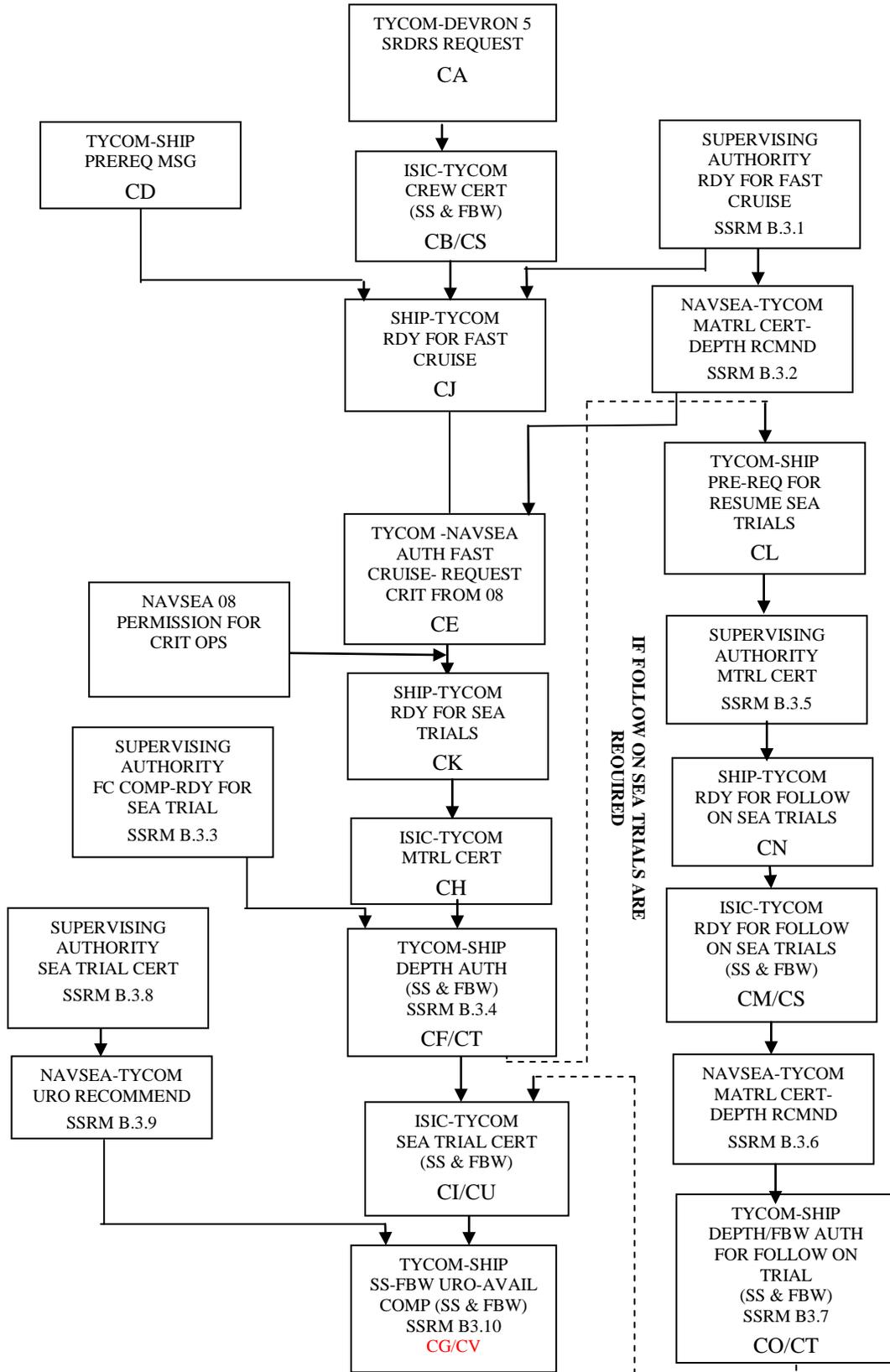
NOTE 1: UPCOMING TRIAL WHICH IS SUBJECT OF THIS CERTIFICATION (E.G., SECOND SEA TRIAL, ETC.).

NOTE 2: 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 FOR FAST CRUISE MESSAGE.

NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND CURRENT PLAD IS UTILIZED.

APPENDIX CR

Message Scenario for CNO Availabilities of Greater than Six Months in Duration



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VOLUME II**PART I****CHAPTER 4****FLEET MAINTENANCE AVAILABILITIES**REFERENCES.

- (a) COMSUBLANT/COMSUBPAC C3500.21 (Ser) - SSN Fleet Response Training Plan (FRTP) Management
- (b) COMSUBFORINST 3500.22 - SSGN Operational Cycle, Training and Certification Management
- (c) NAVSEAINST 4790.8/OPNAVINST 4790.4 - Ships' Maintenance and Material Management (3-M) Manual
- (d) NAVSEA S9213-33-MMA-000 - Radiological Controls for Ships
- (e) NAVSEAINST C9210.30 - Procedure for Administration of Nuclear Reactor Plant Preventive Maintenance and Tender Nuclear Support Facilities Preventive Maintenance on Ships
- (f) OPNAVINST 3120.33 - Submarine Extended Operating Cycle (SEOC) Program
- (g) COMNAVSUBFOR OPORD 2000
- (h) OPNAVINST C3000.5 - Operation of Naval Nuclear Powered Ships
- (i) NAVSEA S9086-DA-STM-000 - NSTM Chapter 100 (Hull Structures)
- (j) NAVSEA S9086-C4-STM-000 - NSTM Chapter 094 (Trials)
- (k) COMNAVSUBFORINST 5400.25 - Standard Submarine Supply Department Organization and Regulations Manual
- (l) COMNAVSUBFORINST 5400.29 - Standard Submarine Navigation/Operations Department Organization and Regulations Manual
- (m) COMNAVSUBFORINST 5400.40 - Standard Submarine Combat Systems Department Organization and Regulations Manual (SSN)
- (n) COMNAVSUBFORINST 5400.41 - Standard Submarine SSBN 726 Class Weapons Department Organization and Regulations Manual
- (o) COMNAVSUBFORINST 5400.47 - Standard Submarine Combat Systems Department Organization and Regulations Manual (SSGN)
- (p) NAVSEA 0924-062-0010 - Submarine Safety (SUBSAFE) Requirements Manual
- (q) OPNAVINST 9110.1 - Policy Concerning Submarine Test and Operating Depths
- (r) OPNAVINST C9210.2 - Engineering Department Manual for Naval Nuclear Propulsion Plants
- (s) NAVSEAINST C9094.2 - Submarine Valve Operation Requirements for Builders and Post-Overhaul Sea Trial Test Dives
- (t) NAVSEA 0989-LP-043-0000 - Commissioned Surface Ship General Reactor Plant Overhaul and Repair Specification
- (u) OPNAVINST 4700.7 - Maintenance Policy for U.S. Naval Ships
- (v) COMLANTFLTINST 5400.2 - U.S. Atlantic Fleet Regulations
- (w) COMPACFLTINST 5400.3 - U.S. Pacific Fleet Regulations
- (x) NAVSEAINST C9210.4 - Changes, Repairs and Maintenance to Nuclear Powered Ships

LISTING OF APPENDICES.

- A Sample Message to TYCOM from ISIC Requesting Concurrence to Defer, Delete or Shorten a Scheduled CMAV
- B Sample TYCOM Message Concerning Escort Services for IDD or PIRA Availabilities
- C Suggested Format for a Message Work Candidate
- D Business Case Analysis Tool
- E1 Availability Key Event List
- E2 CMAV Key Event Codes
- F Availability Planning Message (Submarines Only)

- G Final 100 Hours for Scheduled CMAV
- H Availability Milestone Schedule (Submarines Only)
- I Availability Planning Response Message (Submarines Only)
- J Major Trial and Inspection Milestones for IDD and PIRA Availabilities
- K Sample ISIC Message to TYCOM Concerning Crew Certification and Material Condition for Fast Cruise and Sea Trials for IDD or PIRA Availabilities
- L Sample Ship Message to ISIC and TYCOM Concerning Material Certification Upon Completion of Sea Trials for IDD or PIRA Availabilities
- M Dock Trials Guidelines for IDD or PIRA Availabilities
- N Fast Cruise Requirements for IDD or PIRA Availabilities
- O Sample ISIC Message to TYCOM Concerning Final Material Certification Prior to Sea Trials for IDD or PIRA Availabilities
- P Sample TYCOM Message to Ship Concerning Sea Trials Depth Authorization for IDD or PIRA Availabilities
- Q Minimum Sea Trials Requirements for IDD or PIRA Availabilities
- R Submarine Sea Trial Situation Report (SITREP)
- S Sample TYCOM Message To Ship Concerning URO for IDD or PIRA Availabilities
- T Sample Ship Message to TYCOM Concerning Readiness for Follow-On Sea Trials for IDD or PIRA Availabilities
- U Sample ISIC Message to TYCOM Concerning Material Certification for Follow-On Sea Trials in Cases Where a Previous Sea Trial was Aborted or Corrective Actions for Sea Trial Deficiencies Require an Additional Deep Dive for IDD or PIRA Availabilities
- V Sample TYCOM Message to Ship Concerning Follow-On Sea Trials Depth Authorization for IDD or PIRA Availabilities
- W Sample Ship Message to ISIC Concerning Readiness for Fast Cruise for IDD or PIRA Availabilities
- X Sample ISIC Message to Ship Authorizing Commencement of Fast Cruise for IDD or PIRA Availabilities
- Y Sample Ship Message to ISIC and TYCOM Concerning Readiness for Sea Trials for IDD or PIRA Availabilities

4.1 PURPOSE. Provide guidance for the implementation of policies set forth in references (a) through (x) for Fleet Maintenance Availability planning, scheduling, and execution. Policy, procedures and guidance regarding utilization of Fleet Technical Assistance (FTA) program resources are contained in Volume VI, Chapter 2 of this manual.

4.2 DEFINITIONS.

4.2.1 Fleet Maintenance Activity. All government waterfront ship maintenance and modernization, activities, e.g., Regional Maintenance Centers, Naval Ship Repair Facilities, Naval Submarine Support Facilities, Naval Intermediate Maintenance Facilities, TRIDENT Refit Facilities, Weapons Repair Facilities, Naval Shipyards, tenders and other activities of that type responsible for the processing, screening and brokering, and execution of work candidates.

4.2.2 Lead Maintenance Activity. The single activity responsible for integrating all maintenance and modernization on US Naval ships during any type availability. The Lead Maintenance Activity (LMA) is the activity responsible for planning and coordinating the work of the Executing Activities in Continuous Maintenance (CM). The LMA may also be an Executing Activity.

4.2.3 Executing Activity. The public or private enterprise that is assigned or awarded the responsibility for accomplishing the actual production work to effect repairs or modernization to ships.

4.2.4 Business Case Analysis. A critical evaluation of late identified work, new work or growth work, based on the benefit of completing the work, the cost of the work to be performed including premiums, available work capacity and material resources, the risk to other work and schedule impact.

4.2.5 Planning Board for Maintenance. The regularly scheduled meeting of the ship's Maintenance Team, as required by Chapter II-II-1 and defined in Chapter VI-41 of this manual, to discuss ship wide maintenance issues. Chaired by the Ashore Ship's Maintenance Manager, this forum provides a review of current planned off-ship and organizational maintenance, Current Ship's Maintenance Project (CSMP) quality and accuracy, future maintenance and modernization planning, and fiscal concerns. The objective is to ensure clarity of intent for both the ship's efforts and the shore infrastructure with respect to total ship maintenance, operational schedules, and other concerns affecting ship material readiness.

4.2.6 Maintenance and Modernization Business Plan. The Maintenance and Modernization Business Plan (MMBP), located in Volume VI, Chapter 33 of this manual, prepared six to eight months in advance of the fiscal year, is the ship's plan for maintenance and modernization effort for a fiscal year. The ship's maintenance team prepares the plan. The Maintenance Team applies its knowledge of the ship's material condition and Type Commander (TYCOM) scheduled modernization and Chief of Naval Operations (CNO) availabilities in the prospective operating cycle to develop the budget recommendation for funding maintenance requirements. The plan is based on an assessment of the ship's anticipated material condition, the validated CSMP including Class Maintenance Plan (CMP) applicable tasks, planned fleet alterations, outstanding Departures from Specifications (DFS), Casualty Reports (CASREP) and Board of Inspection and Survey material discrepancies. The MMBP shall address funding required for CNO availabilities advanced planning and CM opportunities.

4.2.7 Immediate Superior In Command. In the context of this chapter the TYCOM may act in support of or in the place of the Immediate Superior In Command (ISIC) for maintenance.

4.3 FLEET MAINTENANCE AVAILABILITIES. Fleet maintenance availabilities consist of the following:

4.3.1 Ship's Force Upkeep. A Ship's Force Upkeep is a scheduled period in which the ship is principally engaged in self-maintenance.

4.3.2 Scheduled Continuous Maintenance Availability. A Scheduled Continuous Maintenance Availability (CMAV) is a scheduled availability normally 2 to 6 weeks in duration and normally scheduled once per non-deployed quarter during a period when the ship will be in port.

NOTE: **SUBMARINE MAINTENANCE MODERNIZATION AVAILABILITIES MAY BE 2 TO 6 MONTHS LONG. THESE AVAILABILITIES CAN BE MANAGED SEPARATE FROM THE REQUIRED MAINTENANCE AVAILABILITIES OR INCORPORATED IN THE REQUIRED MAINTENANCE PERIODS AT THE DISCRETION OF THE PLANNING BOARD FOR MAINTENANCE (PB4M) AND ISIC. MODERNIZATION AVAILABILITIES WILL INCLUDE KEY EVENTS AND CERTIFICATION MILESTONES PRIOR TO AT-SEA OPERATIONS AND MAY REQUIRE SEA TRIALS AS APPROVED BY THE PB4M AND ISIC IN ACCORDANCE WITH THIS CHAPTER.**

- a. Submarines - One regular CMAV every 3 to 4 months, of which a minimum of 21 days are dedicated to production work. SSN maintenance availabilities required to support the Fleet Response Plan will be scheduled in accordance with reference (a). For SSBNs, one 28 day CMAV per each patrol cycle. For SSGNs the maintenance schedule for a 15-18 month operating cycle will be scheduled in accordance with reference (b) to include three forward deployed 21 day CMAVs. The Scheduled Continuous Availability requirement is mandatory. It cannot be deferred, deleted or shortened without TYCOM (N43) concurrence. Appendix A of this chapter contains a sample message to TYCOM from ISIC requesting concurrence to defer, delete or shorten a scheduled CMAV.
- b. Carriers - As Scheduled.
- c. Surface Ships - At a minimum, one 3-week CMAV per non-deployed quarter.

4.3.3 Unscheduled Continuous Maintenance Availability. The Unscheduled CM Availability is a single yearlong availability, for the period 01 October through 30 September, scheduled for each ship every fiscal year. The Year Long Unscheduled CM Availability is for the scheduling and completion of non-emergent work items that are not accomplished during any other schedule availability.

4.3.4 Emergent Availability. The Emergent Availability (EM) is designed for work of such an urgent nature that the heightened risk of disruption and paying of premiums is accepted and planning horizons are shortened.

4.4 COMMON ELEMENTS.

4.4.1 Responsibilities. Responsibilities regarding maintenance policies and procedures for Fleet maintenance availabilities are as follows:

4.4.1.1 Immediate Superior In Command.

- a. Coordinate scheduling of availabilities at LMAs with TYCOMs.
 - (1) Monitor corrective maintenance action taken by LMA/Executing Activities.
 - (2) Schedule and conduct inspections of Forces Afloat.
 - (3) Monitor progress of availabilities.
- b. Initiate the required budgetary actions for funding availabilities.
- c. Ensure all authorized alterations are identified by priority based on material availability.
- d. Identify the routine package to be accomplished based on Master Specification Catalog/Master Job Catalog (MJC) review (as appropriate).
- e. Review results of scheduled monitoring inspections and testing that could result in significant new work or could impact scheduled work.
- f. Identify required special evolutions associated with availabilities in support of Pre-Overseas Movement preparations and pre-availability test and inspection requirements.
- g. Issue availability planning message.
- h. (Submarines only) Ensure all Periodic Maintenance Requirement (PMR) and Unrestricted Operation Maintenance Requirement Card maintenance actions intended for accomplishment during availability are identified.
- i. (Submarines only) Send a Sea Trials Support Services message to specify Deep Submergence Rescue System "modified-alert" requirements in accordance with Appendix B of this chapter.
- j. (Submarines only) Provide updated Sea Trials status by telephone to Commander, Submarine Squadron (COMSUBRON) ELEVEN if Deep Submergence Rescue System "modified-alert" support services are in use.
- k. (Submarines only) Identify key events for each CMAV during the pre-arrival conference. Determine if Fast Cruise and/or Sea Trails is/are required based on the scope of the availability work, alterations and modernization. The ISIC will task the PB4M/Regional Maintenance Center (RMC) to submit the Fast Cruise and/or Sea Trials agendas for ISIC approval in accordance with paragraph 4.6.3.3 of this chapter.
- l. (Submarines only) Monitor Ship and Executing Activity preparations to transition to a CMAV period and make final report that the ship has transitioned to the CMAV period after the completion of the arrival conference to the Group and TYCOM.

4.4.1.2 Regional Maintenance Center/Lead Maintenance Activity. (As appropriate)

- a. Develop recommended Key Event schedule and present to the ISIC/Ship's Force.
- b. Conduct ship checks, plan work candidates and order required material.
- c. Recommend rejected work candidates to the RMC ISIC, as applicable.
- d. Develop strategy using the guidance found in Volume VI, Chapter 9 of this manual to accomplish calibration of systems, gages, instruments and tools in support of Ship's Force requested work and the availability milestones.
- e. Identify and order Long Lead Time Material (LLTM).
- f. Review the Availability Work Package, write Formal Work Package (FWP)/Technical Work Documents (TWD), identify critical jobs and develop an Integrated Work Schedule (IWS) to aid in tracking and coordination of all work.
- g. Conduct the Work Package Execution Review (WPER).

- b. CM.
- c. EM Availabilities.

4.4.6 Late Work and Scope Control.

- a. The complete LMA Availability work package is defined and agreed upon at the WPER. To provide for adequate time to plan the work and acquire the necessary materials in an efficient manner, the work cut-off date should not exceed Arrival minus 30 days. A minimum of 30 days will be allotted for work brokered to I-Level activities. This will allow a WPER to take place at A-21. If these minimum thresholds cannot be complied with, the Maintenance Team will complete a Business Case Analysis in accordance with paragraph 4.4.6.b. of this chapter.
- b. The Maintenance Team will perform a Business Case Analysis as a method of identifying risks associated with adding work after A-30. The Business Case Analysis is described in Appendix D of this chapter. Late work should not extend the availability completion date. The RMC/ISIC will take appropriate actions to make job tradeoffs, defer jobs to a subsequent availability or seek outside assistance to conduct the work.
- c. Non-mission essential late work may be accepted on a case by case basis. The ISIC will provide approval authority for all late work after establishing that the LMA can support the additional work load and the scope of work does not impact the ship's operational schedule or schedule of other operational units.

4.4.7 Memorandum of Agreement. For all Surface Force Ship and Aircraft Carrier availabilities not assigned to an FMA, a Memorandum of Agreement (MOA) will be issued. The purpose of the MOA is to define areas of responsibility for all activities involved with the availability. For all submarine availabilities involving maintenance within the Submarine Safety (SUBSAFE) boundary, a MOA will be issued.

4.4.8 Radiological Controls. Nuclear powered vessels are responsible to implement and ensure adherence to radiological controls in accordance with reference (d). Industrial activities authorized to perform nuclear maintenance are responsible to engineer appropriate radiological controls into assigned work.

4.4.9 Ship to Shop Material Control. Positive identification and control of ship to shop transfer of equipment and components is maintained through the use of a Ship to Shop tag. The Ship to Shop tag may also be used in conjunction with other methods specified by the Executing Activity or the LMA. Each Executing Activity shall make sure that positive control exists for those subcomponents of equipment and components received with a Ship to Shop tag attached. The procedure for using the Ship to Shop tag is provided in Volume V, Part I, Chapter 11 of this manual.

4.4.10 Shipchecks. The LMA or Executing Activity shall conduct ship checks, when the tended ship is available in order to support process milestones, to verify the scope of work, identify interference, obtain equipment technical data, identify shipping (rigging) paths, verify system/equipment configuration and obtain additional problem identification data from Ship's Force. Shipchecks shall be conducted as early in the planning phase as possible.

4.4.11 Lead Maintenance Activity Daily Production Meeting. This meeting is for the coordination of ongoing work for all availabilities. The LMA Repair Officer/Production Officer, or their designated representatives, will conduct a Daily Production Meeting for all ships in availabilities.

- a. Purpose. The primary purpose of the LMA Daily Production Meeting is to establish a joint Executing Activity/Ship's Force production plan and eliminate schedule conflicts that impact work for at least the next seven shifts (56 hours). It further tracks the current status of CJs. The results of this meeting are used to assess overall progress of the work, develop recovery plans when necessary and to ensure all the activities understand the production plan and support requirements during a minimum of the next seven shifts (56 hours).
- b. Execution. The Daily Production Meeting will be held as early in the day as practicable.
- c. Attendees. Representatives of the LMA Waterfront Operations, the Executing Activities, the tended ship, and LMA Supply or Fleet Logistics Center, as appropriate, shall attend this daily production meeting and participate in its agenda. Others may attend as requested by the LMA.

- d. Agenda. The following agenda will be used for the LMA Daily Production Meeting. Additional items may be added at the discretion of the Waterfront Operations Officer, Repair Officer or Production Officer.
 - (1) Discuss specific work scheduled to be accomplished and support required over the next seven shifts.
 - (2) Discuss projected site evolutions (ship moves, weapons moves, pier maintenance, or changes of command, etc.) which could impact production work.
 - (3) Discuss respective ship evolutions such as stores load or Fast Cruise that could impact production work.
 - (4) The Executing Activity brief on the current status of CJs on each ship.
 - (5) Review Safety of Ship Maintenance Item List, necessary safety precautions and their status.

