DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON, D.C. 20350-2000

IN REPLY REFER TO
OPNAVINST 3120.33B CH-5
N87
15 Oct 10

OPNAV INSTRUCTION 3120.33B CHANGE TRANSMITTAL 5

From: Chief of Naval Operations

Subj: SUBMARINE ENGINEERED OPERATING CYCLE PROGRAM

Encl: (1) Revised Pages 1 through 4
(2) Revised Enclosure (2)

1. Purpose

a. To revise the Submarine Operating Interval for SSN 688 and SSN 774 Class submarines as identified per NAVSEA ltr 4700 Ser 392CM/0633 of 24 Sep 2009.

b. To extend applicability to SSGN Class submarines.

c. To make minor editorial corrections and recognize changes to organizational and program nomenclature.

2. Action

a. Remove pages 1 through 4 and replace with enclosure (1) of this change transmittal.

b. Remove enclosure (2) and replace with enclosure (2) of this change transmittal.

R. P. BRECKENRIDGE
Deputy Director, Submarine
Warfare Division

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IN REPLY REFER TO
OPNAVINST 3120.33B CH-4
N77
06 Feb 01

OPNAV INSTRUCTION 3120.33B CHANGE TRANSMITTAL 4

From: Chief of Naval Operations

Subj: SUBMARINE ENGINEERED OPERATING CYCLE (SEOC) PROGRAM

Encl: (1) Revised pages 1, 3 and 4
(2) Revised enclosure (2)
(3) Revised page 3 of enclosure (5)

1. Purpose

a. To revise the Submarine Operating Cycle for SSBN 726 Class submarines.

b. To revise the Submarine Operating Interval for SSN 688 and SSN 21 Class submarines.

c. To delete references to submarines and classes of submarines which have been inactivated including: SSN 671, SSN645 and SSN 637 class.

d. To make minor editorial corrections.

2. Action

a. Remove pages 1, 3 and 4 and replace with enclosure (1) of this change transmittal.

b. Remove enclosure (2) of the basic instruction and replace with enclosure (2) of this change transmittal.

c. Remove page 3 of enclosure (5) of the basic instruction and replace with enclosure (3) of this change transmittal.

M. I. FAGES
By Direction

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OPNAV INSTRUCTION 3120.33B

From: Chief of Naval Operations

Subj: SUBMARINE ENGINEERED OPERATING CYCLE PROGRAM

Encl: (1) Submarine Engineered Operating Cycle Program Element Relationships
(2) Submarine Class Service Life, Operating Cycles, and Operating Intervals
(3) Audit Plan for Extending a Submarine Operating Cycle
(4) Submarine Engineered Operating Cycle (SEOC) Program Responsibilities
(5) Glossary of Abbreviations, Acronyms, and Terms Applicable to SEOC and Related Programs

1. Purpose

a. To describe program elements, requirements, and responsibilities for support of engineered operating cycle programs for submarines.

b. To issue actions required before exceeding established submarine operating cycles.

c. To extensively revise and update the basic instruction, extending applicability to nuclear propulsion attack (SSN), sub-surface ballistic nuclear (SSBN), and nuclear powered cruise missile (SSGN) submarines.

2. Cancellation. OPNAVINST 3120.33A and CNO ltr ser 221C/C382185 of 5 May 1982 (NOTAL).

3. Scope. The Submarine Engineered Operating Cycle (SEOC) Program applies to all submarines. Procedures necessary to exceed operating intervals or cycles apply to all submarines.

4. Background

a. Because overhauls have become less frequent, some depot level maintenance, drydocking selected restricted availabilities (DSRAs) for SSNs, and extended refit periods (ERPs) for SSBNs is accomplished at specific points in each ship's operating cycle. Other requirements are satisfied during routine upkeeps for SSNs and refits for SSBNs with the support of fleet maintenance activities (submarine tenders, bases, or shore based support activities). Elements of the program include:

(1) Maintenance Standards define the "what," "when," "how," and "how much" to achieve for SSN and SSBN maintenance tasks.

(2) Class Maintenance Plans align SSN and SSBN maintenance requirements with scheduled periods such as DSRAS, upkeeps, refits, and overhauls.