4.4.12 Lead Maintenance Activity Progress Review. This review will be conducted weekly for surface force ships and submarines in CMAVs.

- a. Purpose. The primary purpose of the LMA progress review is to ascertain that CJs and Key Events are progressing satisfactorily for on time completion of the availability. The meeting shall also identify and resolve any issues, conflicts or differences since availability start or last review. These meetings may be conducted in conjunction with a ship's PB4M.
- b. Execution. This review shall be conducted by the Waterfront Operations, Repair Officer, Production Officer, or their representatives and be scheduled so as not to conflict with daily production meetings.
- c. Attendees. As a minimum the following shall attend this review.
 - (1) Waterfront Operations Officer, Repair Officer, or Production Officer.
 - (2) Ship Superintendent and designated Executing Activity representatives.
 - (3) Tended ship CO.
 - (4) Availability Coordinator and designated Ship representatives.
 - (5) ISIC/RMC designated representatives.
 - (6) Maintenance Support Team (MST) Officer In Charge (OIC) (if applicable).
- d. Agenda. As a minimum the following agenda shall be used for LMA progress review. Additional items may be added at the discretion of the Waterfront Operations Officer, Repair Officer, Production Officer, ship CO, or ISIC. Attendees shall be prepared to discuss their respective portions of the agenda.
 - (1) Specific work scheduled for accomplishment during the availability.
 - (2) Projected Executing Activity and ship evolutions which could impact production work on ship(s).
 - (3) Discuss current status of CJs and Key Events listed in Appendix E1 (Submarines Appendix E2).
 - (4) Heavily loaded Executing Activity work centers and impact on the availability.
 - (5) Status of funds, supplies and equipage funding.
 - (6) Status of outstanding DFS scheduled for correction during the availability.
 - (7) Outstanding high priority repair material status.
 - (8) Provide Automated Work Requests (AWR) or a list of completed work with applicable 3-M final action taken codes in accordance with reference (c).

- d. Alterations (Fleet Alterations, Program Alterations, Ship Changes and Strategic Systems Program Alterations, etc.). The RMC/ISIC will enter alterations on the ship's CSMP that the TYCOM has authorized for accomplishment. The Ship Maintenance Team/RMC/ISIC calls out alterations for a specific CMAV based on material availability and Executing Activity capacity as identified by the Executing Activity. Within funding constraints and TYCOM guidance, all alterations authorized on the TYCOM Alteration Management System (Submarine Force only)/Navy Modernization Process (NMP) are candidates for accomplishment during each CMAV.
- e. Work Routines. A set of standard routines from the MJC should be planned for every CMAV. The ISIC/RMC tailors each CMAV routine package to the needs of the ship by calling out additional routines to document periodic, interim dry docking, URO maintenance (as applicable), and calibration recall requirements, as appropriate.
- f. Planning availability. (Submarines only) A scheduled one week planning availability will normally be scheduled approximately four weeks prior to a scheduled regular CMAV. The purpose of the planning availability is to allow the LMA and other activities scheduled to perform maintenance during the regular CMAV to conduct ship checks and job scoping early enough to write required FWPs/TWDs, order material and develop a cohesive plan for the regular availability. Only underway limiting repairs should be accomplished during a planning availability. Paragraphs of 4.6.1 and all A-30 items from Appendix H of this chapter shall be addressed and focused on during the planning availability. The results of the planning availability directly feed into the WPER.

4.6.1.2 Scheduled Continuous Maintenance Availability Planning Functions. The Maintenance Team/RMC/ISIC will take the following actions in planning a CMAV. Surface Force Ships see Part II, Chapter 1 of this volume for maintenance validation, screening and brokering.

- a. Work Package Submission. Ensure that ships submit a CMAV work packages as scheduled in accordance with Appendix H of this chapter for submarines. The Surface Force Maintenance and Modernization Milestones are located in Part II, Chapter 2, Appendix D of this volume. Message work packages may be sent if the ship is not in port. This singular action has significant impact on the ability of both the RMC/ISIC and Executing Activity to properly plan for the CMAV, and determine potential impacts on other planned work.
- b. PMR/URO Review (Submarine only). Review PMR/URO requirements and ensure all maintenance actions intended for accomplishment during the CMAV are identified and entered in the CSMP. Using the PMR scheduling system as described in Volume VI, Chapter 24 of this manual, the ISIC will request that all applicable PMR work be added to the ship's CSMP when the SUBMEPP CD-ROM is received. This work is applicable if it is prescribed for the ship and is due in accordance with the associated schedule. PMR and URO work is mandatory. PMR requirements are to be accomplished on or before the scheduled due date listed in the SUBMEPP provided report as contained in the TYCOM PMR scheduling system. PMR requirements which are not accomplished by their scheduled completion date will be rescheduled and identified to the TYCOM in accordance with Volume VI, Chapter 24, paragraph 24.7.3.g of this manual. UROs are to be accomplished by the scheduled due dates or appropriate waivers or DFS must be requested.
- c. NMP Review. Review NMP and ensure all authorized alterations intended for accomplishment during the CMAV are identified by priority based on material availability as identified by the Executing Activity. Ensure they are properly entered into the CSMP.
- d. MJC Review. Review the MJC and identify the routine package to be accomplished during the CMAV. Ensure it is properly entered into the CSMP.
- e. Review work candidates for applicability of Master Specification Catalog task lists.
- f. Draft Key Event Schedule.
- g. Work Package Screening. Screen and forward the assigned prioritized work package to the Executing Activity. Maintenance Team/RMC/ISIC responsibilities for work package screening are established in reference (c). Additional specific requirements are:

- (1) Ensure work candidates meet the criteria for the level of work and are correctly prioritized in accordance with reference (c).
 - (2) If the assistance requested is for use of the Executing Activity facilities or technical guidance in order for Ship's Force to accomplish planned or corrective maintenance, the submitting ship and TYCOM should be advised to use MJC Routine N0000EXCNA740, (Facilities for Ship's Force Work).
 - (3) If a work candidate is received in message format, the RMC/ISIC shall input the message work candidate into the Maintenance Data System (MDS). For a ship in transit, the parent RMC/ISIC must advise the RMC/ISIC to which the ship is reporting of the desired disposition of the message work candidate.
 - (4) Designate controlled work as defined in Volume V, Part I, Chapter 5 of this manual. Indicate the appropriate governing Key Event.
 - (5) (Submarines only). If the equipment is contained in the PMR program and the repair can possibly satisfy the PMR requirement, the ISIC will designate the work as Special Interest in Block 10, note the PMR MJC Job Control Number (JCN) in Block 49, and instruct to call out the MJC item. Enter remarks as necessary in Block 49 preceded by "SQ-", and sign in Block C.
- h. From the Key Event schedule, develop an IWS in accordance with paragraph 4.4.4 of this chapter to aid in tracking and sequencing CJs.
- i. CMAV Funding. CMAV funding targets are developed as a part of each ship's MMBP. RMC/ISIC will establish CMAV funding targets in order to properly and responsibly administer funds, and gain optimum readiness return on each dollar invested.
- j. Submarine Engineering Management, Monitoring and Fleet Support Program Office Performance Monitoring Team (PMT)/Supervisor of Shipbuilding Newport News PMS 312C Material Condition Assessment (MCA) Review. Review scheduled Submarine Engineering Management, Monitoring and Fleet Support Program Office/PMT/PMS 312C MCA inspections, monitoring and testing that may result in significant new work for the Executing Activity or Ship's Force; or that may impact scheduled Ship's Force or Executing Activity work.
- k. Outside Activity Support. Identify outside activities (e.g., Naval Surface Warfare Center, Carderock Division (NSWCCD), Alteration Installation Team, Naval Undersea Warfare Center, Supervising Authority, RMC, Industrial Activity Tiger Team, etc.) participating in the CMAV and their associated support requirements.
- l. Special Evolutions. Identify required special evolutions associated with pre-availability tests and inspections.
- m. WPER. The WPER is conducted with the Executing Activity (and Ship's Force if available) as scheduled in accordance with Appendix H of this chapter. The purpose is to finalize the CMAV work package and required evolutions. This is accomplished as noted below. This meeting may be conducted in conjunction with the ship's PB4M.
- (1) Attendees will include the Maintenance Team/ISIC Material Officer/TYCOM Ship's Coordinator, Maintenance Planning Manager, RMC, Ashore Ships Maintenance Manager, Production Officer representative, Executing Activity, Ship's Engineer Officer, MST OIC, Availability Coordinator and the Ship Superintendent (as applicable).
 - (2) Assemble the proposed CMAV work package from the CSMP, PMR/UROs, NMP and MJC, as applicable.
 - (3) Screen the proposed work package to designate the work to be accomplished during the CMAV.
 - (4) Prioritize the proposed work package.

- (5) (Submarines only). Identify Safety of Ship Maintenance Items List evolutions in Volume IV, Chapter 10, paragraph 10.4.8 of this manual.
 - (6) Designate the CJs.
 - (7) Integrate Executing Activity recommended CMAV Key Event schedule with other ISIC/Ship planned events for the ship, such as weapons moves, fueling, and training events.
 - (8) Review scheduled PMT/MCA testing that may result in significant new work after the CMAV starts.
 - (9) Establish the CMAV berth for pre-staging material and support equipment.
 - (10) Review adequacy of available testing and support equipment needed for the CMAV.
 - (11) Identify other outside activities participating in the CMAV and associated support requirements.
 - (12) Identify required special evolutions associated with pre-availability tests and inspections. The result of the CMAV WPER should be an executable work package within the CMAV time frame, budget, and Executing Activity capacity.
- n. Re-screen Work Candidates. Re-screen and assign rejected work candidates (in accordance with Part II, Chapter 1 of this volume). Notify ship of final disposition of each item.
 - o. Issue Availability Planning Message (Submarines only). No later than two weeks prior to start of the CMAV, send the Availability Planning Message prepared in accordance with Appendix F of this chapter and reviewed during the CMAV WPER, to the ship. It should describe the major work scheduled, controlling Executing Activity and Ship's Force Key Events, PMT/MCA testing, PMR jobs scheduled, alterations to be accomplished by the Executing Activity and Ship's Force, any other scheduled evolutions and 100 hour transition plans. This message should identify the current numbers of components due or overdue from the Calibration/Weight Test Recall Program.

4.6.1.3 Issue Availability Planning Response Message (Submarines only). No later than one week prior to the start of the CMAV, the ship shall certify readiness to transition to a CMAV period, and address any concerns with the Availability Planning Message to TYCOM/ISIC in accordance with Appendix I of this chapter. The following items shall be addressed in the ship's report:

- a. Schedule requirements such as action items from Availability Planning Message, schedule of key events, ability to conduct 100 hour transition plans.
- b. Ship material preparation such as a report status of parts for Ship's Force work and desires for ISIC/TYCOM assistance in procurement and ensuring all outstanding CASREPs, SUBS, ZOZZS and TDENTS are identified in availability planning message.
- c. Ship's Force integrated schedule such as miscellaneous programs (calibration, small valve maintenance, etc.), drills and trainers that will affect Ship's Force ability to support production work, preservation zones and planned maintenance (to include PMS, Reactor Plant PMS, and PMT/KMRCs).
- d. CO's report of readiness or concerns: CO review above items and availability planning message and report readiness and exceptions to transition to CMAV period.

NOTE: ALL WORK CANDIDATES SUBMITTED AFTER THE WPER SHALL BE SCREENED AND CONTROLLED AS LATE WORK IN ACCORDANCE WITH PARAGRAPH 4.4.6 OF THIS CHAPTER.

4.6.1.4 Arrival Conference. This conference is conducted by the LMA. The Arrival Conference purpose is to provide an executive level brief to the RMC/ISIC, Executing Activity, MST OIC (if applicable) and ship's CO on the total scope of the CMAV effort and shall be conducted as discussed below. Note that the Arrival Conference may be conducted in conjunction with the PB4M.

- a. Attendees. The Arrival Conference is hosted by the responsible FMA and attended by the following personnel:

- (1) RMC/ISIC Material representative(s).
 - (2) Executing Activity representative(s).
 - (3) Tended ship, (recommended, as applicable, are the CO, Department Heads, and Availability Coordinator).
 - (4) Site PMT/MCA Officer.
 - (5) MST OIC (if applicable).
- b. Agenda. The following items comprise the agenda to be covered during the Arrival Conference:
- (1) Introduction of key FMA, Executing Activity and ship personnel.
 - (2) CMAV material and funding status.
 - (3) Review the CMAV Key Event schedule for potential conflicts.
 - (4) Special evolutions scheduled during the availability.
 - (5) Validate that critical jobs to be accomplished by the Executing Activities and Ship's Force are properly sequenced in the IWS.
 - (6) Introduce the LMA representative as the single point of contact for all elements of the CMAV, including responsibility for coordination of all Executing Activities and Ship's Force. This point of contact may be the Port Engineer, Project Manager, or Ship Superintendent, as applicable.
 - (7) Alterations to be accomplished.
 - (8) Significant material issues.
 - (9) Review status of outstanding DFS, as applicable.
 - (10) Results of arrival inspections and PMT/MCA testing.
 - (11) Issue meeting schedule for the CMAV.
- c. Tended Ship Actions. The ship takes the following actions at this conference:
- (1) Submit a list of key Ship's Force personnel, including officers, Leading Petty Officers/Work Center Supervisors, Quality Assurance Inspectors, Calibration Coordinator and Availability Coordinator.
 - (2) Verify that all known work candidates requiring outside assistance have been identified and work candidates submitted to the LMA/TYCOM or submit known late work candidates for immediate screening.
 - (3) Discuss potential Executing Activity/Ship's Force work interface concerns.
 - (4) Identify Ship's Force/MST (if assigned) planned evolutions that could impact scheduled work and verify that they are properly sequenced in the IWS.
- d. RMC/ISIC Actions. During this conference, the RMC/ISIC staff will take the following actions (if not already done):
- (1) Review any late work candidates submitted by the ship not addressed at the WPER. The goal is to control late work in accordance with paragraph 4.4.6 of this chapter. Should the late work presented at the conference require that other work be deferred, that work to be deferred shall be clearly understood. A Business Case Analysis described in Appendix D of this chapter should be conducted.

- (2) (Submarines and Aircraft Carriers only). Brief the Key Events schedule for the availability. The ship's Key Events should normally be scheduled in the Pre-CMAV/Availability Planning Message, concurred with by the ship's CO on arrival and input to the MDS by the RMC/ISIC prior to the Arrival Conference. CJs controlling the CMAV completion shall be identified for special management attention by the ISIC, LMA, Executing Activity and Ship's Force.

4.6.2 Continuous Maintenance Availability Execution. CMAVs are complex evolutions characterized by detailed management, closely coordinated RMC/ISIC, Executing Activity and Ship's Force work, systems testing, and other sequenced evolutions such as weapons movements, diver operations and training. Successful CMAV execution requires the closest possible communication and coordinated efforts by the RMC/ISIC, Executing Activity and Ship's Force.

4.6.3 Continuous Maintenance Availability Completion Procedures. The following procedures will be utilized for completing a CMAV. Exceptions are provided for those CMAVs of less than four weeks, or are of a minor scope where the PB4M may be an appropriate forum.

4.6.3.1 Management Reports Close-out Procedures. Upon completion of a scheduled availability, the MDS files must be updated to reflect the current status of work. To accomplish this goal and to ensure that all activities understand the status of all work, the following procedures will be followed:

- a. Upon completion of the assigned work, the LMA or Executing Activity will present a copy of the work candidate or a list of completed JCNs with the applicable final action codes to the ship to obtain concurrence that the described work was completed. Ship's Force will complete all AWRs in accordance with reference (c). Within 2 weeks of completion, the Executing Activities who have performed any configuration change shall submit the form 4790 CK of reference (c) to Ship's Force for submission to Configuration Data Managers Database - Open Architecture.
- b. Within two working days after the completion of an availability, all work centers will ensure that final man-hours have been entered. The ship's superintendent may sign off all Executing Activity routines for the ship. Completed work candidates and AWRs will be a product of the CMAV Departure and Assessment Conference of paragraph 4.6.3.2 of this chapter.
- c. On the third working day after the completion of an availability, the Maintenance Team will ensure that the CSMP ship and shore files reflects the current status of the ship's JCNs and request a Selected Job Management Report by priority for the ship.
- d. On the fourth working day after the completion of an availability, the ship's superintendent will annotate each incomplete JCN on the final Selected Job Management Report by JCN as to its present status and actions required in order to complete the item. Lead work centers must update this status into the MDS.
- e. Within seven working days after the completion of an availability, the Executing Activity will forward copies of the annotated Selected Job Management Report to the ship and ISIC.
- f. Review status of outstanding DFSs.

4.6.3.2 End of Scheduled Continuous Maintenance Availability Departure and Assessment Conference. This comprehensive review and critique of the availability is another cornerstone of the continuous improvement policy regarding Fleet maintenance.

- a. Purpose. The CMAV Departure and Assessment Conference is held to:
 - (1) Review the conduct of the availability and identify those improvements necessary to increase the effectiveness of Fleet maintenance.
 - (2) Identify the work that was completed during this CMAV and complete the appropriate documents (e.g., work candidates, AWRs, etc.) or produce the list necessary to update the ship's CSMP to reflect the completed work.
 - (3) Identify and reschedule to a future CMAV, the work deferred during this CMAV.
 - (4) Identify any incomplete work candidates and plan of action to complete items.

- (5) Establish the basic requirements (i.e., initial work package, sequence number and tentative dates) for the next CMAV.
- (6) Review status of outstanding DFSs.
- b. Execution. The Departure and Assessment Conference will be held during the last week of the CMAV at a time agreed upon by the Executing Activity Repair Officer/Production Officer and the ship. This meeting may be held in conjunction with the final weekly Management Conference or Progress Review.
- c. Attendees. The Departure and Assessment Conference is arranged, coordinated and chaired by the LMA Repair/Production Officer. Where the LMA is a contractor, the LMA Project Manager may co-chair these meetings with the NSA Project Manager. However, lack of participation by the contractor does not alleviate the NSA Project Manager of this responsibility. The following personnel shall attend this meeting and participate in its agenda:
 - (1) ISIC Supply Materials, Weapons/Combat Systems, Electronics Material Officer, and Submarine Engineering Management, Monitoring and Fleet Maintenance Support Program Office/PMT Staff personnel (as applicable).
 - (2) LMA Repair Officer, Production Officer, and Ship Superintendent, or their designated representatives.
 - (3) Tended ship CO, MST OIC (if applicable), Engineer and Availability Coordinator.
 - (4) Others as directed by the TYCOM, ISIC or Executing Activity CO.
 - (5) Executing Activity representatives.
- d. Agenda. The following agenda shall be used for reviewing and assessing the CMAV. Additional items may be added at the discretion of the TYCOM, ISIC, Executing Activity or ship. Attendees will be prepared to address their respective portions of the agenda.
 - (1) Review of the CMAV work package to establish status of each item and, for items completed satisfactorily, complete the work candidate/AWR.
 - (2) Review incomplete work candidates that will remain open from this CMAV and identify plan of action to complete these items.
 - (3) Identify and reschedule to a future CMAV the work deferred during this CMAV.
 - (4) Assess the scheduling, execution and quality of work accomplished by each activity during the CMAV.
 - (5) Assess the quality of general services provided by the Executing Activity site.
 - (6) Review recommendations for process improvements and possible LEAN initiatives.
 - (7) Assess lost time that prevented or delayed execution of scheduled work. (Lost time internal to the Executing Activity, e.g., waiting for transportation, assist work center, etc. and lost time caused by the ship such as waiting access, tagout, other Ship's Force support.)
- e. Results. The LMA shall consolidate the minutes of this meeting into the Departure and Assessment Report to the ISIC and provide a copy to the TYCOM. The report shall include:
 - (1) List of completed work and/or completed work candidates/AWRs for direct input into MDS to update the ship's CSMP and Configuration Data Managers Database - Open Architecture.
 - (2) Preliminary establishment of the next CMAV.
 - (3) List of policies and processes identified as requiring review for improvement. Proposed process improvements and corrective actions suggested to improve the effectiveness of future CMAVs.
 - (4) Lessons learned from the availability.

4.6.3.3 Fast Cruise/Sea Trials. The ISIC may schedule a one to two day Fast Cruise as part of the CMAV Key Event schedule. This is normally the last major Key Event prior to CMAV completion. As a minimum, the Fast Cruise agenda will include specified drills and evolutions necessary to re-establish proficiency in basic ship operations. It will also include sufficient formal testing to certify that the equipments and systems are fully ready to operate at sea in an operational environment. For CMAVs less than four weeks, the requirement for a Fast Cruise shall be at the ISIC discretion. The necessity of Sea Trials is a function of work performed during a CMAV and may not be required. If the duration or complexity of the CMAV is determined to be sufficient to warrant Sea Trials, the Ship/ISIC/TYCOM (as required by specific Force policy) shall determine if a formal Sea Trial Agenda is necessary, and if required, task the RMC/ship to prepare a formal Sea Trial Agenda for ISIC/TYCOM approval.

4.6.4 Hot Wash/Lessons Learned. For long duration or complex CMAVs, or in cases where there are significant lessons to be learned, Hot Wash/Lessons Learned will be conducted. The Hot Wash/Lessons Learned Conference should be within 30 days of completion of the availability. The Lessons Learned process is described in Volume VI Chapter 39 of this Manual. All key NSA, RMC, LMA, TYCOM or his representative, Executing Activity and Maintenance Team personnel shall attend it. The agenda and details of the meeting shall be determined by the RMC and Maintenance Team and shall be of appropriate length to evaluate the overall scope of the work accomplished. The Hot Wash/Lessons Learned process provides the maintenance and modernization community with a process to identify, resolve, and provide feedback communication on barriers causing inefficiencies or waste within business processes. While there are several milestone meetings within the availability planning and execution process, the feedback process exists to continually collect information to improve processes.

4.6.5 Maintenance Management Performance Goals (Submarine Tenders only). The following maintenance management performance goals are established for Submarine Tender Repair and Weapons Repair Departments. COs and Repair Officers are responsible for making every effort to attain these goals.

4.6.5.1 Activity Performance Summary. The Activity Performance Summary is a compilation of manpower statistics and production indices that are cumulative on a monthly basis. The following information summarizes the content and use of this report:

- a. This report is produced weekly on a cumulative basis for the current month and analyzed by the Production Officer and Repair Officer. This analysis should help determine the relative accuracy and adequacy of the manhour accounting for each work center. The data reflects how each work center is loaded with production work.
- b. On the last day of the month, a complete monthly cumulative report is produced. A thorough review and analysis is conducted by the Repair Officer and Production Officer, similar to the weekly review.
- c. Following review and analysis, the Repair Officer approves the data and the required reports are submitted to the TYCOM. The TYCOM in turn forwards the data to higher authority.
- d. The Performance Summary provides management with data to determine the capacity of the activity for CMAV maintenance, and subsequent monitoring of the activity maintenance effort conducted on ships. The determination of activity capacity for ship maintenance is the gauge by which managers can evaluate activity productivity while reviewing the report of manhour expenditures.
- e. Activity capacity is a function of both total manpower and the distribution of personnel within the activity. A comparison of Repair Department manning to the manpower authorization should be conducted periodically to ensure activity work centers are not undermanned with respect to rate, Navy Enlisted Classification, and/or number of personnel. This review may determine that local action is required to schedule formal schools leading to the Navy Enlisted Classification acquisition where shortages exist, or may dictate a temporary or permanent reassignment of resources from one work center to another.
- f. Part One of the activity Performance Summary shows the manpower distribution within the Activity. The Analyst Records and Report Section is responsible for collecting manning information from the activity departments and divisions as a basic input to the Performance Summary. The manning level of the Repair Department is monitored to ensure that this department is properly manned across its work centers.

- g. Part Two of the activity Performance Summary provides departmental manpower usage indicators and statistics. The Productivity Index is a key indicator of activity employment. Each Productivity Index is a ratio of production manhours expended to the production manhours available. Available manhours are computed from the number of production personnel assigned each day, assuming an eight hour work day and no more than five working days per week.
- h. Part Three of the activity Performance Summary is a breakdown of activity manhours expended aboard each tended ship.
- i. Part Four of the activity Performance Summary shows the status of work screened for activity accomplishment.
- j. Part Five of the activity Performance Summary provides the same manhour usage information as Part Two, but broken down by work center.

4.6.5.2 Available Production Hours. The standard workday consists of eight hours of available production work each work day, five days a week. Weekends and national holidays are not considered to have available production work hours. It further requires that TYCOMs will establish policies that maximize available production hours within the context of the total activity mission profile. The activity CO shall implement the eight hour production work day for activity personnel. Reduction in this available effort will be for requisite industrial training, skill qualification, facilities maintenance, and capability certification efforts needed to meet the activity's Mission Profile requirements.

4.6.5.3 Performance Indices.

- a. All factors relative to the following indices must be accurately reflected in the baseline of the FMA computer management system. These factors are:
 - (1) Assigned Manhours. The number of personnel assigned to the activity as production and production support, over the normal eight hour work day and the number of days tending (exclusive of weekends, holidays and days underway), comprise the "Assigned (Gross Available) Manhours".
 - (2) Production Manhours. The manhours actually expended in the progress and completion of work requests authorized for activity accomplishment are those expended by personnel assigned to the activity work centers. The expended manhours by personnel from other departments are not included in the activity's indices, but are credited to other special work centers on the Performance Summaries.
 - (3) Productive Support Ratio for the Department is defined as:
$$\frac{\text{Total Assigned Support Personnel}}{\text{Total Assigned Production Personnel}}$$
- b. A Productive Support Ratio of between 0.65 and 0.85 shall be maintained. A ratio of greater than 0.85 is indicative of an excessive number of FMA personnel assigned to non-FMA tasks. A ratio of less than 0.65 is indicative of a shortage of personnel in Quality Assurance, Planning and other critical production support work centers.
- c. Supervisory Ratio. The Supervisory Ratio, production personnel to permanent support personnel, must be a minimum ratio of 7:1.
- d. Supply Production Support. Production work centers shall not have supply function production support personnel assigned such as Repair Parts Petty Officers. The supply support function is assigned to the Planning and Estimating and Repair Other Vehicle work centers. When the production work centers must provide technical details for Repair Other Vehicle supply requests, such research time shall be reported as production time against the applicable work request. Production managers must ensure the Automated Material Requisitioning system is fully utilized to preclude wasted labor by activity personnel in copying supply data already available from the computer.
- e. Department Productivity Index.

APPENDIX K

SAMPLE ISIC MESSAGE TO TYCOM CONCERNING CREW CERTIFICATION AND MATERIAL
CONDITION FOR FAST CRUISE AND SEA TRIALS FOR IDD OR PIRA AVAILABILITIES

FM COMSUB<RON/GRU NO.>//
 TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 INFO <SUPERVISING AUTHORITY>||<CODES>//
 USS <SHIP NAME>//
 COMSUBGRU<NO.>//
 BT
 UNCLAS//N09094//
 MSGID/GENADMIN/COMSUB<RON/GRU NO.>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.> CREW AND MATERIAL CERTIFICATION//
 REF/A/DOC/COMUSFLTFORCOM/<DATE>//
 REF/B/DOC/NAVSEA/<DATE>//
 REF/C/DOC/NAVSEA/<DATE>//
 NARR/REF A IS COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL. REF B IS
 SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS MANUAL, NAVSEA 0924-062-0010. REF C IS
 NAVSEA URO MRC TECHNICAL MANUAL//
 RMKS/1. CREW CERTIFICATION CONDUCTED AND SATISFACTORILY COMPLETED IAW REF A.
 2. IAW REFS A AND B, COMSUB<RON/GRU NO.> CERTIFIES THE SUBSAFE CERTIFICATION BOUNDARY
 OF <SHIP NAME/HULL NO.> INSTALLED, REPAIRED AND/OR TESTED BY FORCES AFLOAT IS
 SATISFACTORY FOR SEA TRIALS TO TEST DEPTH. ALL SUBSAFE CONTROLLED WORK PACKAGES
 ARE CLOSED. CERTIFICATION REQUIREMENTS OF REF B HAVE BEEN SUSTAINED FOR THE
 REMAINDER OF THE SUBSAFE CERTIFICATION BOUNDARY. ALL OTHER CONTROLLED WORK
 PERFORMED BY SHIP'S FORCE HAS BEEN COMPLETED AND SATISFACTORILY RETESTED AND THE
 APPROPRIATE WORK PACKAGES CLOSED.
 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 AND MANDATORY TESTS/INSPECTIONS SPECIFIED IN REF C HAVE BEEN
 ACCOMPLISHED OR VERIFIED TO BE WITHIN THE REQUIRED PERIODICITY.
 6. COMSUB<RON/GRU NO.> REPORTS READINESS OF USS <SHIP NAME/HULL NO.> FOR COMMENCEMENT
 OF FAST CRUISE. CO USS <SHIP NAME/HULL NO.> CONCURS.//
 7. SUBJECT TO SATISFACTORY COMPLETION OF FAST CRUISE AND RESOLUTION OF MANDATORY
 DEFICIENCIES COMSUB<RON/GRU NO.> CONSIDERS USS <SHIP NAME/HULL NO.> MATERIAL CONDITION
 READINESS SATISFACTORY FOR COMMENCEMENT OF SEA TRIALS.//
 BT

**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND
 CURRENT PLAD IS UTILIZED.**

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APPENDIX O

SAMPLE ISIC MESSAGE TO TYCOM CONCERNING FINAL MATERIAL CERTIFICATION PRIOR TO SEA TRIALS FOR IDD OR PIRA AVAILABILITIES

FM COMSUB<RON/GRU NO.>//
 TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 INFO COMSUBRON ELEVEN//
 COMSUBGRU <NO.>//
 USS <SHIP NAME>//
 <SUPERVISING AUTHORITY>//<CODES>//
 BT
 UNCLAS //N09094//
 GENADMIN/COMSUB<RON/GRU NO.>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.> MATERIAL CERTIFICATION/ READINESS FOR SEA TRIALS//
 REF/A/DOC/ COMUSFLTFORCOM/<DATE>//
 REF/B/RMG/COMSUB<RON/GRU NO.>/<DTG>//{ APPENDIX K }
 REF/C/RMG/USS<SHIP NAME>/<DTG>//{ APPENDIX Y }
 REF/D/DOC/NAVSEA /<DATE>//
 NARR/REF A IS COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL, VOLUME II.
 REF B IS COMSUB<RON/GRU NO.> REPORT OF CREW CERTIFICATION AND MATERIAL CONDITION
 FOR FAST CRUISE AND SEA TRIALS. REF C IS SHIP REPORT OF COMPLETION OF FAST CRUISE AND
 READINESS FOR SEA TRIALS. REF D IS NAVSEA 0924-062-0010, SUBMARINE SAFETY (SUBSAFE)
 REQUIREMENTS MANUAL.
 RMKS/1. IAW REFS A AND D, THIS MSG CERTIFIES THAT NO MANDATORY DEFICIENCIES FOR SEA
 TRIALS HAVE BEEN IDENTIFIED AS REPORTED IN REF B AND C. THERE HAVE BEEN NO RECS
 OPENED AND NO SUBSAFE DEPARTURES FROM SPECIFICATION PROCESSED SINCE THE START OF
 FAST CRUISE. <OR, REPORT ANY MANDATORY DEFICIENCIES DISCOVERED WITH CORRECTIVE ACTION, AND IF RECS
 AND/OR DEPARTURES FROM SPECIFICATIONS WERE PROCESSED SINCE THE START OF FAST CRUISE, REPORT ALL RECS
 OPENED SINCE THE START OF FAST CRUISE ARE CLOSED AND/OR ALL SUBSAFE DEPARTURES FROM SPECIFICATIONS
 PROCESSED SINCE THE START OF FAST CRUISE ARE RESOLVED.> ^(NOTE 1)
 2. THERE ARE NO SUBSAFE DEPARTURES FROM SPECIFICATIONS WITH CONDITIONS WHICH
 HAVE NOT BEEN SATISFIED. THE FOLLOWING ADDITIONAL DEPARTURES FROM SPECIFICATIONS
 WERE GENERATED SUBSEQUENT TO REF B. <If None, indicate NONE>
DEPARTURE NO. TYPE SYSTEM/COMPONENT RESTRICTION (IF ANY)
 A.
 B.
 3. REQUEST PERMISSION TO COMMENCE SEA TRIALS. CO <SHIP NAME/HULL NO.> CONCURS.//
 BT

NOTE 1: 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 FOR FAST CRUISE MESSAGE.

NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND CURRENT PLAD IS UTILIZED.

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- (6) When escort is required, communicate with escort on RAC/WQC at each depth increment or at 10-minute intervals, whichever is sooner. If communications are lost, return to depth at which communications can be established before continuing (See Note 2).
- (7) All hands inspect for leaks and report them.
- (8) Inspect the discharge of all automatic drains in each EMBT Blow quadrant for sea water leakage prior to the first dive when the ballast tanks are flooded (e.g., at periscope depth).
- (9) At periscope depth, operate all masts checking optics and leakage. Observe speed and depth restrictions for masts without violation of the SOE (See Note 5). Event may be performed following initial dive, if sea state prevents operation at periscope depth.
- (10) Test operation of trim and drain system **discharging** to sea.
- (11) If not at 150 feet for SSN 688 Class submarines (155 feet for SSN 774 Class submarines), (160 feet for SSBN/SSGN 726 and SSN 21 Class submarines), proceed to 150 feet for SSN 688 Class submarines (155 feet for SSN 774 Class submarines), (160 feet for SSBN/SSGN 726 and SSN 21 Class submarines) and obtain SAT 1/3 trim in accordance with the Ship's Operating Manual. Take readings as required to make a check of ballasting.
- (12) At 200 feet:
 - (a) Adjust trim (See Note 6).
 - (b) Inspect for leaks.
 - (c) Communicate with escort at each depth increment or at 10-minute intervals, whichever is sooner. If communications are lost, return to depth at which communications can be re-established before continuing (See Note 2).
- (13) At 200 feet, in accordance with reference (s):
 - (a) Check accuracy of gauges and repeaters (See Note 4).
 - (b) Evaluate signal ejectors or launchers. Conduct operational test of each by hand and impulse methods, as applicable (See Note 7).
 - (c) Check shafting bearings and stern tubes for excessive heating, leakage and noise. Main shaft seals must be tested at each depth specified in reference (s) testing one seal for 20 minutes, and shifting to the other seal. Test the second seal for 20 minutes or until the boat is ready to go to the next depth, whichever comes first.
 - (d) Cycle rudder and planes through full throw at slow speed to check for binding.

NOTE: REQUIRED SYSTEMS ARE LISTED IN PARAGRAPH 4b OF REFERENCE (s). OBSERVE RESTRICTIONS ON OPERATION OF SYSTEMS LISTED IN PARAGRAPH 4d OF REFERENCE (s).

- (e) Operate all Main and Auxiliary Sea Water 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.
 - (f) **Operate Trim and Drain pumps, discharging to sea.**
 - (g) **Cycle main ballast tank vents to check for binding. Main ballast tank vents will be cycled hydraulically except at test depth where they will be cycled manually.**
- (14) Test the SPM (See Note 13 in Appendix O of Part I, Chapter 3 of this volume).
 - (15) Additional requirements may be imposed at the discretion of the CO.
- c. The following tests and evolutions shall be carried out following the initial tightness dive and prior to the deep dive:

- (1) Transmit initial tightness dive complete message.
 - (2) A minimum of six hours of **ISE submerged for crew training**.
 - (3) Charge air banks and battery as 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.
 - (4) If escort is required, detach escort after initial tightness dive. Escort will then proceed to station for deep dive. Ensure that deep dive rendezvous time and location are clearly established before escort is released. The escort may be retained for additional testing during the transit as described in Part I, Chapter 3, Appendix P of this volume. Transit depths shall not exceed depth as described in Part I, Chapter 3, Appendix P of this volume.
 - (5) Additional requirements may be imposed at the discretion of the CO.
- d. The following tests and evolutions shall be carried out immediately prior to or during the deep dive:
- (1) Check that initial EMBT Blow system actuating air pressure and air bank pressure is within +0 PSIG, -200 PSIG of nominal operating air pressure.
 - (2) Verify MBT systems lined up for normal operation.
 - (3) Take sounding. Accurately fix ship's position within the specified dive area in accordance with reference (g). Transmit commencing deep dive message.
 - (4) Proceed to normal submergence depth and obtain a 1/3 speed trim. Use conservative angles and speed on initial dive.
 - (5) Trim ship to maintain neutral buoyancy (See Note 6).
 - (6) Rig ship for deep submergence. Line up propulsion plant for maximum reliability. All systems shall be in the maximum secure condition with unnecessary sea systems isolated (See Note 3).
 - (7) Station additional personnel throughout the ship to inspect for leaks.
 - (8) At 400 feet and then in increments of 100 feet descending to one-half the maximum operating depth and every 100 feet or other lesser specified increments thereafter down to the maximum authorized operating depth:
 - (a) Adjust trim (See Note 6).
 - (b) Inspect for leaks.
 - (c) Communicate with escort (if escort required) at each 100 foot depth increment or at 10-minute intervals, whichever is sooner. If communications are lost, return to a depth at which communications can be re-established before continuing (See Note 2).
 - (9) At depths listed for hull valve cycling in reference (s) including the maximum authorized operation depth:
 - (a) Check accuracy of gauges and repeaters (See Note 4).
 - (b) Evaluate signal ejectors or launchers. Conduct operational test of each by hand and impulse methods, as applicable (See Note 7).
 - (c) Check shafting bearings and stern tubes for excessive heating, leakage and noise. Main shaft seals must be tested at each depth specified in reference (s) testing one seal for 20 minutes, and shifting to the other seal. Test the second seal for 20 minutes or until the boat is ready to go to the next depth, whichever comes first.
 - (d) Cycle rudder and planes through full throw to check for binding. Cycling of rudder and planes through full throws should be limited to 90 % of test depth.

NOTE: REQUIRED SYSTEMS ARE LISTED IN PARAGRAPH 4b OF REFERENCE (s). OBSERVE RESTRICTIONS ON OPERATION OF SYSTEMS LISTED IN PARAGRAPH 4d OF REFERENCE (s).

- (e) Operate all Main and Auxiliary Sea Water 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 (s).

NOTE: TRASH DISPOSAL UNITS (TDU) WITH BALL VALVES WILL NOT BE OPERATED BELOW 200 FEET. TDUs WITH FLAPPER VALVES WILL NOT BE OPERATED BELOW 150 FEET.

- (f) Operate trim and drain pumps, discharging to sea.
- (g) Cycle main ballast tank vents to check for binding. Main ballast tank vents will be cycled hydraulically except at test depth where they will be cycled manually.
- (10) Surface fully with EMBT blow in accordance with applicable URO MRC. Check air bank pressures before and after blow. For SSN 23 only: Perform an MBT 6 normal blow from the BCP until MBTs 6A and 6B are blown to residual water levels.
- (11) Transmit completion of deep dive message.
- (12) Additional requirements may be imposed at the discretion of the Commanding Officer.
- e. The following tests and evolutions shall be carried out submerged following the deep dive:
 - (1) Full power run (See Notes 8, 9 and 10).
 - (2) Emergency stop (See Notes 9 and 10).
 - (3) Steering and diving operation at full speed (See Note 11).
 - (4) Steep angles - operate ship through several depth changes using large up and down angles. Check operation of ship machinery (See Note 9).
 - (5) Time raising each periscope and mast at maximum depth and speed for which they are designed. Check training feature where applicable.
 - (6) Run and observe air conditioning plants throughout trials noting deficiencies. Operate the Lithium Bromide air conditioning plant (if installed) to demonstrate ability to carry entire maximum existing ship's air conditioning load or 100 percent capacity.
 - (7) Additional requirements may be imposed at the discretion of the Commanding Officer.

4. Sea Trial Conclusion. At the conclusion of Sea Trials, and based on a review of Sea Trial deficiencies and TYCOM concurrence, the submarine may transit to a port other than the overhauling activity. During this transit the submarine shall not operate at depths greater than 400 feet (one-half test depth plus fifty feet for SSN 688 class), and shall not be released for unrestricted operations until all RECs are closed and any deficiencies identified during the controlled dive to test depth have been reported and reviewed by the TYCOM and specific TYCOM approval for URO is granted.

NOTES

1. For SSBN/SSGN 726 Class submarines **only** - This surface evolution, full power run astern, shall be conducted only if maintenance was accomplished on the reduction gears, the astern throttle(s) or the main shaft thrust bearing.
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 the prescribed previously agreed upon time limits to avoid initiation of lost submarine procedures.
3. Reference (s) [C9094.2 (Series)] prescribes procedures for system operation during the deep dive.

4. Compare all depth and pressure gauges. Depth and pressure gauges should be checked as soon as each next specified depth is reached.
5. Any evolutions (e.g., mast testing, propeller cavitation data collection, etc.) required by the Sea Trial Agenda, which violate the ship's SOE, must be approved by the TYCOM prior to Sea Trials, in accordance with paragraph 2 of this Appendix.
6. Deep dive should be conducted using moderate speed and constantly adjusting trim at depths indicated in paragraphs 3.b.(12)(a) and 3.d.(8)(a) of this Appendix, 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 or as otherwise directed by NAVSEA.
7. 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 depths specified by reference (s). Shoot pyrotechnics on initial dive and at test depth on deep dive **only** if work was accomplished on the launchers or signal ejectors or if an escort vessel is required for the trial.
8. Run full power submerged for at least two hours. Operate at minimum non-cavitating depth, but not to exceed 400 feet, in accordance with reference (g); water depth is not limited for this event.
9. Note that the required sequence of events is initial dive, deep dive, full power run submerged, back emergency, 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.
10. The submerged full power run with an ahead flank bell is to be terminated with a back emergency bell, consistent with current Main Propulsion Operating Limits (shaft torque is not a limiting factor in this test). The duration of the back emergency bell will be limited to 45 seconds, to be followed immediately by an appropriate ahead bell. The 45 second limit will:
 - a. Standardize the crashback requirements throughout the submarine force.
 - b. Provide a backing transient similar to that experienced in response to a stern plane jam.
 - c. Be short enough that no ship will gather sternway.

For SSBN/SSGN 726 Class submarines **only** - The submerged full power run with an ahead flank bell is to be terminated by reducing the bell to ahead standard until speed stabilizes. The ship is then to conduct a back emergency bell consistent with current Main Propulsion Operating Limits (shaft torque is not a limiting factor in this test). The duration of the back emergency bell will be limited to 45 seconds, to be followed by an appropriate ahead bell. The 45-second limit will avoid developing sternway.
11. At maximum safe speed, operate the rudder and planes through full throw in both directions, in all remote modes of operation.