(3) Integrated Maintenance and Modernization Planning (IMMP) Program and Feedback System identifies SSN maintenance requirements and their frequency for extended cycles for certain major components and provides for the collection and analysis of data on material condition and job completion to optimize satisfaction of maintenance through clear statements of requirements, appropriate frequency, and efficient scheduling.

(4) Extended Cycle Modernization Programs provide centralized planning, scheduling, and accomplishment of high priority alterations.

(5) Material Support Programs identify, budget for, procure, and position selected material required for maintenance on extended cycle submarines. These programs maintain rotatable pools of major equipment and procure materials with long lead times.

(6) Performance Monitoring Programs ensure that mission reliability of critical systems is not degraded and that additional maintenance caused by extended cycles is minimized and identified for proper planning.

b. Enclosure (1) summarizes the relationship of the SEOC program elements.

c. Extended operating cycles for submarines are established on the basis of solid technical rationale and evidence and must be achieved safely without excessive costs in subsequent overhauls. For a variety of reasons, however, exceeding operating cycles may be necessary. This instruction provides procedures for evaluating, on a case basis, whether continued operations beyond established operating cycles can be authorized.

5. Policy

a. Submarine class service life, operating cycle, and operating interval requirements are identified in enclosure (2). For all submarines, service life starts at new construction delivery. For SSNs, the start of the operating cycle is the first day of the month after post shakedown availability (PSA) or major Chief of Naval Operation (CNO) availability completion. The start of the operating interval is the first day of the month after completion of PSA or CNO availability completion. For SSBNs and SSGNs, the start of the operating cycle and operating interval is the first day of the month after delivery or overhaul completion.

b. Engineered operating cycle programs will be accorded high priority. Early planning, close coordination among the several commands involved, and accommodation with current support facilities, manpower, and funds are required to achieve economical implementation.

c. Submarine depot availabilities should be scheduled as close to the end of the established operating interval or cycle as operations and shipyard workload permit. Except in the most unusual cases, a depot availability should not be programmed to start beyond the established operating interval or cycle as severe operating restrictions can result from such a delay. In order to maximize use of fuel prior to ship’s inactivation, pre-inactivation restricted availabilities are authorized to permit continued ship operation prior to reaching the end of individual ship’s service life.

d. If exceeding the prescribed operating interval or cycle for a specific ship cannot be avoided, the type commander will assess the material condition of the ship to determine if the ship can be safely operated during the extension. For extensions, an assessment must be submitted for approval to

Submarine Warfare Division (OPNAV (N87)) via Naval Sea Systems Command (NAVSEASYSCOM) In-Service Submarines Program Office (PMS392) for technical evaluation. OPNAV (N87) will adjudicate the request based on the NAVSEASYSCOM recommendation to OPNAV (N87) on the technical and programmatic acceptability of the requested extension.

(1) Enclosure (3) provides an audit plan to assess the material condition of a submarine being evaluated for continued operation beyond its prescribed operating interval or cycle.

(2) Systems to be monitored must include any hull, mechanical, electrical, electronic, or combat system (excluding those under the cognizance of the NAVSEASYSCOM Nuclear Propulsion Directorate (NAVSEA 08) and the Strategic Systems Program (SSP) Office) considered critical to safety or mission requirements of the ship. “Critical” systems endanger achievement of the extended operating cycle if degraded performance or material condition cannot be reversed without substantial cost and shipyard facilities.

(3) Material condition assessments following enclosure (3) shall be conducted within 1 year of exceeding the operating cycle or operating interval established by enclosure (2) and will be forwarded to OPNAV (N87), via COMNAVSEASYSCOM (PMS 392) for technical and programmatic evaluation, a minimum of 3 months prior to exceeding the established operating interval or cycle.

(4) NAVSEASYSCOM shall provide annually to OPNAV (N87) and Submarine Logistics (OPNAV (N431)) a listing of those submarines that are expected to exceed prescribed operating cycles or operating intervals and the extent that such requirements will be exceeded. This notification is required no later than 60 days before the beginning of the fiscal year.

(5) If this tasking requires reduction in other functions or un-programmed expansion of facilities or funding, CNO must be appropriately informed so that compensatory action can be directed.