APPENDIX S

SAMPLE TYCOM MESSAGE TO SHIP CONCERNING URO FOR IDD OR PIRA AVAILABILITIES

FM COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 TO USS <SHIP NAME>//
 INFO CNO WASHINGTON DC//
 COMNAVSEASYS COM WASHINGTON DC//
 COM<LANT/PAC>FLT <NORFOLK VA/PEARL HARBOR HI>//
 DIRSSP WASHINGTON DC//{FOR SSBN/SSGN}
 COMSUBGRU <NO.>//
 COMSUB<RON/GRU NO.>//
 <SUPERVISING AUTHORITY>//
 BT
 UNCLAS //N09094//
 MSGID/GENADMIN/COMSUB<LANT/PAC>//
 SUBJ/(SUBS) UNRESTRICTED OPERATION OF USS <SHIP NAME/HULL NO.>//
 REF/A/RMG/ USS <SHIP NAME>/<DTG>//
 REF/B/DOC/COMUSFLTFORCOMINST 4790.3//
 REF/C/DOC/ NAVSEA 0924-062-0010//
 NARR/REF A IS USS <SHIP NAME> MSG CONCERNING COMPLETION OF SEA TRIALS. REF B IS THE
 JOINT FLEET MAINTENANCE MANUAL. REF C IS THE SUBMARINE SAFETY
 (SUBSAFE) REQUIREMENTS MANUAL.//
 RMKS/1. REF A REPORTED THE SATISFACTORY COMPLETION OF SEA TRIALS WITH NO SUBSAFE
 DEFICIENCIES IDENTIFIED. (IF SPECIFIC SUBSAFE DEFICIENCIES WERE IDENTIFIED BUT WERE NOT DEEP DIVE
 RETEST FAILURES LIST SPECIFICS – DEEP DIVE TEST FAILURES WILL REQUIRE A FOLLOW-ON SEA TRIALS)
 2. TYCOM AUTHORIZES, USS <SHIP NAME/HULL NO.> TO CONDUCT OPERATIONS TO <SPECIFIED> DEPTH,
 SUBJECT TO THE FOLLOWING RESTRICTIONS: <LIST RESTRICTIONS IF THEY EXIST OR STATE "NONE">.
 3. CONTINUED CERTIFICATION FOR OPERATIONS TO TEST DEPTH IS SUBJECT TO COMPLIANCE
 WITH REF B AND REF C.
 BT
**NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND
 CURRENT PLAD IS UTILIZED.**

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APPENDIX U

**SAMPLE ISIC MESSAGE TO TYCOM CONCERNING
MATERIAL CERTIFICATION FOR FOLLOW-ON SEA TRIALS IN CASES WHERE A PREVIOUS SEA
TRIAL WAS ABORTED OR CORRECTIVE ACTIONS FOR SEA TRIAL DEFICIENCIES REQUIRE AN
ADDITIONAL DEEP DIVE FOR IDD OR PIRA AVAILABILITIES**

FM COMSUB<RON/GRU NO.>//
 TO COMSUB<LANT/PAC> <NORFOLK VA/PEARL HARBOR HI>//
 INFO COMSUBRON ELEVEN//
 COMSUBGRU <NO.>//
 USS <SHIP NAME>//
 <SUPERVISING AUTHORITY>//<CODES>//
 BT
 UNCLAS //N09094//
 MSGID//GENADMIN/COMSUB<RON/GRU NO.>//
 SUBJ/(SUBS) USS <SHIP NAME/HULL NO.>MATERIAL CERTIFICATION/ READINESS FOR <FOLLOW-ON ^(NOTE 1)>
 SEA TRIALS//
 REF/A/DOC/ COMUSFLTFORCOM/<DATE>//
 REF/B/RMG/COMSUB<RON/GRU NO.>/<DTG>//{ APPENDIX Y }
 REF/C/DOC/NAVSEA /<DATE>//
 REF/D/RMG/USS <SHIP NAME>/<DTG>//{ APPENDIX T }
 NARR/REF A IS COMUSFLTFORCOMINST 4790.3, JOINT FLEET MAINTENANCE MANUAL, VOLUME II.
 REF B IS COMSUB<RON/GRU NO.> MSG TO TYCOM ON MATERIAL STATUS PRIOR TO INITIAL SEA
 TRIALS. REF C IS NAVSEA 0924-062-0010, SUBMARINE SAFETY (SUBSAFE) REQUIREMENTS
 MANUAL. REF D IS USS <SHIP NAME/HULL NO.> REPORT OF READINESS FOR FOLLOW-ON SEA
 TRIALS.//
 RMKS/1. IAW REF A AND C, THIS MSG CERTIFIES THAT NO MANDATORY DEFICIENCIES FOR
 <FOLLOW-ON ^(NOTE 1)> SEA TRIALS HAVE BEEN IDENTIFIED. THERE HAVE BEEN NO RECS OPENED AND
 NO FORCES AFLOAT SUBSAFE DEPARTURES FROM SPECIFICATION PROCESSED SINCE THE START
 OF THE INITIAL SEA TRIALS <OR, SUBSEQUENT TO REF B, REPORT ANY MANDATORY DEFICIENCIES DISCOVERED
 WITH CORRECTIVE ACTION, AND IF RECS AND/OR DEPARTURES FROM SPECIFICATIONS WERE PROCESSED SINCE THE
 START OF THE INITIAL SEA TRIALS, REPORT ALL RECS OPENED SINCE THE START OF INITIAL SEA TRIALS ARE CLOSED
 AND/OR ALL SUBSAFE DEPARTURES FROM SPECIFICATIONS PROCESSED SINCE THE START OF SEA TRIALS ARE RESOLVED
^{NOTE 2}>
 2. THERE ARE NO SUBSAFE DEPARTURES FROM SPECIFICATIONS WITH CONDITIONS WHICH
 HAVE NOT BEEN SATISFIED. THE FOLLOWING DEPARTURES FROM SPECIFICATIONS ARE
 CURRENTLY OUTSTANDING:
DEPARTURE NO. TYPE SYSTEM/COMPONENT RESTRICTION (IF ANY)
 A.
 B.
 3. SHIP REPORTED READINESS FOR FOLLOW-ON SEA TRIALS IN REF D.//
 BT

NOTE 1: UPCOMING TRIAL WHICH IS SUBJECT OF THIS CERTIFICATION (E.G., SECOND SEA TRIAL, ETC.).

NOTE 2 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 FOR FAST CRUISE MESSAGE.

NOTE: ENSURE MESSAGES ARE IN ACCORDANCE WITH CURRENT MESSAGE FORMAT AND CURRENT PLAD IS UTILIZED.

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VOLUME II
PART II
CHAPTER 1
**SHIP MAINTENANCE VALIDATION,
 SCREENING AND BROKERING**

REFERENCES.

- (a) OPNAVINST 4700.7 - Maintenance Policy for U.S. Naval Ships

LISTING OF APPENDICES.

A Availability Creation and Numbering

1.1 PURPOSE. This chapter provides procedures and guidance regarding ship maintenance work candidate validation, screening and brokering processes. These processes affect all Type Commanders (TYCOM), Regional Maintenance Center (RMC) Commanding Officers and ship Maintenance Teams.

1.2 MAINTENANCE.

1.2.1 Regional Maintenance Centers. The command with overall responsibility for efficient planning and execution of all ship maintenance and modernization for assigned ships is the local RMC. The RMC is a subordinate command to Naval Sea Systems Command (NAVSEA). The RMC shall report Additional Duty to the appropriate TYCOMs. This reporting relationship ensures that the TYCOMs continue to effectively carry out their responsibilities relating to material readiness of their ships. Contact information for the RMCs can be found in Volume VI, Chapter 2, Appendix A of this manual.

1.2.2 Maintenance Team. Each ship shall have a formally structured Maintenance Team as identified in Volume VI, Chapter 41 of this manual

1.2.3 Class Maintenance Plan. The Class Maintenance Plan (CMP) database is an engineered set of **organizational**, Intermediate and Depot-level maintenance tasks, including the following: material condition assessment tasks (I-tasks), qualified repair and life renewal tasks (Q-tasks), availability routine tasks (R-tasks) and authorized Fleet and Program ship change tasks. Tasks are either scheduled or unscheduled.

- a. Scheduled tasks are those **"I" Level and "D" Level** tasks the cognizant technical authority (usually the designated In-Service Engineer) requires to be accomplished on a periodic basis. These tasks have been identified, using Reliability Centered Maintenance, to be both applicable and effective. The CMP system automatically pushes scheduled tasks for Maintenance Team screening and brokering based on last accomplished date and task periodicity.
 - (1) For Aircraft Carriers, scheduled tasks are pushed to the shore Current Ship's Maintenance Project (CSMP) six quarters before the deadline date, unless the periodicity is such that the task is due in less than 18 months. These tasks are mandatory and must be completed by the due date or approved for deferral or cancellation by the Ship Design Manager (SDM) (see paragraph 1.4.5.e of this chapter).
 - (2) For Surface Force ships, scheduled tasks are pushed to the shore CSMP and must be completed by the due date or approved for deferral or cancellation by the SDM (see paragraph 1.4.5.e of this chapter).
- b. Unscheduled tasks are pulled by the Maintenance Team based on evidence of need. This includes unscheduled assessment tasks, qualified repair tasks, approved ship changes with their associated support and service tasks and availability routine tasks. Additionally, if the need arises for a scheduled task to be accomplished before it has been pushed into the CSMP, the Maintenance Team has the ability to pull that scheduled task, and the last accomplished date will be appropriately updated.

1.3 WORK CANDIDATES.

1.3.1 Current Ship's Maintenance Project Composition. An accurate, up-to-date CSMP is essential for a well-maintained ship. The importance of documenting all discrepancies cannot be overemphasized because the CSMP is the basis for all funding. Only work that is documented in the CSMP will be authorized for accomplishment. The CSMP is maintained in two files, the organizational unit file and the shore file.

- a. Shipboard File. This file contains information regarding all known material discrepancies that require corrective maintenance. These discrepancies are normally discovered either by Ship's Force personnel during routine operations and planned maintenance or by non-Ship's Force personnel during material assessment, training and assist visits, **documented in accordance with Volume VI Chapter 42 of this manual**. The criticality of the discrepancy determines the maximum length of time allowed to upload the information regarding the discrepancy to the RMC responsible for managing the shore file. Exceptions to this policy are made within the considerations of bandwidth availability and Operational Security conditions.
 - (1) 2-Kilos (**Naval Operations (OPNAV) 4790/2K**) associated with correction of C2 Casualty Reports shall be uploaded within 24 hours.
 - (2) 2-Kilos associated with correction of C3/C4 Casualty Reports shall be uploaded within four hours.
- b. Shore File. This file contains the material discrepancies uploaded from the shipboard file, other work identified by shore-based managers and tasks from the CMP. Tasks from the CMP include pushed scheduled tasks, pulled tasks, authorized program and Fleet modernization work and availability support routines. The Type Desk Officer and **Ashore Ship's Maintenance Manager** are responsible for pulling CMP tasks as required based on evidence of need, availability support routines and Fleet and Program alterations into availability work packages. Although only on the CSMP shore file, this work is visible to Ship's Force **via reports sent to the ship**.

1.3.2 Requirements. All work requiring an expenditure of man-hours, material or a combination of both requires a work candidate (OPNAV 4790/2K) to document the identified requirement. Pushed and pulled CMP tasks are already formatted as OPNAV 4790/2Ks when transferred to the CSMP shore file. The OPNAV 4790/2K requires certain information to be included by the identifying activity to support the maintenance request and may be authored by activities other than the affected ship. There are three levels of the validation process:

- a. The ship (**Ship Material** Maintenance Officer or 3MC) shall do an initial validation of the work statement to determine if there is enough information for the designated representative (e.g., **Ashore Ship's Maintenance Manager**, Fleet Maintenance Activity Ship Superintendent, Project Manager, etc.) to understand the requirement.
- b. The **Ashore Ship's Maintenance Manager** working with members of the Maintenance Team is responsible for requirement validation, and will determine whether there is real need (objective evidence) and, if so, will also verify the requirement's urgency.
- c. Final validation is the responsibility of the **Ashore Ship's Maintenance Manager**. The **Ashore Ship's Maintenance Manager** ensures that the scope of the work is adequately defined and technically accurate before authorizing the work. This is the final product screened and brokered to a planning or execution activity.

1.3.3 Elements. A valid work candidate will provide the following key data elements at a minimum. The blocked numbers to the right of each item reference a OPNAV 4790/2K data block.

- a. Configuration information automatically entered from the master configuration database (Configuration Data Manager's Database/Ship's Configuration and Logistics Support Information System) by the shipboard system:
 - (1) Ship Unit Identification Code [1]
 - (2) Work Center Job Control Number [2]
 - (3) Allowance Parts List/Allowance Equipage List [4]

(4)	Ship Name	[A]
(5)	Ship Hull Number	[B]
(6)	Equipment Noun Name	[5]
(7)	Equipment Identification Code	[14]
(8)	Location	[16]
(9)	Ship Work List Item Number	[56]
(10)	References	
b.	Job Sequence Number	[3]
c.	Equipment Status Code	[7]
d.	When Discovered Date	[17]
e.	Deferred Date	[26]
f.	Symptoms and Supporting Information	[35]
g.	First Contact Name	[38]
h.	Priority	[41]
i.	Type Availability - (Recommended Accomplishment Level)	[42]
j.	Required Delivery Date	[28]
k.	Recommended resolution	[35]
	(1) Master Job Catalog, if applicable	
	(2) Port Engineer's Notes	
	(3) Additional references	
l.	Maintenance Action Requested	[35]
	(1) Assessment	
	(2) Repair	
	(3) Modernization	
m.	Maintenance Figure of Merit	In CSMP Shore File
n.	Initial Estimate (man days & material)	In CSMP Shore file
o.	TYCOM Screening Code	[45]
p.	TYCOM Screening Remarks	In CSMP Shore File

1.3.4 Guidelines. After a work candidate is created and uplined by an assessment activity or provided and entered into the CSMP shore file by the CMP or other means, it will be reviewed by the **Ashore Ship's Maintenance Manager** with the Maintenance Team. The **Ashore Ship's Maintenance Manager** will use the guidelines below to validate each work statement.

- a. Initial validation will be conducted on each new work candidate to ensure there is sufficient information to understand the requested maintenance action. The originator must populate configuration data elements from the master database by selecting the correct configuration item in a configuration-based system and complete data elements (1) through (7) listed in paragraph 1.3.3a. of this chapter. If the ship is the originator then data element (8) must also be present. All work candidates created in an ad-hoc mode or with an incorrect configuration item (and therefore incorrect configuration data) will be returned to the originating activity for cancellation and recreation.

- b. If configuration data in the master data base is incorrect (e.g., Allowance Parts List/Allowance Equipage List, Hierarchical Structure Code (Ship Work List Item Number) references, location, etc.), the **Ashore Ship's Maintenance Manager** shall act to correct the data at its source. The **Ashore Ship's Maintenance Manager** may request additional logistic assistance from the Configuration Data Manager to determine and document the correct data.
- c. When an initially validated work candidate is accepted as complete, the **Ashore Ship's Maintenance Manager** will then determine if there is enough objective evidence of need to validate the requirement. If not valid, the work candidate will be returned to the originator and cancelled.
- d. CMP material assessments may be accomplished outside of a depot maintenance period to allow for proper planning and preparation of **resulting** work during a depot maintenance period. However, CMP maintenance should be scheduled and executed during depot maintenance periods.
- e. If during validation, the Maintenance Team finds inaccurate configuration data or has questions concerning the necessity of a "Pushed" CMP work candidate, they will contact the appropriate maintenance planning activity prior to returning or cancelling the work candidate.

1.3.5 Validation.

- a. Validation is the process of reviewing an off-ship work statement to ensure that the correct configuration item (lowest repairable unit, equipment, system, etc.) is properly identified and that there is enough information to determine if the work candidate is required (objective evidence) and, if valid, contains enough information to:
 - (1) Properly determine the correct resolution inclusive of the root cause.
 - (2) Screen to the right maintenance period to support ship operations.
 - (3) Broker to the right activity to perform the work at the most practicable level.
 - (4) Pass to history.
- b. The goal of the validation process is to provide a work candidate that is sufficiently defined, contains correct and complete information, provides an accurate diagnosis, and provides an applicable, effective, and feasible recommended resolution. A properly validated work candidate should provide the planning and executing activities with the ability to understand the requirement without expending additional manpower or time obtaining **required** information. The **Ashore Ship's Maintenance Manager** along with the Maintenance Team validates all off-ship (Type Availability 1, 2 and 3) work candidates before screening them to the planning activity by review of 2-Kilo documentation, personal shipboard observation of conditions, and knowledge of the quality of work candidates written by selected work centers or through additional technical assistance. All validated work candidates **shall** be ship-checked by the **Ashore Ship's Maintenance Manager** or designated representative when practicable. The purpose of this check is to determine the best maintenance action and add to Block 35 (data elements k. and l. in paragraph 1.3.3 of this chapter).

1.3.6 Verification. The **Ashore Ship's Maintenance Manager** may request additional assistance to determine and document the best corrective action. The recommended action will include all pertinent interferences, integration issues, verification of urgency and an initial estimate (data element n. in paragraph 1.3.3 of this chapter). The initial estimate for each job includes mandays, manday rate and material costs. When validated, the **Ashore Ship's Maintenance Manager** will assign a TYCOM Screening Code (data element o. in paragraph 1.3.3 of this chapter) to the work candidate. This shows the job as valid and ready for screening and brokering.

1.4 SCREENING/BROKERING.

1.4.1 Screening and Brokering Work Candidates. The **Ashore Ships Maintenance Manager** validates and screens work candidates continuously as they are documented. Work integration may entail screening multiple work candidates together when possible. Work screening also entails selecting the appropriate level of repair and the best opportunity in which to accomplish the work. The **Ashore Ships Maintenance Manager** makes recommendations on the lowest level of executing activity with the capability and the capacity to accomplish the work during the required time frame, following the guidance of the **TYCOM business rules** (e.g., Volume VI, Chapter 31 of this manual for **Surface Force Ships**).

- a. Management of ship maintenance is best performed by individuals most familiar with the condition of the ship, budgetary considerations and available workforce. (This requires a cooperative effort from the Ashore Ships Maintenance Manager and the Naval Supervisory Authority (NSA) Lead Maintenance Activity (LMA) for Submarine Fleet Availabilities). They have the responsibility to accomplish maintenance, repair and modernization work within available financial resources while balancing operational and technical risk.
- b. The Ashore Ship's Maintenance Manager screens all work candidates to the right time period and maintenance availability (e.g., Chief of Naval Operations (CNO) availabilities, Continuous Maintenance Availability, Window of Opportunity (WOO), Emergent Availability). Determination includes balancing operational schedule, material readiness requirements and cost concerns to maximize maintenance productivity (material readiness/related maintenance cost).
- c. All work screened by the Ashore Ship's Maintenance Manager to be accomplished aboard ship will be electronically visible to the NSA (LMA for Submarine Fleet Availabilities). Work assigned to the NSA (LMA for Submarine Fleet Availabilities) will be tasked in accordance with Ashore Ship's Maintenance Manager brokering determination. TYCOM approval is required if the initial brokering determination needs to be changed.

1.4.2 Screening/Brokering. Although they may appear to be accomplished simultaneously, screening and brokering are actually two distinct processes.

- a. Screening. Determines and assigns the work candidate to the right time period and maintenance availability. Determination includes balancing operational schedule, material readiness requirements and cost concerns to maximize maintenance productivity (material readiness/related maintenance cost).
- b. Brokering. Determines and tasks the right activity to perform the work based on business case analysis, material availability, experience, tool requirements, personnel requirements, special considerations (Environmental, Health and Safety) and capacity.

1.4.3 Key Data.

- a. The validated work candidate contains the following key data elements to aid in the screening and brokering process:
 - (1) Configuration Item (maintenance object) identification.
 - (2) Symptom (OPNAV 4790/2K - Block 35).
 - (3) Expected scope of preventive/corrective/alterative maintenance (OPNAV 4790/2K - Block 35).
 - (4) Required Completion Date (RCD).
 - (5) Level of Maintenance (TYCOM Code 1,2,3).
 - (6) Identification of a Master Spec Catalog item (pre-planning data).
 - (7) Priority (Figure of Merit).
- b. All OPNAV 4790/2Ks in the Master File should be screened and brokered to a maintenance availability within eight days after being uploaded from the Shipboard File.
- c. Work candidates will be brokered to the appropriate maintenance activity with the capability and capacity to accomplish the work during the required time frame. When practicable, Fleet Maintenance Activity capacity will be utilized first.
- d. Available capacity will be judged after applying Maintenance Figure of Merit and Deadline Date. For Surface Force ships, this determination is made through a coordinated effort between the Project Manager, Ashore Ship's Maintenance Manager, RMC Ship superintendent and the Maintenance Team Multi-Ship Multi-Option representative (If under a Multi-Ship Multi-Option contract).

- e. The cause and effect relationship between screening and brokering must be exercised to maximize maintenance productivity. This may require negotiation with the ship and/or maintenance activity to adjust the **Deadline Date**.
- f. Other considerations for screening and brokering:
 - (1) Synergistic relationship between work candidates exist.
 - (2) Splitting responsibility.
 - (3) Third party access.
 - (4) Port loading.
 - (5) RMC Production Department training requirements.

1.4.4 Guidelines.

- a. Validation, screening and brokering will be accomplished continuously. The **Ship Material Maintenance Officer** will provide recommendations to the **Ashore Ship's Maintenance Manager**. The **Ashore Ship's Maintenance Manager** will use the guidelines below to screen and broker work candidates to the proper availability.
- b. All work will be screened to an availability created and numbered in accordance with the business rules in Appendix A of this chapter.
- c. Work candidates shall be screened to the following type of availabilities: CNO, Continuous Maintenance (CM), emergent or unfunded. No other type of availability shall be used.
 - (1) CNO Availability. The work candidate is best performed during the scheduled CNO availability. These work candidates include major Ship Alterations and repairs that require support services and coordination.
 - (2) Continuous Maintenance Availability. Based on ship availability, priority of the job, business case analysis, periodicity or other consideration, the maintenance should be performed during a scheduled **Continuous Maintenance Availability** or during a window of opportunity permitted by ship's schedule.
 - (3) Emergent Availability. Emergent work is performed at greater cost than work planned and completed in other availabilities. The criteria to be used to qualify work as emergent is provided in **TYCOM business rules (e.g., Volume VI, Chapter 31, Paragraph 31.3.3 of this manual for Surface Force ships)**.
 - (4) Unfunded Availability. This availability is reserved for work candidates, which should be shown as backlog or are of such low priority they are unlikely ever to be accomplished.
- d. Brokering shall be as follows:
 - (1) Work candidates for technical assistance, assessment or inspection will be brokered to the RMC **Fleet Maintenance Activity** or another technical activity.
 - (2) Work candidates will be brokered to the lowest level of maintenance activity, filling Fleet Maintenance Activity capacity first, based on the following criteria:
 - (a) Material availability.
 - (b) Capability:
 - 1 Experience.
 - 2 Available Production Resource Tools.
 - 3 Available qualified/certified personnel.
 - 4 Ability to comply with Environmental, Health and Safety regulations.
 - (c) Work center capacity.

(d) Funding.

1.4.5 Additional Requirements for Scheduled Jobs Pushed by CMP. (Surface Force ships only) Since jobs pushed to the CSMP by the CMP are mandatory tasks directed by proper Technical Authority, further screening and brokering restrictions apply.

- a. Certain fields on the work candidate cannot be changed, including job summary, problem description, recommended solution, deadline date and maintenance level.
- b. The task must be accomplished by an off-ship maintenance activity, not by Ship's Force. Organizational-level requirements are scheduled by Planned Maintenance System (PMS), not by CMP.
- c. The job cannot be cancelled or passed to history by the Maintenance Team, or customer completed without being screened to an availability. **If cancellation is requested, the CMP item must be adjudicated by proper Technical Authority and approved for cancellation as dictated later in this chapter.**
- d. Generally, the job **shall** be screened to a defined maintenance period instead of to the year-long continuous maintenance availability. When operational, equipment condition requirement or other scheduling issues make this impractical, the year-long continuous maintenance availability may be used for non-depot jobs. However, jobs screened to this availability will be considered to be in Limbo after the jobs deadline date without consideration of the availability end date (see paragraph 1.4.5.g.(2) of this chapter).
- e. The job may not be screened to an emergent maintenance period. Planned maintenance does not warrant the use of emergent maintenance money. This requirement does not preclude pulling a task from the CMP when needed and screening it to an emergent maintenance period.
- f. If the job is screened to the unfunded availability or to an availability that begins more than 90 days after the job's deadline date, a "notification" is triggered by the CMP software to notify the appropriate Technical Authority and a Departure From Specification (DFS) shall be submitted. The **Ashore Ship's Maintenance Manager** comments will be reviewed and the Technical Authority will either approve or disapprove the DFS. The **Ashore Ship's Maintenance Manager** shall then rescreen the job to an appropriate availability in accordance with the guidance provided in the DFS. This functionality is referred to as the "Notification Process".
 - (1) If the **Ashore Ship's Maintenance Manager** determines that the job should not be accomplished (as opposed to not accomplished until after the deadline date), the task should be screened to the unfunded availability and comments entered. Depending on whether the notification is administrative or technical, the job will be adjudicated in the following manner:

NOTE: THE SUBSTITUTED WORK CANDIDATE WILL BE SUBJECT TO THE SAME PUSHED TASK RESTRICTIONS DESCRIBED IN THIS SECTION.

- (a) Administrative: If the intent of the task was completed since the Last Accomplished Date by a non-CMP work candidate, provide that Job Control Number in the comment field. If the Planning Activity Engineer agrees that the intent of the task was met by the non-CMP job, the Planning Activity Engineer will cancel the pushed job from the CSMP. If the intent of the task is covered by a non-CMP work candidate that is currently open and in planning or execution, the Planning Activity Engineer will substitute the pushed job with the non-CMP work candidate and cancel the pushed job from the CSMP. If the job cannot be accomplished because the component/system no longer exists on the ship, the Planning Activity Engineer will cancel the pushed job from the CSMP and update the configuration records. For all administrative notifications, if the Planning Activity Engineer does not agree with the Port Engineer's comments, the notification will be forwarded to the SDM for resolution.
- (b) Technical: The **Ashore Ship's Maintenance Manager** can technically challenge pushed jobs using the Notification Process. Reasons for technically challenging a job include: non-modernization configuration change, permanent or temporary DFS

- exists, **and/or** authorized modernization upgrade to equipment. If the Planning Activity or SDM disapproves the notification, the CMP software will send an email to the **Ashore Ship's Maintenance Manager** stating (as applicable) task accomplished during a visit/certification/inspection, ship about to decommission and task is low risk, unable to execute task as written, challenge to scope or periodicity of task, etc. All technical challenges will be reviewed by the Planning Activity or SDM for resolution.
- (2) If the **Ashore Ship's Maintenance Manager** determines that the job should be accomplished, but not by the due date, the task should be screened to the recommended availability and comments entered. Reasons for deferring a job past its due date include: a temporary DFS exists making the task unnecessary before the due date, lack of an appropriate maintenance availability by the due date, unable to set required assessment conditions because of a related casualty or other issue, lack of capability/capacity to accomplish the job by due date, etc. Deadline challenges shall be documented using a DFS and must be reviewed and approved by the Planning Activity or for approval and a DFS may be required.
- g. A job not progressing towards execution or approval in the Notification Process is considered to be in "Limbo". The purpose of Limbo is to draw management attention to violations of NAVSEA Technical Authority so that mandatory tasks will be executed or exceptions approved. **Ashore Ship's Maintenance Managers**, RMCs and TYCOMs should resolve Limbo tasks promptly. Jobs should not be in Limbo because all pushed jobs can be challenged using a DFS and the Notification Process. Limbo categories are:
- (1) Unscreened after 30 days. Per the **End to End** process, all 2-Kilos must be screened within 8 days of entry into the shore CSMP; however, CMP tasks not screened after 30 days of being pushed require extra attention to ensure execution or documentation via the CMP Notification Process.
- (2) Open and overdue. Often, tasks are screened to an appropriate availability but are never executed. Sometimes, task deferrals are approved through the Notification Process but then are moved to a later availability without Planning Activity or SDM approval. Open and overdue jobs are particularly troublesome because they are now past the deadline date and do not have deferral approval from Technical Authority via a DFS and the CMP Notification Process. Specific types of open and overdue Limbo jobs include:
- (a) Job is open, screened to a year-long CM availability and past its deadline date.
- (b) Job is open, screened to an acceptable numbered availability (one that starts no later than 90 days after the deadline date or one approved in the Notification Process by the Planning Activity or SDM), but past both the job's deadline date and the availability end date plus 60 days.
- (c) Job is open, screened to an availability that was overturned by SEA 21 and past its deadline date.
- (d) Job is open, unscreened and past its deadline date.
- (3) Overturned and not rescreened. When a task is challenged by the **Ashore Ship's Maintenance Manager** via DFS and the CMP Notification Process but that challenge is overturned by Technical Authority, the **Ashore Ship's Maintenance Manager** receives an email stating that the job must be rescreened to an appropriate availability for accomplishment. Jobs not rescreened to an appropriate availability within 30 days after the **Ashore Ship's Maintenance Manager** is made aware of the ruling are considered in Limbo.
- h. Deferral notifications approved by the Planning Activity or SDM are approved for the availability to which the job was screened when the job triggered a notification. If a job is subsequently rescreened to a later availability, the approval is removed and the screening action must be acted on by the Planning Activity or SDM again. Otherwise, the job will go into Limbo.

1.5 ASSESSMENTS.

1.5.1 Maintenance Team.

- a. All material condition assessments, including tasks for Combat Systems Command, Control, Communications and Computer Readiness Assessments or **Total Ship's Readiness Assessment**, shall be derived from the CMP. Scheduled condition assessments have been validated by an approved Reliability Centered Maintenance analysis to be applicable and effective, and are pushed by the CMP system to the CSMP shore file for the **Ashore Ship's Maintenance Manager** action, based on the ship's last accomplished date and task periodicity. Unscheduled material condition assessments are not, without further evidence of need, considered effective and are thereby not pushed into the CSMP shore file, but can be pulled from the CMP by the **Ashore Ship's Maintenance Manager** or his representative if there is evidence of need (such as degraded performance, errors, or other indication of problems). Scheduled tasks can also be pulled if circumstances warrant, and the Last Accomplished Date will be properly updated. The **Ashore Ship's Maintenance Manager** with help from the Maintenance Team shall review all 2-Kilos pushed from the CMP system just as for any other offship 2-Kilo, and broker to the appropriate assessing activity.
- b. Only assessment tasks in the CMP or assessment procedures in the PMS database may be used for assessments. Information addressing assessment requirements found not to be included within the CMP or PMS databases, such as local practices, In-Service Engineering Activity unique items, RMC practices, etc., shall be forwarded using the Technical Feedback Report for review and approval as an acceptable addition to the CMP and PMS databases. If not approved, these practices shall not be used by any activity.
- c. The **Ashore Ship's Maintenance Manager** will make the preliminary determination of the most appropriate source for all off-ship activity work for **their** assigned ships. Decisions made by the **Ashore Ship's Maintenance Manager**, with concurrence from the Maintenance Team, shall be in compliance with policies in this instruction, reference (a), and guidance provided by the cognizant RMC.

1.5.2 Type Commander. The TYCOM shall develop and execute a Memorandum of Agreement in accordance with Volume II, Part I, Chapter 3 of this manual with each supporting RMC to define reporting and administrative relationships between the TYCOM and the RMCs.

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APPENDIX A

AVAILABILITY CREATION AND NUMBERING

1. Specifying Availabilities. A uniform method of specifying availabilities is an essential part of availability management and data collection. No deviation from these protocols is permitted. **An availability is defined as a specified period of time during which maintenance is conducted. Only Type Desk Officers, Type Desk Program Managers, and Ashore Ship's Maintenance Managers are authorized to create availabilities. Availabilities shall include all work completed during a specific time period regardless of executing activity. With exception of the emergent availability, availabilities shall not overlap and work by every activity (depot, Intermediate Maintenance Activity (IMA), Alteration Installation Team, tech assist and Ship's Force) shall be entered into the same availability. Availability numbers are not to be used as a method of segregating the executing activity or the level of work performed. SSGN and SSBN will be exempt from the requirements of this appendix due to use of the existing Logistic Data System (LDS) program. TRIDENT Availabilities are negotiated and established based on the Fleet Scheduling Conference and are not managed by Type Desk Officers, Type Desk Program Managers or Ashore Ship's Maintenance Managers.**
2. Availability Numbering. The availability number consists of the first four digits -- the availability category code and the availability serial number. The Funding Activity Code (FAC) is used to identify the source of funding for any job and is entered at the time of job screening and authorization. The availability numbering system shall consist of:
 - a. A one-digit availability category code.
 - b. A three-digit availability serial number.
 - c. A two-digit funding activity code.
3. Availability Category Code: This code is the first character of the four-digit availability number. These codes are used by all TYCOMs and, therefore, not all codes are applicable to all ships. The stand alone "I" availability is no longer used by the Surface Force.

<u>CODE</u>	<u>TITLE</u>
A	ALONGSIDE SCHEDULED CONTINUOUS MAINTENANCE
B	DOCKING SELECTED RESTRICTED AVAILABILITY (DSRA)
C	SELECTED RESTRICTED AVAILABILITY (SRA)
D	COMPLEX OVERHAUL
E	EXTENDED INCREMENTAL SELECTED RESTRICTED AVAILABILITY
F	EXTENDED DOCKING SELECTED RESTRICTED AVAILABILITY (EDSRA)
G	EXTENDED SELECTED RESTRICTED AVAILABILITY (ESRA)
H	DOCKING INCREMENTAL SELECTED RESTRICTED AVAILABILITY (DISRA)
I	INTERMEDIATE MAINTENANCE AVAILABILITY
J	INCREMENTAL SELECTED RESTRICTED AVAILABILITY
K	INTERIM/EMERGENT DRY DOCK
L	DOCKING PHASED MAINTENANCE AVAILABILITY
M	PHASED PLANNED MAINTENANCE AVAILABILITY
N	INACTIVATION AVAILABILITY (INAC)
O	POST DELIVERY AVAILABILITY
P	CONTINUOUS AVAILABILITY (YEAR LONG CM)
Q	POST SHAKEDOWN AVAILABILITY

R	REGULAR OVERHAUL
S	SELF AVAILABILITY/SHIP TO SHOP AVAILABILITY
U	UNFUNDED
V	PLANNED INCREMENTAL AVAILABILITY (PIA)
W	DEPOT MODERNIZATION PERIOD
Z	VOYAGE REPAIRS (PER TITLE X)/STRIKE FORCE INTERMEDIATE MAINTENANCE ACTIVITY
1	DOCKING PLANNED INCREMENTAL AVAILABILITY (DPIA1)
2	DOCKING PLANNED INCREMENTAL AVAILABILITY (DPIA2)
3	DOCKING PLANNED INCREMENTAL AVAILABILITY (DPIA3)
4	PLANNED INCREMENTAL AVAILABILITY (PIA1)
5	PLANNED INCREMENTAL AVAILABILITY (PIA2)
6	PLANNED INCREMENTAL AVAILABILITY (PIA3)
7	REFUELING COMPLEX OVERHAUL (RCOH)
8	NOT USED

4. Availability Serial Number. The availability serial number is the same three character serial field currently used in **Regional Maintenance Automated Information System (RMAIS)**. This entry is made in the “serial” field of the **maintenance data system** availability editor window. There are five authorized serial codes used to designate availabilities.

- a. **Alongside Availability (XAZ)**. The XAZ availability is intended to be a planned CM availability, such as a **Continuous Maintenance Availability**, over a specified period of time determined by the ship’s operational schedule. The TYCOM will schedule the availability during the normal fleet scheduling process. A nominal time frame for availability length is no less than two weeks and no more than six weeks. A ship is not to get underway during any period of the availability. There is no limit to the number of XAZ availabilities that may be scheduled during a year. The first character indicates FY at availability start. The last character indicates a specific XAZ availability during that FY. If the number of availabilities in a single FY results in the Z character being greater than 9, alphabetical characters will then be used beginning with “A”. Sequential serial number assignment is desired, but the occasion may arise when a significant schedule change allows for a new availability to be scheduled prior to an existing availability. In this unique case availability may be created using an out of sequence serial number. This eliminates the need to move jobs that are already screened in **RMAIS and Navy Maintenance Database and additional maintenance data systems**. Availabilities may be scheduled in RMAIS for future years using notional time frames and the exact dates can be adjusted later once a more precise schedule is promulgated. All executing activities may be scheduled to work during this availability. If a job scheduled for completion is not started then it must be moved into another availability and the availability closed on the scheduled completion date. The fact that the job was not completed will be reported in the availability completion report.
- b. **CNO Scheduled Availability (XCZ)**. The XCZ availability is the scheduled CNO availability promulgated in the OPNAV 4700 Notice. These availabilities are normally conducted in a shipyard under the direct supervision of the Naval Supervisory Authority. All major modernization programs will be scheduled for CNO availabilities. Other executing activities may conduct work during these availabilities pursuant to the contractual limits imposed by the shipyard and the Naval Supervisory Authority. Notional CNO availabilities may be established for years beyond the scope of the OPNAV Notice to support long-term work item placement. The first character indicates FY at availability start. The last character indicates a specific XCZ availability during that FY. Software programs require that only one contract solicitation may be recorded against a given availability, therefore the situation may arise when two availabilities must be simultaneously executed. In this case the same type of availability will be used and the next sequential number assigned.

- c. Year-long Continuous Maintenance Availability (XCM). The XCM availability is a year-long availability for the scheduling and completion of work items that are not accomplished during any other scheduled availability. A job is not to be kept in the XCM availability if it is accomplished in an XCZ or XAZ availability. The first character indicates the FY.
 - d. Year-long Emergent Work Availability (XEM). The XEM availability is for the completion of emergent work items as defined in Volume VI, Chapter 31 of this manual. Jobs screened to an XEM availability are paid for using emergent work funding. Items assigned to this availability will not be moved into any other availability and will remain in the XEM availability. Emergent work will not be conducted in a XCZ availability. Emergent work that is discovered during a CNO availability will be added to the availability and paid for using CM funding, for example, work required to support light off or sea trials. The first character indicates the FY.
 - e. Multi-year Unfunded (UNF) availability. The UNF availability is for those items for which there is no realistic expectation that they will be funded even in the out years but must be maintained for material history purposes. It is also for those jobs with a Maintenance Figure of Merit such that there is a low probability of accomplishment, but the job remains valid. These jobs will be screened to the UNF availability but will not be authorized in RMAIS.
5. Availability Category Code (Aircraft Carriers). The codes in this section are authorized for use on all Aircraft Carrier availabilities at Norfolk Naval Shipyard.

CODE	AVAILABILITY ID	EXAMPLE
A	XRZ	9R1 - JCNs ASSIGNED TO NNSY (RRC) FOR ACCOMPLISHMENT BY FMS SHOP "RUN CONCURRENT WITH CNO AVAILABILITY".
A	XSZ	9S1 - JCNs ASSIGNED TO NNSY (OLD SIMA SHOP) FOR ACCOMPLISHMENT BY FMR SURFACE SHOP TO "RUN CONCURRENT WITH CNO AVAILABILITY".
P	NXX	N09 - ORIGINATING WORK CENTER FOR 2009 CHANGES YEARLY CALENDAR.
P	990	990 - JCN REQUIRES SCD TO BE SUBMITTED. STATIC AVAILABILITY CODE.
P	991	991 - SCD WRITTEN/SUBMITTED AWAITING APPROVAL. STATIC AVAILABILITY CODE.
P	992	992 - TYCOM HOLD FOR REVIEW/INVESTIGATION. STATIC AVAILABILITY CODE.
P	REJ	REJ - REJECTED BACK TO SHIP FOR SF ACTION. ACCOMPANIED WITH TYCOM REMARKS. STATIC AVAILABILITY CODE.

CODE	AVAILABILITY ID	EXAMPLE
P	N43	N43 - SHIP ASSIGNED (SMM OFFICE) TA1, 2, 3. TA4 REQUESTING ACCOMPLISHMENT DURING CNO AVAILABILITY. STATIC AVAILABILITY CODE.
P	BDF	BDF - DEFERRED BASELINE JCN FOR REASSIGNMENT AT A LATER DATE. STATIC AVAILABILITY CODE.
P	XSM	9SM - JCN ASSIGNED TO NNSY (OLD SIMA SHOP) FOR ACCOMPLISHMENT "OUTSIDE CNO AVAILABILITY". CONTINUOUS MAINTENANCE RUNS FISCAL YEAR. FUNCTIONS THE SAME AS THE 9CM/0CM BUT ONLY PROCESSES TA2 FOR NNSY. ASSIGNED TO FMR SURFACE SHOP.
P	XRМ	9RM - JCN ASSIGNED TO NNSY (OLD RRC) FOR ACCOMPLISHMENT "OUTSIDE CNO AVAILABILITY". CONTINUOUS MAINTENANCE RUNS FISCAL YEAR. FUNCTIONS THE SAME AS THE 9CM/0CM BUT ONLY PROCESSES TA2 FOR NNSY. ASSIGNED TO FMS.
P	CIS	Commercial Industrial Services approved by TYCOM
P	DIQ	Commercial Preservation Work approved by TYCOM - Indefinite Delivery, Indefinite Quantity
P	MAC	Commercial Deck Work approved by TYCOM - Multiply Award Contract
S	SXX	S09 - SHIP SELF AVAILABILITY 2009 CHANGES YEARLY CALENDAR.
U	UNF	UNF - UNFUNDED. STATIC AVAILABILITY CODE.

X, XX = YEAR Z = SEQUENTIAL NUMBER

6. Funding Activity Code. The FAC is a two-digit exportable field in RMAIS. A FAC must be entered for every non-TYCOM funded 2-Kilo prior to being screened and brokered. Any member of the maintenance team authorized to screen work may enter a FAC. The FAC table is NAVSEA controlled. The approved FACs are:

<u>CODE</u>	<u>TITLE</u>
AA	TYCOM CM NON-NUCLEAR
AB	TYCOM EM NON-NUCLEAR
AC	TYCOM DIVING SERVICES
AD	TYCOM FLEET ALTERATION (NON NUCLEAR)

AE	TYCOM FUNDED SEMAT (ETC) SHIP'S FORCE ASSISTANCE
AF	TYCOM NUCLEAR MAINTENANCE/REPAIRS
AG	TYCOM NUCLEAR ALTERATION
AH	TYCOM FUNDED CNO SCHEDULED AVAILABILITY MAINTENANCE
BA	NAVSEA NUCLEAR ALTERATION
BB	NAVSEA ORDNANCE ALTERATION (ORDALTS)
BC	NAVSEA NON-NUCLEAR PROGRAM ALTERATION
BD	NAVSEA - UNIQUE - NON-NUCLEAR (INCLUDES ALTERATION DEVELOPMENT, TECHNICAL SUPPORT)
BE	NAVSEA - UNIQUE - NUCLEAR AND/OR REFUELING
BF	NAVAL SHIPYARD MISSION FUNDED
BG	SRF MISSION FUNDED
CA	IMA FUNDED MAINTENANCE
CB	IMA FUNDED FLEET ALTERATION
DA	ADMINISTRATIVE SUPPORT NON-NUCLEAR (PRORATABLE) INCLUDING DSA FUNDED
DB	ADMINISTRATIVE SUPPORT SERVICES NUCLEAR (PRORATABLE)
EA	SHIP'S FORCE MAINTENANCE/REPAIRS
EB	SHIP'S FORCE - SELF HELP HABITABILITY
FA	TECHNICAL SUPPORT: SPAWAR SSC, RMC (MISSION FUNDED)
FB	TECHNICAL SUPPORT: SPAWAR (SEPARATE FUNDING ONLY)
GA	VRT-N, VRT-M, ALRE
HA	NAVAIR (CAFSU, NAWC, FAA, ASIR)
HB	NAEC LAKEHURST NJ
HC	NAWC CHINA LAKE
HD	NAWC PT MUGU
HE	NAWC PAX RIVER
HF	NAWCAD ST INIGOES MD
IA	NSWCCD/DAVID TAYLOR
IB	NSWCCD/SSES
IC	NSWCCD/PHD
ID	NSWC CRANE
IE	NSWC PANAMA CITY
IF	NSWC NEWPORT
IG	NSWC KEYPORT
IH	NSWC LOUISVILLE
JA	SPAWAR (ALTERATION INSTALLATION TEAM)
KA	ESU

- OO OTHER - EXPLAIN IN REMARKS
- VV VISITING SHIP SUPPORT (FOREIGN NAVY)

7. Example Cases: The FAC is designed to be applied from a user perspective. For example, if Naval Surface Warfare Center, Carderock Division (NSWCCD)/Ship System Engineering Station (SSES) plans to use an Alteration Installation Team to install an alteration and they are funded for the install, then the maintenance team would select the FAC for NSWCCD/SSES. The maintenance team is not expected to know if it was OPNAV or the TYCOM that funded SSES, this is beyond their level of knowledge and those agencies are expected to track their own funds. In this case a FAC of “IB” would be applied. The following table provides examples of how the various codes can be applied to common availabilities:

Availability Category	Availability Serial	Fund Activity Code
A, K, X, Z	XAZ	AA, AC, AD, AE, BB, BC, FA, FB, VV, OO (Note: 1)
B, C, H, J, K, L, M, N, R, T, W	XCZ	AA, AC, AD, AE, AH, BB, BC, BF, DA, FA, FB, OO (Note: 2)
P	XCM	AA, AC, AD, FA, FB, OO (Note: 3)
P	XEM	AB, BF, BG, VV, OO (Note: 4)
U	UNF	NONE

NOTES

- Note 1:** The primary fund activity code is AA for the alongside availability as most work is TYCOM funded maintenance. Commander, Naval Surface Force Atlantic ships should not use codes CA or CB unless the IMA becomes a fleet funded activity as it is in the Pacific region. Pacific Fleet ships would use CA for IMA work performed during this availability. The voyage repair Availability Category should be used for scheduled voyage repairs using either the AA or AB activity code as appropriate, the XEM availability should not be used for voyage repairs.
- Note 2:** The primary fund activity code is AH and a common additional code is BC. In Atlantic Fleet any IMA work would use the AA code, Pacific Fleet ships would use CA for IMA work performed during this availability.
- Note 3:** Primary FAC is AA for TYCOM funded maintenance.
- Note 4:** Primary FAC is AB indicating ERATA expenditure. In some cases BF or BG may be used as dictated by each region.