6. Action

a. Fleet commanders are directed to implement this policy for all applicable submarines.

b. The Chief of Naval Personnel (CHNAVPERS) will provide military personnel required to support this program.

c. The Fleet Commanders in Chief, Commander, NAVSEASYSCOM, CHNAVPERS, and their subordinate commanders will coordinate all matters associated with extended operating cycle programs. Direct liaison is authorized and encouraged.

d. Areas of specific, continuing responsibility for SEOC Program functions are stated in enclosure (4).

e. Standard definition of SEOC terms is essential. Enclosure (5) defines acronyms and terms for SEOC and related programs for other classes of submarines and types of ships.

B. DeMARS
By direction

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Submarine Extended Operating Cycle
Program Element Relationships

OPNAV Instruction 3120.32B
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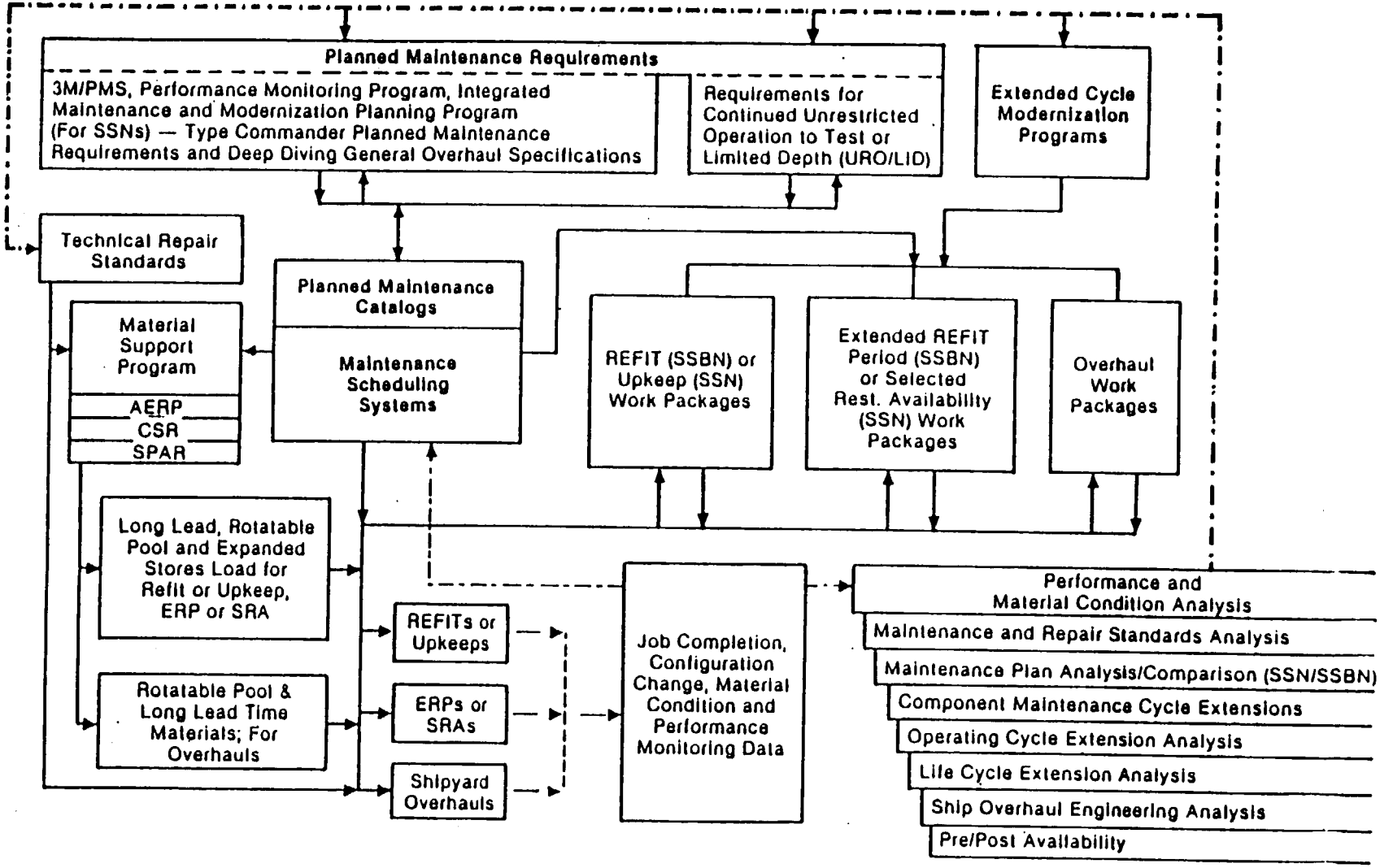