Examples:

- a. A ship entering a scheduled CNO docking availability in FY07 will have an availability number consisting of a “B” for the Availability Category Code and the serial will use the XCZ format. The full availability number will be B7C1 as this will be the first CNO availability for this ship in FY07. The “B” is entered in its own field in RMAIS as described above using the availability drop down menu. The three digit serial is manually entered in the “serial” data field of the RMAIS window.

- b. A ship entering an alongside three-week CM availability will use “A” as the Availability Category and the XAZ format for the serial. So the third alongside CM availability for FY06 will be an A6A3 availability. Again the first digit and the last three digits are entered in separate RMAIS entry fields. The FAC is applied on a job-by-job basis and is not tied to the availability number. In a single availability you can have several executing activities and multiple FACs across all the jobs screened to the availability. For example, Job EA04-1111 might be a pump repair screened to Supervisor of Shipbuilding and paid out of TYCOM CM funds so that job will have “AA” FAC assigned when it is screened to the A6A3 availability.

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VOLUME II
PART II
CHAPTER 2
SHIP WORK PACKAGE PREPARATION

REFERENCES.

- (a) NAVSEAINST 4710.8 - Cost and Performance Reporting for CNO Scheduled Ship Maintenance Availabilities
- (b) NAVSEA S0300-B2-MAN-010 - Supervisor of Shipbuilding Conversion and Repair Operations Manual

LISTING OF APPENDICES.

- A Prorate Items with Explanations
- B Master Specification Catalog Maintenance Office Guidelines
- C Surface Ship Prorate Process
- D Surface Force Ship Maintenance and Modernization Milestones
- E Aircraft Carrier Navy Modernization Process Milestones
- F Planning Priority Matrix
- G Depot Planning Priority Schedule (MSMO)
- H₁ Process Flowchart Firm Fixed Price CNO Availability
- H₂ Process Flowchart Firm Fixed Price CMAV or Emergency Availability
- H₃ Process Flowchart Firm Fixed Price MSMO CNO Availability
- H₄ Process Flowchart Firm Fixed Price MSMO CMAV Availability

2.1 **PURPOSE.** To establish ship maintenance work items and specification package preparation procedures, milestones and business rules. These rules apply to Regional Maintenance Centers (RMC), Commander, Naval Surface Force Pacific; Commander, Naval Surface Force Atlantic; Commander, Naval Air Forces Atlantic; Commander, Naval Air Forces Pacific; Systems Commanders (sponsoring Program Alterations) and other Alteration Installation Team (AIT) Sponsors.

2.1.1 **Prorated Business Rules.** This chapter also provides prorate business rules including:

- a. Defining common prorates, those prorates to be assigned to specific alterations, and those Type Commander (TYCOM) operational prorates (Appendix A).
- b. Providing a simple consistent method to divide those prorates between Program Alterations, Fleet Alterations, maintenance and repair items.
- c. Providing a coast specific "Prorate Factor" used in planning as part of the Cost Benefit Analysis of the Ship Change (SC) Document to estimate installation cost of the alteration. Paragraph 2.4.6.2 of this chapter lists the Prorate Factors.

2.1.2 **Responsibilities.**

- a. The Life Cycle Manager/Ship Program Manager (SPM) is responsible for the planning, budgeting and execution of the approved Program Ship Modernization.
- b. The TYCOM is responsible for the planning, budgeting and execution of the approved Fleet Ship Modernization, ship repair and ship maintenance.
- c. The Ashore Ship's Maintenance Manager is responsible for the execution of each ship's Maintenance and Modernization Business Plan (MMBP) and the division of the prorate percentages between Fleet and Program based on the business rules herein.

2.2 **SCOPE.** The goal of the effort is to deliver effective maintenance and modernization while capturing efficiencies. The cost avoidance can then be put to use in accomplishing additional maintenance. This chapter introduces work package preparation improvements that leverage existing planning information and process

capabilities to make final work package content decisions closer to the time work is actually scheduled to begin. This will significantly reduce the churn in the work package content and support timely delivery of all work desired for the Chief of Naval Operations (CNO) availability. This includes the depot level repair and modernization package, Ship's Force, Intermediate Maintenance Activity and AIT modernization work. Effective financial management of ship maintenance and modernization depends upon use of return cost data in planning for future installations. Upon completion of each availability, the participants must use the availability completion report return cost data to update Navy Data Environment modernization cost estimates and the next fiscal year business plan. Return costs for repair work will also be used to populate and validate costs estimates that are resident in the Master Specification catalog. A disciplined prorate distribution process, coupled with updates to the Navy Data Environment database and the business plan will help modernization financial planning and reduce cost surprises both before and during availability execution.

2.3 EXECUTING ACTIVITY PLANNING. Work Package Preparation process improvements include long-term contractual relationships and Multi-ship Multi-option (MSMO) contracts, with our executing activities and private ship repair yards. The Executing Activity (EA) is the public or private enterprise that is assigned or awarded the responsibility for accomplishing the actual production work to effect modernization and repairs to surface force ships/aircraft carriers. For the most part, the EAs will perform the planning for accomplishment of the work that they will execute. All work, whether CNO availability, continuous maintenance or emergent work will have a Ship Specification Package (SSP) prepared in the **appropriate maintenance database** work planning and execution tool. The exception to EA planning is first of ship class ship alteration advance planning (drawing preparation and material ordering). This will be performed by the assigned planning yard. The EA will plan subsequent ship alteration installations provided they are not of such a complex nature that it is determined that these should be assigned to the planning yard. In most cases, as part of the planning effort, the EA will prepare the actual work specification (accomplished today in the **Navy Maintenance Database (NMD)** for depot level or in another maintenance Automated Information System for I-Level). The exceptions to the EA work item preparation is that the government may elect to accomplish work item development to provide an avenue to train government personnel in the critical skill sets used during the work item development process and/or to provide surge capabilities for the EA during peak work loading.

2.4 MASTER SPECIFICATION CATALOG.

2.4.1 Work Package Preparation. The Work Package Preparation process will leverage the large library of planning documents that exist today and are currently stored in Master Specification Catalogs (MSC). The MSCs provide a ready resource of technically correct and current work items that are universally accessible for use. The vast majority of these documents can be reused for planning future repair actions. The primary purpose of the MSC is to reduce maintenance costs by:

- a. Reducing planning efforts.
- b. Identifying and promoting best practices.
- c. Effectively managing lessons learned.
- d. Minimizing delays associated with maintenance planning.
- e. Providing a cost estimate for the work item.

2.4.2 Use of the Master Specification Catalog. Use of the MSC by Maintenance Teams and Planners at maintenance activities is mandatory. Processes are established to allow all users to recommend content and provide feedback regarding the quality of specifications and templates. The Depot level MSC can be accessed through the NMD application. The Depot level catalog consists of master specifications, specifications used directly without any modification, and templates that can be used with minor modifications. NMD has been modified to capture the contractors' planning estimates and actual return costs. This allows standard costs to be developed for the specifications residing in MSC. The D-Level MSC is maintained by the Master Specification Catalog Maintenance Office (MSCMO) at Supervisor of Shipbuilding Conversion and Repair, Bath, Maine (SUPSHIP Bath), who is assigned to standardize all templates to the maximum extent possible to ensure the specifications that reside there are technically correct and reflect the most current guidance. Appendix B provides the general guidelines for template preparation, processing and maintenance. The MSCMO will incorporate the directives of Naval Sea Systems Command (NAVSEA) Standard Specification for Ship Repair and Alteration Committee, and Volume VII,

- (3) The Program Modernization input to the MMBP is the Extended Planning Hull Maintenance Plan which provides man-days and material costs for each scheduled SC. The RMC multiplies the current port man-day rate by the total number of program man-days, by appropriation, and adds locally procured material costs to provide total “installation dollars” for Program Modernization.

NOTE: THE TOTAL DOLLARS USED TO DETERMINE THE PRORATE PERCENTAGES DO NOT INCLUDE SERVICES, GROWTH OR AWARD FEES.

- (4) The proportion of TYCOM dollars and Program dollars relative to the total dollars will provide the percentage of prorate costs assigned to TYCOM and Program respectively.
- b. In accordance with Maintenance and Modernization Process milestones as shown in Appendices D and E:
 - (1) TYCOM/PEO SHIPS issues the Letters of Authorization for all modernization.
 - (2) The work package that began definition at the Integrated Planning Conference is further refined with a 50% lock on repair items. The Project Manager provides a list of expected prorated items, with work item numbers assigned, using Appendix A for guidance, for all Program and Fleet Letter of Authorization authorized modernization and TYCOM repair items.
 - (3) All SCs listed in the Letter of Authorization, except ST1 and ST2 SCs, are mature, impact approved or are removed from the Letter of Authorization (except for ST1 and ST2 SCs, Programmed but not Authorized SCs will be removed at this time). This locks the prorate distribution percentages. This milestone obligates the cost of prorates based on the locked Letters of Authorization and MMBP budget of the repair and maintenance package.
 - (4) If one of the participants elects to remove maintenance, repair or modernization work from the availability work package after 80% lock, that participant is still responsible for payment of the actual prorate costs incurred, as of the date of the withdrawal, on execution planning for the removed work. In the event a Program SC owner declines to comply with paying the prorate charges, payment of the delinquent charges will be a prerequisite for adding the SC to the Letter of Authorization for the next availability for which the SC is programmed.
 - (5) If new modernization work is added after 80% lock, the activity requesting the SC will incur all additional prorate costs generated as a result of the additional work.
 - (6) A 100% lock is placed on all repair items. Funding is requested from the participating activities. The Naval Supervisory Authority (NSA) must receive funding to support definitization.
 - (7) The modernization, maintenance and repair package is definitized.
- c. If the availability is extended, the additional prorate requirements are paid for by the party(ies) causing the extension.
- d. Once the originally planned growth pool is expended, large increases due to growth (exceeding 2% of the total work package costs) will result in reallocation of prorates.

2.4.6.2 Prorate Factors. The prorate factor is used in the budget process for modernization, repair and maintenance, in order to ensure adequate funding for planned work. The following prorate factors are to be applied to total estimated ship repair cost to forecast the portion of total cost for “Prorate” effort. These factors are based on data from selected Departure Reports for ship repairs completed in 2003 through 2005 and are subject to periodic updates.

	Prorate Factor		
	East coast	West coast	Navy-Wide Average
All Prorate work	33%	33%	33%

2.5 MILESTONES. Package preparation milestones have been developed that support the continuous maintenance philosophy. These milestones are designed to allow a more continuous flow of work to create a work package. Rather than requiring all work to be “locked” at A-240, the milestones now require that only 50% of the work, measured by 50% of the budgeted funds for **repair work during** the availability being committed, be “locked” at A-240. It is expected that this work will be **repair and** major industrial work that is generally known well before A-240. Every effort should be made to include unscheduled and unaccomplished mandatory Class Maintenance Plan work items in the ship’s Baseline Availability Work Package (BAWP) in the work package. Once work is placed in the package, and funding for that work is committed, the EA is authorized to plan that work, order material and expend other funds as necessary to execute the work. It should be the rare exception that work is ever removed from a work package. TYCOM will obtain technical adjudication for any BAWP items prior to the removal of any BAWP item from the work package. It is extremely important that the right work at the right time is placed in the work package. **Operational commitments, port loading or other reasons may require modification to availability schedules and milestones may need to be adjusted accordingly.**

- a. (Surface Force Ships Only) Availabilities that are in the A-720 to A-360 window when rescheduled should not impact the Maintenance and Project Teams ability to meet milestones that begin inside of the A-360 date.
- b. Availabilities that are within the A-360 window may miss milestones due to the compressed timeline, however, every effort should be made to accommodate those milestones lost to compression. There should be no attempt to compress milestones of an availability that is already inside of the A-90 date. The TYCOM, NSA, affected Program Office and LMA will agree on the compressed milestone timeline and enter a Memorandum of Agreement (MOA) for the record dictating the agreement. Items to consider are as follows:
 - (1) The Contracting officer should be notified immediately.
 - (2) Each compression timeline will be different; therefore, adjustment of those milestones lost should be addressed and adjudicated by TYCOM, NSA, affected Program Office and LMA.
 - (3) Where availability compression causes a loss of either the 50% or 80% lock milestone, the 100% lock date should be adjusted to A-90 from A-75 in order to accommodate an excess of scope, plan and estimate requirements which should aide in completion of Final Technical Analysis Report (TAR) and definitization on their regularly scheduled dates.
 - (4) TYCOM, NSA, LMA sign MOA identifying the adjusted milestones.
 - (5) Where applicable, the appropriate package lock date should be met as soon as practical (if lost in the compression) following the change of availability dates. The Class Maintenance Plan (CMP) BAWP should be used to accommodate this event. Repair items on the Current Ship’s Maintenance Project (CSMP) will also be locked based on the highest readiness return on investment (Use Maintenance Figure of Merit screening values where appropriate). An example of this is: The availability is compressed and the 50% or 80% lock milestones were lost in the compression, they should in turn be met as soon as practical.
 - (6) All work items should be scoped, estimated and TAR submitted where those process milestones are lost in the compression.
 - (7) In all cases, the Final TAR and definitization milestones shall be met.
 - (8) In all cases, an Integrated Project Team Development (IPTD) Integrated Planning Conference (IPC) and Work Package Execution Review (WPER) shall be convened to discuss the integration and execution plans regarding the adjusted work package and accommodate Project Team communications regarding changes.

2.5.1 Committed Work at 80% Lock. The milestones require that 80% of the depot level work package be committed at **80%**, and 100% of the Ship’s Force and I-Level work that is planned to be executed during the availability concurrently with the depot level work be identified. This provides a period of time during which this work can be evaluated and placed in the depot level package if necessary. Additionally, all AIT support requirements must be identified no later than **the 80% lock date**.

2.5.2 Committed Work at A-75. At A-75, 100% of the depot level package must be identified, with the activity accomplishing the planning to complete planning by A-60. The EA will then have 30 days to produce an integrated work schedule that will be reviewed at a Work Package Execution Review at A-30. By delaying the final commitment of the last 20% of the depot level work package until A-75 there should no longer be any reason to front load “insurance” work. The new entitled work package preparation process will better reflect the most current priority of maintenance that needs to be performed on the ship. The milestones described above are designed for use by those ships supported with MSMO contracts. For Surface Force Ships, Appendix D describes milestones to be used with Firm Fixed Price (FFP) contracts. Where MSMO contracts are not in effect and no existing Indefinite Delivery, Indefinite Quantity (IDIQ) contracts cover the work contemplated, work packages for Continuous Maintenance Availabilities (CMAV) must be submitted to meet local contracting milestones.

2.5.3 Flow Metric. In order to track the progress of creation of the work package, a work package flow metric has been created. This metric will provide the maintenance team a tool to manage their work package preparation progress. It also provides the RMC Commander and the maintenance teams a leading indicator of the manner in which the ship’s Maintenance and Modernization Business Plan is being executed.

2.6 CONTINUOUS MAINTENANCE AVAILABILITIES. CMAVs are intended to provide the maintenance team with the flexibility required to do the right maintenance at the right time for the right price. An additional intent of CMAVs is to provide the agility required to support the fleet response plan.

2.6.1 Continuous Maintenance Availability Types. CMAVs are established as the only type of availability that will be accomplished on Surface Force ships outside of CNO availabilities for non-emergent maintenance. Fleet Maintenance Activity Availabilities, Restricted Availabilities, Technical Availabilities are no longer authorized to describe ship maintenance availabilities. There are two basic types of CMAVs, scheduled (XAZ) and unscheduled (XCM). CMAV schedules will be reviewed at each Planning Board for Maintenance and will be adjusted as ship’s operational schedules dictate. Schedule adjustment should be requested by the ship via naval message to the Immediate Superior In Command (ISIC), information to the applicable RMC.

2.6.2 Continuous Maintenance Availability Business Rules. The following CMAV business rules have been established to provide guidance for developing work items associated with scheduled and unscheduled repair and modernization availabilities, managing assigned work brokered to both CNO and CMAV availabilities for FFP and MSMO contracts, and establishing priorities for the executing activity to accomplish planning and execution of Work Candidates into work items. This enables the Vision of Entitlement to be realized. The Vision of Entitlement requires a somewhat continuous flow of the planned work items to allow for a continual estimating, work item review and cost definitization process.

2.6.2.1 Applicability. This process is applicable to all personnel involved with writing work items for repair and modernization contracts using work items developed/maintained in NMD in accordance with this manual, Maintenance and Modernization contracts and NAVSEA Standard Items. The start and stop points of the process are when a Work Candidate is brokered from an appropriate IT system into an availability and the production period of the maintenance availability is completed.

2.6.2.2 Ship Specification Package. The Project Manager on behalf of the Maintenance Team shall:

- a. Establish a SSP within NMD Planning for scheduled and unscheduled CMAVs ((XAZ), (XCM) and (XEM)) and set up the availability in NMD to receive Automatic Work Requests (AWR) from Regional Maintenance Automated Information System (RMAIS) electronically in accordance with this manual.
- b. For each Work Candidate that is brokered to the availability in NMD, ensure that the planning date, the “Deadline Date” and the “Availability Number” (in which an availability period can be entered) listed on the Work Candidate is correct, and also include a preliminary man-hour and material cost estimate. Work must be planned and estimated (man hours and material cost) with Long Lead Time Material (LLTM) identified prior to being routed into any NMD execution availability. This planning estimate is necessary to more accurately predict, for a CNO availability, what percent of the package (in dollars), has been authorized at the 50%, 80% and 100% milestones, and for a CMAV (XAZ) and (XCM) availability, will allow us to know if we have adequate funding available in the budget. A minimum of **fourteen calendar days** should be allowed for planning unscheduled (XCM) availabilities before routing a job to an NMD execution availability.

2.6.2.3 Planning. With the creation of an SSP in NMD, the actual Planning start and stop dates for the execution of the work within that SSP will be established. The one exception to this will be the year long CMAV, Scheduled/Unscheduled CMAV (XAZ) and (XCM) (XEM) availabilities.

- a. All valid maintenance items will have a specification prepared in the NMD Planning module in accordance with this manual. All new work will also be written in the planning module of NMD.
- b. When a valid maintenance item is ready for brokering, review of the currently scheduled SSP availabilities in NMD Planning will then determine to which SSP the item should be added. All SSPs existing within NMD Planning will have a date established when that package should be “locked” per the advance planning milestones contained in Appendix D of this chapter. No valid work items can be added to an existing SSP if the current date is past the “lock” milestone date without providing a written detailed description of the rationale used to add it in the “Work Item” comments field.
- c. The priorities for the Planning Activity are then established by the next scheduled availability milestone that is coming due in accordance with Appendix F and G. This could be a CNO, the next scheduled CMAV (XAZ) or year long XCM availability. Process flowcharts appear in Appendices H₁ through H₄ of this chapter. The year long XCM SSP availability will be a work load leveling mechanism for the planning activity and the goal would be to have these items brokered, planned, material ordered, funded, scheduled and ready to start work within 14 calendar days prior to start. The valid maintenance items in the XCM SSP availability will become candidates for scheduled CMAVs and unscheduled XCM execution availabilities (windows of opportunity) that are identified on short notice. These planned work items for MSMO contracts will be routed to NMD execution availabilities that branch off of this year long NMD XCM planning availability. Re-broker those remaining AWRs at the end of the fiscal year, into the next fiscal year long XCM and scheduled CMAV (XAZ) SSP availability. Refer to Appendices H₁ through H₄. Refer to Appendix F to assist in determining priority of planning work.
- d. If the urgency to accomplish any emergency maintenance repairs does not allow for development of a work item prior to the start of work and a work item does not exist in the MSC, then a work item will be prepared after completion of work to document it within NMD. Route these emergent Work Candidates to the applicable SSP planning availability, which can then be forwarded to the NMD execution availabilities where the emergency maintenance work was executed.
- e. The Project Manager will check NMD daily for AWRs received in NMD SSP planning availability, review and validate each AWR to determine scope of work. If the information contained in the AWR is insufficient to write a work item, the Project Manager shall coordinate and manage any required shipchecks.
- f. The RMC will determine who should plan a given availability (other than CNO) based on manpower available either at the MSMO contractor or the Government. (Check Contract Line Item Number verbiage for actual contract requirements.)

2.6.2.4 Planners and Estimators.

2.6.2.4.1 Key Terms. Key Terms as found in Volume VII, Chapter 4, Appendix 4-E of this manual.

- a. Standard Items: Mandatory and non-deviational. There are two types of Standard Items:
 - (1) Standard Items (SI)
 - (2) Local Standard Items (LSI)
- b. Templates: Work Items that can be modified and used for single or multiple ship classes. There are three types of Templates:
 - (1) Standard Work Templates (SWT)
 - (2) Class Standard Work Templates (CSWT)
 - (3) Local Work Templates (LWT)

2.6.2.4.2 Planning/Estimating Process.

- a. Determine if the information contained in the AWR is adequate enough to write a work item. If yes, continue development. If no, check the inadequate box and note reasons for inadequacy, then continue.
- b. Review for MSC Templates as follows:
 - (1) Identify appropriate Ship Work List Item Number that applies for AWR to be planned under.
 - (2) Check/search for an appropriate Master Specification Template such as a Class Standard Work Template, Standard Work Template or Local Work Template that addresses the scope of work identified in AWR.
 - (a) If no applicable template is found, check/search for a previously written work item that is applicable and addresses the scope of work identified in AWR.
 - (b) If no previously written work item is found that is applicable, check/search for a “basic” work item template/format.
- c. Select appropriate Master Specification Template, previously written work item or “basic” work item template/format and initiate planning the work item.
- d. Identify and validate all references, including Liaison Action Requests/Reverse Liaison Action Requests required to complete the work item.
- e. Identify test requirements needed to complete work item. If test procedures are required, obtain from execution site design group, planning yard contractor or In-Service Engineering Activity.
- f. Identify security and certification requirements. Develop technical requirements and Planning Estimate.
- g. Identify repair material required to include long lead-time items and submit to material specialist for procurement.
- h. Determine if there is Hazardous Material involved with the work item.
- i. Review the completed work item for candidacy as a new or revised template for inclusion into the MSC. If a candidate, submit the new or revised template to the local NSA Standards Person for review and subsequent routing to the MSCMO for processing and inclusion into the catalog.
- j. Route completed work item in its preliminary state to the Program Manager queue in NMD to be included in a final review work package compiled in NMD.

2.6.2.5 Maintenance Team Program Manager.

- a. Route review work package of work items to Pre-lim Spec review web site. Web Site Address: <https://www.spear.navy.mil/onlineSpecReview.aspx>.
- b. Review and respond to comments on pre-lim work item review web site.
- c. Route and approve work items to “APPROVED” work item review web site.
- d. Process entire work package and issue.

2.6.2.6 Advanced Planning Manager. The MSMO Contractor will publish the CNO MSMO Package in NMD at A-60 and the CMAV MSMO at A-25. This is an important milestone/metric captured within NMD.

2.6.2.7 Scheduled Availabilities.

- a. Scheduled XAZ availabilities are normally 3 to 6 weeks in duration and are nominally scheduled once per non-deployed quarter during a period when the ship will be in port at least three continuous weeks. The ship, via the ISIC, will schedule XAZ availabilities. RMC requirements will be addressed to the ship via the maintenance team. Adjustments to XAZ availability start dates are inevitable; however, the start dates may not move “forward” if package preparation and work package “lock” milestone dates would be violated by the new start date. In this case, the applicable XAZ CMAV availability must be rescheduled to support the entitled process milestone dates. In general, CMAVs will be scheduled to start on the first weekday after arriving in port and will be scheduled to complete one week prior to the

scheduled underway day. The minimum length of a ship’s uninterrupted period will be three weeks if an XAZ availability is to be scheduled, with the XAZ availability preferably being a minimum length of three weeks. Any XAZ availability that is scheduled without adhering to these minimums should be avoided and work required during that timeframe will be conducted as XCM. Ships and ISICs shall ensure that other in port requirements (training, inspections, etc.) are not scheduled concurrent with an XAZ availability if these requirements will impede scheduled production.

- b. CMAVs will not normally start on weekends or holidays when support for tag-outs and availability start up is limited, and will not be the same day the ship arrives in port. As a result of requiring the XAZ availability to complete one week prior to getting underway, a reduction in premiums is expected by eliminating the last minute rush to complete work to support the scheduled underway. Maintenance teams must ensure that work scheduled for an XAZ availability can realistically be accomplished in the production window. When operational schedule changes occur early enough to allow the scheduling of an additional XAZ availability without violating the milestones discussed in paragraph 2.5 of this chapter, a new XAZ availability should be scheduled when possible rather than executing maintenance in the unscheduled XCM availability. Additionally, the length of an existing XAZ availability may be increased to accommodate changes in operational schedules provided none of the scheduling rules are violated.

NOTE: XCM AVAILABILITIES ARE NOT TO BE USED AS HOLDING QUEUES FOR MAINTENANCE ITEMS.

2.6.2.8 Unscheduled Availabilities.

- a. The unscheduled XCM availability is a single yearlong availability, for the period of 01 October through 30 September, scheduled for each ship every fiscal year. This yearlong availability is used to accomplish maintenance when a ship is not in a scheduled XCM availability or CNO availability. Since the XCM CMAV Windows Of Opportunity (WOO) are potentially short notice, a reduced set of D level milestones is established. Read in three columns as follows:

<u>TASK</u>	<u>RESPONSIBLE ACTIVITY</u>	<u>MILESTONE</u>
WORK SPECS DEVELOPED	RMC OR MSR	WOO-14
WORK PACKAGE DEFINITIZED	RMC OR MSR	WOO-7

- b. No length requirement exists for an XCM availability. These are accomplished as WOOs become available. If a work item is determined to require more than one WOO to accomplish in its entirety, then it may be executed during multiple WOOs provided that it can be broken into several shorter period requirements.

2.6.3 Continuous Maintenance Availability Applicability. The CMAV business rules apply to all XAZ availabilities and XCM. Since the potential exists for CMAVs to become increasingly more complex, an NSA will be assigned for every CMAV. The NSA will typically be the applicable RMC, or naval shipyard (if applicable).

2.6.4 Work Included in Continuous Maintenance Availabilities. All levels of work (organizational, intermediate and depot) shall be included in a single CMAV for a specific availability period regardless of the executor (Ship’s Force, RMC production personnel or contractor). The intent is to integrate all types of work into a single production schedule for a specific CMAV. Separate intermediate and depot availabilities will not be established for the same period of time. Dependent upon complexity of the scheduled maintenance and/or modernization and the number of maintenance activities involved, the Ashore Ship’s Maintenance Manager may include a work item for production scheduling and integration in the work package or bid specifications. If this work item is not used, then the Ashore Ship’s Maintenance Manager will perform this function.

2.6.5 Concurrent Continuous Maintenance Availabilities. It is incumbent upon the Ashore Ship’s Maintenance Manager to ensure that two non-emergent availabilities are not in progress at the same time. Additionally, CMAVs are not to be scheduled concurrently with CNO availabilities. As required, XCM work items meeting the requirements of paragraph 2.6.2.8 of this chapter that are being accomplished in WOOs may overlap with XAZ and CNO availabilities.

2.6.6 Ship Movement During a Continuous Maintenance Availability. In order to maintain focus on the maintenance work package and minimize premium costs, no ship shall get underway during a CMAV other than to support the maintenance availability or to complete sea trials. Maintenance that prevents a ship from being ready for sea within 96 hours will normally only be screened to XAZ availabilities. Ships will notify their ISIC of any production item that will prevent the ship from getting underway within 96 hours. If this work is being conducted within a scheduled XAZ availability, a waiver is not required. It is imperative that the ISIC take a proactive role in ensuring that the integrity of the scheduling process be maintained as it relates to CMAVs. CMAVs must be incorporated into the ship's operational schedule and must remain as a priority for completion.

2.6.7 Continuous Maintenance Availability Metrics. In order for accurate metrics to be obtained, it is imperative that all CMAVs be planned and executed utilizing the appropriate IT systems. The following placement and oversight metrics will be collected to measure the effectiveness of the CMAV process. This is not a complete listing of all CMAV metrics. Volume VI, Chapter 36 of this manual provides additional guidance and discussion on the metrics topic.

- a. Award on time delivery (XAZ only). Scheduled CMAV "on time award" is defined as the percentage of time contract award is made on time or early.
- b. Completion on time delivery (XAZ only). The CMAV completion on time delivery metric calculates the percentage of occasions when a CMAV availability is completed on or before the CMAV end date as recorded in **the appropriate maintenance database**.
- c. Availability churn (XAZ only). The CMAV availability churn percentage is a monthly capture of the dollar value of work items changed, deleted or added in a CMAV work package from contract award until availability completion versus the dollar value of the work package at award for all CMAV availabilities that ended in the current measurement month and the previous two months. This metric is collected by availability and reported in the month the availability completes.
- d. Growth and New Work Premiums. The Growth and New Work Premiums metric is a measure of late work premiums paid as a percent of growth and new work monthly. It does not include authorized work included at the start of the availability as growth reserves for specific work items or execution of pre-priced option items if executed within the scope and schedule as pre-priced. This metric is collected weekly with each change to the original contract award (FFP) or definitization (MSMO) work package transaction being reported one time in the data call for the week in which it was settled for scheduled CMAVs.

2.6.8 Continuous Maintenance Availability Late Work Premium (XAZ only). The CMAV late work premium metric is a measure of the total dollar value of late work premiums paid for CMAV availabilities completed in the current month divided by the sum of the execution contract award (FFP) or definitization (MSMO) and the settled cost of all Request for Contract Changes for that availability.

2.6.9 Continuous Maintenance Planning. Continuous maintenance is the process of scheduling and accomplishing work outside of CNO availabilities. MSMO contracts create a long-term relationship with the EA that accomplishes the continuous maintenance to maintain the ship at an acceptable readiness level. The Ashore Ship's Maintenance Manager will use every scheduled in-port period as an opportunity to accomplish continuous maintenance. Funding for continuous maintenance is included in the ship's Maintenance and Modernization Business Plan. In order to prevent premiums from being accrued, a minimum of 30 days will be allotted between the time depot level work is brokered to the EA and the time work is scheduled to start. A minimum of 40 days will be allotted for work brokered to I-Level activities. This will provide for adequate time to plan the work and acquire the necessary material in an efficient manner. This will allow a Work Package Execution Review to take place at A-21 and for all work to be definitized at A-18. If these minimum thresholds cannot be complied with, the work should be postponed until the next continuous maintenance opportunity. The Ashore Ship's Maintenance Manager may run a business case analysis if there are other factors that might justify the addition of work inside these preferred windows.

2.7 ADVANCE PLANNING STATUS MESSAGES. The Advance Planning Status Messages required by reference (a) should continue to be issued by the activity responsible for planning the ship's CNO availability. Messages should commence at **the completion of the Integrated Planning Conference**. These messages play a vital role in keeping all concerned parties informed of the status of the planning effort. The messages document the

successful accomplishment or failure to achieve milestones and produce deliverables. The Work Package Execution Review meeting, held to review the integrated work production schedule that has been prepared by the EA, is the final opportunity to resolve any work interface or production support issues between the different activities before actual production work begins.

2.8 MAINTENANCE TEAMS EXECUTING MAINTENANCE WITH FIRM FIXED PRICE CONTRACTS.

MSMO contracts are not in place for all surface force ships in the Navy's inventory. Some classes of ships will not receive MSMO contracts as they will be decommissioning soon, others have such a small number in their class that it is not worthwhile to do this. A modified planning milestone table for FFP contracts is included in Appendix D.

APPENDIX A

PRORATE ITEMS WITH EXPLANATIONS

- A. The following items may be shared by all parties participating in the availability. The share will be based upon installation manhours. The manhours will be the sum of Prime (MSMO), Prime Subcontractor and AIT manhours for each maintenance or modernization work item. These are then subtotaled to arrive at the equitable distribution weight for each participating organization. If the total manhours for an AIT work item is less than 2% of the total work package, then the AIT will not be assigned a share of the prorates. Each prorated item below is followed by a brief description.
1. Production Planning (813-10-XXX): The MSMO contractors are required to develop and maintain an integrated production plan for the availability. The plan integrates all repair and modernization work, including AIT work items. All parties gain benefit from the plan which assists in manhour and material planning for the MSMO contractor as well as the repair and Participating **Acquisition Resource** Managers (PARM). AITs will not be included in the share of prorates for this item.
 2. Temporary Services (863-50-XXX): These include ventilation air, compressed air, fire main, cooling water, potable water, shore power, sewer connections and welding leads as examples. These items benefit all and are appropriate for equitable sharing.
 3. Housekeeping (864-90-XXX): Housekeeping includes trash disposal, deck coverings, post workday tidying and final cleaning during the compartment closeout process. Every participant benefits from this service.
 4. Integrated Test Plan (894-90-XXX): The Integrated Test Plan is closely associated with the Production Plan. The Integrated Test Plan benefits every participating repair and modernization manager by showing when they can expect various equipments and services to be ready for use and when their own equipment must be ready for testing. Examples include ship's power which must be available to complete combat systems testing.
 5. Program Management (897-00-XXX): Every MSMO contractor has a small staff which manages the overall availability. These include the availability manager and principle assistants. Every participant benefits from this team.
- B. The costs of the following will be charged to the individual work items.
1. Provisioning Technical Documentation (PTD) (830-21-XXX): PTD is the source document notifying the Supply System that new equipment is being installed on the ship. PTD typically arises from a modernization installation or in repair cases where original equipment is beyond repair, or repair parts are not available, and a substitute must be installed. In all cases the PTD is generated for an individual work item and will be charged accordingly.
 2. Waterfront Liaison Engineering Services (838-10-XXX): Waterfront Liaison Engineering Services are typically required when the Ship Installation Drawings (SID) for a modernization installation have an error or there are interferences not accounted for in the SIDs. It is also possible to need Waterfront Liaison Engineering Services if there are deteriorated structural members/sections which must be analyzed to see if replacement is mandatory or advisable. In all cases the work is tied to an individual work item.
 3. Test Memorandum Development (841-10-XXX): This item is for individual work item testing as compared to the total ship Integrated Test Plan which is shared by all. The individual Test Memoranda are charged to the respective work items.
 4. Technical Support (861-00-XXX): This is technical support such as Original Equipment Manufacturer on-site assistance provided for individual work items. In all cases the support is charged to the individual work item.
 5. Condition Report Estimating (862-30-XXX): Condition reports are typically required for "open and inspect" repair items and for emergent requirements during a modernization installation. In all cases the cost will be assigned to the individual work item.

6. Dry docking (863-40-XXX): Dry docking may be required for maintenance of the hull or underwater appendages or there may be needs for access cuts low on the hull to install modernization items. Unlike most of the items in this section, the costs will typically not be charged to a single work item. It is much more likely that the costs will be distributed between parties that require use of the dock. The equitable distribution weight factor will be manhours.
7. Hazardous Waste Disposal (863-50-XXX): This item is tied to specific work items. Examples include asbestos from propulsion space piping replacements. Lead abatement when sand or water blasting or doing preparations for welding. In all these cases charging the cost to an individual work item is appropriate.
8. Temporary Access Cuts (863-60-XXX): In many cases the cuts are for general access to reduce time to get both people and equipment in and out of high intensity work areas such as main machinery spaces. These cases will probably be charged to the TYCOM. In other cases, cuts must be made for a specific repair or modernization work item and they will be charged accordingly.
9. Gas Free and Maintenance of Gas Free (864-42-XXX): The requirement to gain access to a tank or void is usually job specific and will be charged to the individual work item. Exceptions will be evaluated on a case-by-case basis.
10. Crane Services (865-20-XXX): The crane services requirement will be estimated and assigned to individual work items that require the service.
11. Rigging Services (865-30-XXX): This is for rigging for the cranes and is assigned to individual work items.
12. Material Handling (865-20-XXX): This charge is for the “yellow gear” forklifts that support material handling on the pier, dock or main deck of the ship. The cost is assigned to individual work items that require the service.
13. Fire Watch Services (865-70-XXX): The fire watch personnel are estimated and assigned to individual work items.
14. Quality Assurance Support (866-20-XXX): In keeping with ISO 9000, each MSMO contractor maintains its own Quality Assurance. The cost of Quality Assurance will be assigned to individual work items.
15. Production Supervision (897-00-XXX): Every MSMO contractor has a small staff which manages the accomplishment of repairs and the installation of the alterations. The costs will be assigned to the appropriate work items.

C. The TYCOM will pay for the following items:

1. Armed Security Guards and Waterway Security Barrier (042-27-XXX): The security guards and the water barrier are designed to stop terrorist attacks similar to the events at the Marine Barracks in Beirut and the small craft attack upon USS Cole. The security guards are supported by land obstacles which are designed to stop unauthorized boats from approaching the ship.
2. Compartment Closeout Schedule (813-00-XXX): The Compartment Closeout Schedule is developed in conjunction with the Production Plan. The Compartment Closeout Schedule shows when each of the ship compartments will be completed in every respect. This includes all work as well as painting, labeling and final cleaning. The closeouts are usually done by a team of MSMO and Navy (civilian and/or military) personnel who sign the closeout form.
3. Weight and Moment Change Data (843-10-XXX): Every significant availability requires compilation of weight and moment changes to ensure long term damaged stability of the ship is maintained. Though many repair items, and some modernization alterations, have negligible impact upon weight and moment, it is impractical to try to fractionalize the weight and moment costs to individual jobs.
4. Ship's Force Parking (863-70-XXX): This is a TYCOM item.
5. RMC Office Space (863-70-XXX): When the TYCOMs assumed responsibility for the repair RMCs, the cost of personnel and spaces became a TYCOM responsibility.

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMCM) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMCM) Note 1	CM E= Execution Start	Comments/Remedial Action
1	Establish CNO/CM Availability Schedule	TYCOM N1	A-720	A-720				Fleet Readiness Plan (FRP) Baselines are developed on a 3 year cycle. ID CNO avails IAW with that cycle.
2	Fund Modernization Procurement & Installation - Decision Point 3	OPNAV/ FLEET	Varies	Varies				Depends on development and procurement timeline requirements.
3	Issue Execution Planning Hull Modernization Plan (EHMP)	SPM	Varies	Varies				EHMP issued in March each year to support MMBP development.
4	Issue 2-year rolling Advance Planning Hull Modernization Plan (AHMP)	SPM	Varies	Varies				AHMP issued in July each year to support long lead time planning by RMCs.
5	Establish habitability planning estimate. Task RMC with design shipcheck.	TYCOM N43	A-690					Habitability Program Milestone
6	Ship habitability Validation and commence design	RMC or Agent	A-660					Habitability Program Milestone
7	Identification of initial list HCPM for Ship Changes	PARM/ Planning Yard	A-660	A-660				HCPM - HQ Centrally Procured Material. This should be for the entire ship class. This should include all known requirements.
8	Provide Incremental Funding for HCPM/LLTM to meet req'd delivery dates	PARM/SPM	A-600	A-600				
9	Initiate procurement of HCMP LLTM	PARM/SPM	A-600	A-600				
10	Review HMP/AHMP/EHMP and prepare recommended list of Fleet Type Commander Alterations for the TYCOM	TYCOM N43	A-487					
11	PY Submit Funding Request for work assigned	Planning Yard	A-480	A-480				
12	50% of BAWP is screened to maintenance availabilities	MT/PE	A-470	A-470				If A-470 is within 30 days of C+140, the 50% screening requirement is superseded. 100% of BAWP task must be screened.
13	Update BAWP with new requirements	SURFMEPP	A-470	A-470				

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/DIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
14	Ship Change (SC) Design/Planning Funds provided	NAVSEA/SPM TYCOM N43	A-425	A-420				SPAWAR generally funds in FY prior to execution year.
15	Advance Planning Briefing	TYCOM N43	A-425					
16	Send habitability project advance planning notice	TYCOM N43	A-420					Habitability Program Milestone
17	Interface Control Drawing (ICD) delivered to alteration developer/PY	PARM	A-420	A-420				
18	Participate in SURFMEPP CSMP/DFS/BAWP Review	MT/RMC/TYCOM	A-410	A-410				
19	Ensure 100% of BAWP is screened to maintenance availabilities	MT/PE	A-410	A-410				
20	Update BAWP with new requirements	SURFMEPP	A-400	A-400				
21	Indicate concurrence/commitment to project(s) to TYCOM. Enter project(s) into CSMP,	Ship's Force	A-390					Habitability Program Milestone
22	Identify drawing development assignments, including Class Drawings	PARMS/ TYCOM/ NAVSEA	A-390	A-390	A-390	A-390	N/A	Send to RMC and Planning Yard.
23	Assign Drawing Development Responsibility	PEO Ships	A-390	A-390	A-390	A-390	N/A	
24	Issue Initial Letter Of Authorization (including AITs)/Hull Modernization Plan	SPM/TYCOM	A-360	A-360	A-360	(A-360)	N/A	HMPs to be issued in March Each Year to maintenance teams to support MMBP. Letter of Authorization will be posted at A-360.
25	Establish Availability in the appropriate IT system	MT/PM	A-360	A-360	A-360	A-360	N/A	Availabilities will be established in the applicable planning data base when known or work is ready to be screened.
26	Integrated Planning Conference (Issue AWP)	TYCOM N43	A-360	A-360				
27	IPTD Planning	RMC C300	A-360	A-360				IPTD event to focus on IPTD Overview and Tools

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMCM) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMCM) Note 1	CM E= Execution Start	Comments/Remedial Action
48	Independent Government Estimate (IGE) Submitted in support of 50% lock	RMC C400	A-190					IGE Supporting 50% lock milestone. IGE is a class "C" estimate.
49	TAR Complete in support of 50% lock	RMC C300	A-180					Resolves differences in scope and price reducing the amount of time required for final TAR IAW CEIPRP.
50	Issue drawings to EPY	RMC PM	A-180					Habitability Program Milestone
51	Issue/Deliver SIDs to NSA for KTRs and AITs	Planning Yard	A-180	A-240	A-180	A-180	N/A	This is a change from A-120. Including all SIDs for AITs. For FFP contracts, this milestone should occur at A-240 when possible and NLT A-180.
52	Late add impact assessment	PARM	A-180	A-180				Any change to the Fielding Plan in NDE-NM that requires SIDs or impacts ship distributed systems requires sponsoring activity to submit a late add impact assessment.
53	Interoperability impact assessment	PARM	A-180	A-180				Any SFI CAT 1 or CAT 2 change to scheduling in NDE-NM inside A-180 that has not been previously baselined at an NCMC requires the sponsoring activity to submit an eCCB risk form in NDE-AMPS.
54	Request Availability Funding for both repair & modernization work	RMC PM	A-180	A-180	A-180	A-180	N/A	
55	Initiate discussions with Naval Research Laboratory (NRL) to determine potential NRL projects	RMC PM/NRL	A-180					
56	Establish Availability Key Event and Milestone Schedule	NSA	A-180	A-180				Need to develop a comprehensive Key Event and Milestone Schedule for the Availability and provide to AIT Managers to facilitate creation of AIT POA&Ms.

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
57	Perform Availability Risk Assessments	MT	A-180	NLT A-60	A-25	A-25	N/A	Overseas location of SRF-JRMC necessitates earlier planning in support of longer logistics pipeline.
58	Perform Availability Risk Assessments	MT	A-180	NLT A-140	A-40	A-40		
59	All Modernization Risk Assessments (including waivers) submitted	PARM/SPM/TYCOM	A-175	A-175 (A-210)	A-175	A-175	N/A	Overseas location of SRF-JRMC necessitates earlier planning in support of longer logistics pipeline.
60	Issue list of work items screened for Forces Afloat Accomplishment	TYCOM N43	A-150					
61	Identification of AIT Support requirements and POA & M provided	AIT Manager	A-135	A-180	A-135	A-168 (A-175)	N/A	Need to develop a complete requirements list. Needs to be integrated with repair requirements by the KTR and presented at the WPER. SRF-JRMC necessitates earlier planning in support of longer logisitcs support of AITs.
62	Complete and Review Bid Specifications for errors, omissions, duplications (may require conference to resolve)	RMC PM	A-135 to A-110					
63	IPC Announcement Message	Type Desk Officer (TDO)	A-130	A-170	N/A	N/A		Due NLT 10 days prior to IPC
64	80% of D-Level maintenance work package 2K's locked based on funding for repair	MT/PM	*A-120	A-210	N/A	N/A (A-65)		Intent is that the planning activity continually develops specs in the most cost effective manner and not batch this work in front of the next package development milestone. Services do not count toward this milestone. >\$20M may require A-155 date.

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
65	Cert Plan(s) (e.g., ILS, software etc.) approved. Final date for modernization Ship Change (SC) approval except for Sustainment Type 1 (ST1) and Sustainment Type 2 (ST2) SCs. LOA locked with exception of ST1 and ST2 SCs.	SPM/PARM/PM	A-120	A-120 (A-150)	A-120	A-120 (A-135)	N/A	Overseas location of SRF-JRMC necessitates earlier planning in support of longer logistics pipeline. SPM approves Hull Certification. All unresolved PNA modernization SCs, except ST1 and ST2 SCs, are removed from the authorization letter at this date. ST1 and ST2 SCs can be added to the LOA until A-75. Please note: There is an Interim Policy covering the Fleet Commander's C5I MP policy for approving the Weapon System Baseline Certification at A-30 (CUSFFC MSG 032037Z MAY 2004).
66	100% of O level maintenance work package locked	Ship's Force	A-120	A-120	A-30	A-30 (A-40)	N/A	Intent is to provide work to be accomplished so that an integrated execution sked can be developed for the WPER.
67	Conduct IPC	RMC PM	A-120					Provides a forum for early identification of work requirements that require integration to avoid conflicts in execution with other work.
68	Finalize/lock NRL Projects	NRL	A-120					
69	Submit A-120 Deferral Letter with Maintenance Team Assist	TYCOM N43	A-120					TDA drafts letter with MT input and submits letter to SURFMEPP for review and forwarding to NAVSEA 05. Once adjudicated, NAVSEA 05 will submit results to TYCOM via SURFMEPP.
70	IPTD Tactical Preparation	RMC C300	A-120	A-120				IPTD event to focus on work integration and execution plan. Schedule shall coincide with the IPC .
71	Develop General Purpose Electronic Test Equipment management program	Ship's Force	A-110					

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
72	MSMO contractor complete planning and estimating of work assigned as required by the above 80% 2K Lock milestone	MSMO Contractor	A-95*					Intent is to have a continuous flow of planning quality estimates to eliminate churn in the work package. *MSMO contractor planning and estimating must be complete by A-95 for all Modernization work items defined in the A-120 LOA Lock. >\$20M may require A-130 date.
73	IGE submitted in support of 80% lock	RMC C400	A-95					IGE supporting 80% lock milestone. IGE is a class "C" estimate.
74	Award AIT contracts for work not being done by prime KTR. Identify all outside activities participating in the availability and associated support requirements	AIT Sponsor/ TYCOM N43	A-90	A-90	A-90	A-90	N/A	
75	Review CSMP and ensure all deferred maintenance actions intended for accomplishment during the availability identified by priority and submit to the TYCOM/SIC	MT/PE			A-50			Reconcile CSMP
76	I-Level work package fully brokered	MT/ Ship's Force	A-90	A-90	A-40	A-40		Intent is to fully broker all known work to I-Level by this date.
77	Review PMS, CSMP and Testing requirements and ensure all Ship's Force maintenance actions scheduled for accomplishment during availability are identified	MT/PE			A-40		N/A	
78	Review TYCOM Alteration Management System/F<P and ensure all authorized alterations intended for accomplishment during the availability are identified by priority based on material availability as identified by the LMA	TYCOM N43			A-40		N/A	

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
79	Review the MJC and identify the routine package to be accomplished during the availability	TYCOM N43			A-40		N/A	
80	Review CSMP T/A 2 items. Identify and order LLTM	FMA			A-40		N/A	
81	Establish funding targets for budgeting purposes for the availability	Funding Activity			A-40		E-14	
82	Order Material for Ship's Force Work	Ship's Force	A-90					
83	Review SSRs for changes required as a result of authorized work. Turn over items (including changes previously accomplished) to Planning Industrial activity	Ship's Force/ Planning Yard	A-90					
84	TAR Complete in support of 80% lock	RMC C300	A-85					Resolves differences in scope and price reducing the amount of time required for final TAR IAW CEIPRP.
85	I-Level work package fully accepted	FMA	A-75	A-75	A-33	A-33	E-14	Intent is for I-Level to accept or reject all work brokered to it up to this point in time, work entering later in the process will be subject to normal Business Case Analysis.
86	100% of D-Level maintenance work package 2K's locked based on funding for repair	MT/PM	*A-75	A-170	*A-30	A-60 (A-80)	E-7	SRF-JRMC CMAV milestones based on longer contract award timeline to increase competition. >\$20M may require A-99 date.
87	Final date for ST1 and ST2 SCs approval or deferral from the LOA	SPM/PARM/PM	A-75	A-75				All unresolved PNA S11 and S12 SCs are removed from the LOA at this date. Any ST1 and ST2 SCs being added after the A-75 date can only be added to the availability using the late add process.

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
88	Solicit Bids	RMC C400	N/A	A-120	N/A	A-50	N/A	If CMAV is to be performed under an IDIQ contract and is over \$500k we may need to add 30 days for solicitation IAW Fair Value purchasing policy. This would reset the CMAV solicit bid milestone to A - 70.
89	100% of D-Level maintenance work package 2K's planned, estimated	Planning Activity	*A-60	A-155 (A-110)	*A-25	A-60 (A-30)	E-14	Maintenance Team/PMR notify PARM of KTR estimated execution cost and validate Maintenance/Modernization pro-rate split. >\$20M may require A-92 date.
90	IGE Submitted in support of 100% lock	RMC C400	A-60					IGE supports 100% lock milestone. IGE is a class "C" estimate.
91	TSRA-2 complete	RMC C200	A-90	A-90				Ship-Wide material condition assessment documenting deficiencies, expedite maintenance planning and correctly prioritizes maintenance action IAW SFRM.
92	Issue Specification package to FLC (SRF-JRMC only)	MT		(A-130)		(A-55)		
93	Work Specs Developed	Executing Activity			N/A		E-14	
94	Submit I-Level work package and schedule to KTR for integration	FMA	*A-60	A-60	A-30	A-15	E-14	>\$20M may require A-92 date.
95	Project kick-off briefing	Ship's Force or Agent	A-60					Habitability Program Milestone
96	Submit executing activity work package and schedules to the LMA for integration	Executing Activity			A-30		E-14	
97	Develop Recommended Key Events Schedule and present to ISIC/Ship's Force/TYCOM	LMA			A-30		N/A	
98	Begin to integrate executing activity schedules	LMA			A-30		E-7	

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
99	Review scheduled Ships Maintenance Monitoring Support Office, PMT, MCA inspections and testing that may result in significant new work for the FMA or Ship's Force or that may impact scheduled Ship's Force and/or FMA work.	TYCOM N43			A-30		N/A	
100	Begin processing all new work as "late work".	RMC PM			A-30		E-30	The intent is that all work regardless of the Executing Activity or level will have been brokered and accepted. Hence additional work will be treated as "late work".
101	MOA Submitted	AIT Manager/ Outside Activity			A-30		N/A	
102	Update risk assessments and verify deliverables to KTR (O,I,D work items and AIT sked reqmts)	MT/PM	*A-60	A-60 (A-60)	A-25	A-25	N/A	This is to confirm that the KTR has all input for his development of the integrated avail sked. Note that for FFP CMAV KTR will not be identified until A-15, verification with KTR will take place at WPER. >\$20M may require A-92 date.
103	MSMO contractor "publish" pkg in the appropriate maintenance database	MSMO Contractor	*A-60	N/A	*A-25	N/A	N/A	MSMO Contracts Only. >\$20M may require A-92 date.
104	MSMO contractor turn over spec package	MSMO Contractor			A-25		N/A	MSMO Contracts Only
105	Cutoff for bidders questions	PCO	N/A	A-100	N/A	A-30 (A-35)	N/A	
106	Submit Bids	Contractor	N/A	A-90	N/A	A-20 (A-30)	N/A	
107	Award Contract	RMC C400	N/A	A-60	N/A	A-15 (A-20)	N/A	FLC is the contracting agent for SRF-JRMC
108	Develop Off-Load Plan for Arrival at industrial activity (including off-load assistance, security and storage arrangements).	Ship's Force	A-60					

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVEN T #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
109	Phase II Pre-Availability Test and Inspections, Boiler Start of Availability Inspection (as applicable)	Ship's Force/ TYCOM/Naval Surface Warfare Center (NSWC)/ Industrial Activity	A-60					
110	MSMO contractor submit final package cost proposal	MSMO contractor	*A-55	N/A	*A-25	N/A	N/A	MSMO Contracts Only. >\$20M may require A-78 date.
111	Complete ship checks and order all required material	Executing Activity			A-25		N/A	
112	Complete TAR/ Establish Pro-rate based on final cost proposal	RMC C300	*A-50	N/A	*A-20		N/A	Final funding requirements update with estimate of pro-rates. Completes CEIPRP in support of definitization. >\$20M may require A-65 date.
113	Provide Availability Funding for Modernization to the RMC	SYSCOMS/ PEO/ TYCOM	*A-45	A-75 (A-150)	*A-45	A-45 (A-90)	N/A	Includes funding for AIT's support services and prorate costs. Overseas location of SRF-JRMC necessitates earlier funding in support of contract award and logistics pipeline. >\$20M may require A-64 date.
114	IPTD Execution Readiness	RMC C300	A-45	A-45				IPTD event shall coincide with WPER.
115	WPER Announcement Message	TDO	A-40	N/A	N/A	N/A	N/A	NLT 10 days prior to the WPER.
116	Definitize Work Packages	RMC C400	A-35	N/A	A-18	N/A	E-7	All work after definitization is considered new or growth work
117	Ship representative visit industrial activity for preliminary off-ship berthing and storage inspection	Ship's Force/ Industrial Activity	A-30					
118	Deliver Material (LLTM and Kitted Materials) to Executing Activity	Planning Yards/PARM	A-30	A-30 (A-75)	A-20	A-15 (A-30)	N/A	Overseas location of SRF-JRMC necessitates earlier receipt for recovery time in case of shortages.
119	Conduct WPER - finalize funding	MT/PM	A-30	A-30	A-20	A-10 (A-15)	N/A	KTR presents fully planned execution sked (could be a Gant chart) to the full MT.
120	Develop strategy for FMA/ Ship's Force calibration of gages instruments and tools	MT/LMA			A-10		N/A	

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EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
121	Off-load ammunition and fuel as required. Also off-load hazardous material and oily waste	Ship's Force	A-30					TYCOM approval required.
122	Start of Availability, Start ILO, start Combat Systems Technical Training	Ship's Force/ MT/Industrial Activity	A-0	A-0	A-0	A-0		
123	Commence First 100 hours	MT/LMA	A-0	A-0	A-0	A-0	N/A	
124	Send start message to Fleet Commander.	TYCOM N43	A-0					
125	Conduct Arrival Conference	Industrial Activity/ ISIC/Ship's Force/ RMC/PM	A-0		A-0		N/A	
126	Cancel all outstanding Casualty Reports (CASREP) which are scheduled to be corrected during the industrial availability	Ship's Force	A+3					
127	Execute MOA with Industrial Activity	Ship's Force/ Industrial Activity	A+7					
128	Submit Weekly Progress Reports	Ship's Force	A-0 to C+0		A-0 to C+0		N/A	
129	25%, 50%, 75% point review conferences	NSA/RMC C400	A-0 to C+0					Combine 50% conference with 50% IPTD event
130	TSRA-3 Complete NOTE: All open and inspects must be complete during the first 20% of the avail.	RMC C200	A-0 to C+0	A-0 to C+0				2 week ship-wide assessment focused primarily on ship's HM&E components assisting in the LOA execution IAW SFRM.
131	Start crew training in preparation for initial LOA	Ship's Force/ISIC	C-120					
132	Start Combat Systems Level Testing	Ship's Force/ Industrial Activity	C-90					
133	Prepare Dock Trial, Fast Cruise and Sea Trial agendas.	Ship's Force	C-45					
134	Post-Repair Boiler Inspection.	TYCOM/Ship's Force/NSWC	C-45					
135	LOA	ATG/ISIC/Ship's Force	C-40					

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EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMCM) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMCM) Note 1	CM E= Execution Start	Comments/Remedial Action
136	Start crew training in preparation for Sea Trials	Ship's Force	C-40					
137	Send Sea Trials Discrepancy Report	Ship's Force	Upon Completion of Sea Trials					
138	Visual National Policy for the Control of Compromising Emanations (TEMPEST) Inspection (with Configuration Control Diagram)	Industrial Activity	C-10					
139	Completion Review Conference	Industrial Activity/ TYCOM/ISIC/ Ship's Force	C-5					
140	Commence Final 100 Hours	MT/LMA	C-4	C-4	C-4	C-4	N/A	
141	Complete Availability	LMA	C-0	C-0	C-0	C-0	30-Sep	
142	Conduct Departure and Assessment Conference	MT/LMA			C-0		N/A	
143	Send Completion Message to Fleet Commander	TYCOM	C-0					
144	CSMP update. Report completion of all Fleet, TYCOM and Program Alteration.	Ship's Force	C-0					
145	Lessons Learned Conference Announcement Message	TDO	C+10	N/A	C+10			
146	Send letter report of any unsatisfactory work (photographs and later updates may also be sent)	Ship's Force	C+10					
147	Combat Systems Post-Overhaul Exam (if required)	Ship's Force/ISIC	C+15					
148	Conduct MMPR	MT	C+20	N/A	C+20			
149	Issue Departure and Assessment Report	LMA	C+30		C+21		N/A	
150	TSRA-4 Complete	RMC C200	C+30	C+30				Can be done anytime as long as it is completed before the basic training phase IAW SFRM
151	Attend SURFMEPP BAWP Close-Out Meeting	MT/RMC/ TYCOM/	C+45	C+45				

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SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/IDIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
152	Issue LCPC Announcement Letter for next cycle	SURFMEPP	C+75	C+75				SURFMEPP prepares next cycle's BAWP and issues letter date, time and location of LCPC.
153	Submit Final BAWP Close-Out Report	SURFMEPP	C+90	C+90				Final status of BAWP tasks including deferrals.
154	End of guarantee period for work performed by Industrial Activity. All unsatisfactory work must be reported by this date to be corrected by Industrial Activity.	Ship's Force	C+90					
155	Complete SSR Update	Planning Yard	C+90					
156	Review SURFMEPP PRE-BAWP	MT	C+120	C+120				All CMP tasks due in current cycle through C+120 will be included in Pre-Push Review
157	Life Cycle Planning Conference (LCPC) Meeting	SURFMEPP	C+130	C+130				After last CNO Availability Completion
158	Upload BAWP task to ship's CSMP	SURFMEPP	C+140	C+140				All tasks discussed at LCPC will be added to RMAIS
159	Review SURFMEPP Planning Schedule Letter for action items	SURFMEPP	C+140	C+140				After last CNO Availability Completion
160	Issue Completed AWP	TYCOM	C+180					
161	TSRA-5 Complete	RMC C200	C+360	C+360				Done after intermediate training phase and should be completed 90 days prior to deployment.
162	Provide Maintenance and Modernization Business Plan (MMBP) budget guidance to RMC	TYCOM	Feb of Prior FY	Feb of Prior FY	Feb of Prior FY	Feb of Prior FY		

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APPENDIX D

SURFACE FORCE SHIP MAINTENANCE AND MODERNIZATION MILESTONES

EVENT #	Task/Milestone	Responsible Activity	CNO MSMO (>\$20M req may apply) * Note 2	CNO FFP (JRMC) Note 1	CMAV MSMO	CMAV FFP/DIQ (JRMC) Note 1	CM E= Execution Start	Comments/Remedial Action
163	Negotiate MMBPs with TYCOM	RMC/SPM	Mar of Prior FY	Mar of Prior FY	Mar of Prior FY	Mar of Prior FY		Start in March complete by June.
<p>Note 1: SRF-JRMC availabilities are not FFP as most work is performed in-house.</p>								
<p>*Note 2: These milestones are minimum requirements. If the maintenance team feels they need additional time (e.g., NAVSEA business clearance because the avail exceeds the \$20M threshold), milestones shall be adjusted accordingly.</p>								
<p>Note 3: The Contracting Officer has the option of requesting a DCAA audit for “cost” contacts >\$100M and “Firm Fixed” Contracts >\$10M. It is incumbent upon the Contracting Officer to request those services in support of the milestones above. If an audit is requested, start coordination with the cognizant DCAA office as soon as possible. Guidance for DCAA audits can be found in: 1) DFARS Procedures, Guidance, and Information PGI 215, edition 215.4-10. 2) DCAA PSP 730.5.1.A/2010-034 Memorandum, Increased Thresholds for Proposal Audits. 3) FAR Part 507, para 507.104 General Procedures.</p>								
<p>Note 4: In the event milestones must be compressed due to the availability being conducted earlier in the process than originally planned, TYCOM, NSA and LMA shall agree on a compressed milestone timeline and enter an MOA for the record dictating the agreement IAW paragraph 2.5 of this chapter and the paragraph VI-31.4.3 of this manual</p>								

APPENDIX F**PLANNING PRIORITY MATRIX**

The priority for work item planning completion is set by the required due date for the work accomplishment. This date is established by the Maintenance Team, based on the availability start date minus the required contracting time. The tables below provide guidelines for FFP and MSMO contract vehicles.

DEPOT PLANNING PRIORITY SCHEDULE (FFP)

PRI	TYPE WORK	SPEC EST DUE DATE	PRIORITY SET BY	PLNG SYS	AWARD INTERVAL	COMMENTS/REMARKS
1	EM	"ASAP"	MT-BASED ON EM SKED	NMd	N/A	<ul style="list-style-type: none"> ▪ CAN USE IDIQ IF AVAIL ▪ INCLUDES EM DOCKING (SUSTAIN IDIQ) ▪ OT USE AS NEEDED
2	CM	1-3 DAYS BASED ON SKED	MT-BASED ON CM SKED	NMd	N/A	<ul style="list-style-type: none"> ▪ CAN USE IDIQ IF AVAIL ▪ SMALL PKGS 5-10 SPECS FOR CM SKED AVAILS (10-21 DAYS)
3	CNO	PER ADV PLNG SKED	PLNG-LAST SPEC DUE DATE	NMd	A-60	<ul style="list-style-type: none"> ▪ INCLUDES FFG SHAPEC AVAILS ▪ PLNG START A-360 ▪ BID SPEC REVIEW (BSR) REQUIRED
4	IDIQ UPDATE AND NEW CONTRACTS	PER ADV PLNG SKED	PLNG-LAST SPEC DUE DATE	NMd	A-60	<ul style="list-style-type: none"> ▪ PLNG START A-360 BASED ON CONTRACT EXPIRATION/NEW START ▪ SEE IDIQ LIST FOR CONTRACT EXP DATES ▪ BID SPEC REVIEW (BSR) REQUIRED
5	SERVICE CRAFT	PER ADV PLNG SKED	PLNG-LAST SPEC DUE DATE	NMd	A-60	<ul style="list-style-type: none"> ▪ PLNG START A-360 TO 300 IF POSSIBLE ▪ USUALLY COASTWIDE SOL ▪ BID SPEC REVIEW (BSR) REQUIRED
6	OTHER (TRF, SUSTAIN, DECOM, ETC)	PER ADV PLNG SKED	PLNG-LAST SPEC DUE DATE	NMd	A-60	<ul style="list-style-type: none"> ▪ PLNG START A-360 TO 300 IF POSSIBLE ▪ BID SPEC REVIEW (BSR) REQUIRED

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APPENDIX G
DEPOT PLANNING PRIORITY SCHEDULE (MSMO)

PRI	TYPE WORK	SPEC EST DUE DATE	PRIORITY SET BY	PLNG SYS	AWARD INTERVAL	COMMENTS/REMARKS
1	EM	“ASAP”	MT-BASED ON EM SKED	NMd	N/A	<ul style="list-style-type: none"> ▪ INCLUDES EM DOCKING ▪ OT USE AS NEEDED
2	CM (SCHEDULED)	A-24	MT-BASED ON CM SKED	NMd	N/A	<ul style="list-style-type: none"> ▪ APPLICABLE TO ALL QTRLY CMAVS ▪ SMALL PKGS 5-10 SPECS FOR CM SKED AVAILS (10-21 DAYS)
3	CM (UNSCHEDULED)	A-14 days prior to start	MT-BASED ON CM SKED	NMd	N/A	<ul style="list-style-type: none"> ▪ APPLICABLE TO IN-PORT PERIODS WHEN SHIP IS AVAIL TO PERFORM REPAIRS ▪ CONTRACTOR NEEDS ADEQUATE NOTICE TO PERFORM PRODUCTION SCHEDULING & PLANNING
4	CNO	A-60	PLNG-LAST SPEC DUE DATE	NMd	N/A	<ul style="list-style-type: none"> ▪ INCLUDES ALL CNO AVAILS ▪ PLNG START A-360

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APPENDIX H₃
PROCESS FLOWCHART
FIRM FIXED PRICE MSMO CNO AVAILABILITY