Enclosure (1)

SUBMARINE CLASS SERVICE LIFE, OPERATING CYCLES, AND OPERATING INTERVALS

CLASS	SERVICE LIFE (YEARS) NOTE 1	OPERATING CYCLE (MONTHS) NOTE 1	OPERATING INTERVAL (MONTHS) NOTE 1
SSN 21	30	120	48 (SSN 21 and 22) NOTE 4 (SSN 23)
SSN 688	33	120	72
SSN 774	33	72	72
SSBN 726	42	260	NOTE 2
SSGN 726	42	260	NOTE 3

NOTE:

1. See paragraph 5d of this instruction for guidance on determining submarine service life, operating cycle, and operating interval dates.

2. SSBN 726 Class submarines operate for a 112-day operating period, which consists of:

a. Submarine Force Pacific: 90 days at sea on patrol and 22 days off patrol for refit, incremental overhaul, appropriate modernization and re-supply.

b. Submarine Force Atlantic: 77 days at sea on patrol and 35 days off patrol for refit. During the 35 days off patrol, 22 continuous days are used for refit, incremental overhaul, appropriate modernization, and re-supply.

c. An ERP is scheduled at approximately the midpoint of each operating cycle.

3. SSGN 726 Class submarines operate as an SSBN 726 Class submarine for the first operating cycle and, after conversion, are then operated as an SSGN for the second operating cycle. SSGNs have a 100-day MMP scheduled every 15 months and an ERP is scheduled at approximately the midpoint of the second operating cycle.

4. Due to the ship’s unique operating profile and direct maintenance support from depot level facilities, USS Jimmy Carter (SSN 23) is granted a 72-month extended operating cycle. Carter will be scheduled for a restricted availability every 20 to 28 months.

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
	Copies, if available, of Maintenance Condition Analysis Reports, for components whose PMRs are projected as overdue if cycle is extended. --- Available A, B, C data for all components' PMRs projected as overdue if cycle is extended.	b. PMRs which IMA can accomplish prior to next availability using normally available resources. Assessment of past IMA accomplishment of IMMP PMRs. Assessment of overdue Vitality 1 and 2 PMRs on ship safety and mission.
3. Insurv Inspections	Last Insurv Inspection Report. Current CSMP.	Provide Latest CSMP Report. Comment on whether a UMI is being scheduled. Assessment of effect of deficiencies on Ship Safety & Mission.
4. SUBSAFE Certification Requirements	TYCOM Quality Assurance Manual, COMSUBLANT Instruction 4355.2 and COMSUBPAC Instruction 4355.4. SubSafe Manual NAVSEASYSCOM 0924-LP-062-0010	Forces Afloat plans to correct outstanding departures, and identification of those which can only be corrected during a shipyard availability Annotated copy of listed applicable documents and references used to make assessment.

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AUDIT PLAN FOR EXTENDING A SUBMARINE OPERATING CYCLE

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
1. URO MRC Accomplishment	Ships Inventory of Periodic Maintenance combined Scheduled/ Situational URO/LID by SWAB - last update --- Maintenance requirements for continued unrestricted operation to Design Test Depth - Applicable NAVSEASYSCOM Class Doucment (e.g., NS0924-048-0010 for SSN 637 Class ships). --- Copies, if available, of Maintenance Condition Analysis Reports for Anticipated Overdue MRCs	Annotated inventory to show: a. All URO MRCs projected as due prior to next scheduled availability if schedule is extended. b. All URO MRCs due prior to next scheduled availability that Forces Afloat can accomplish using normally available resources. Assessment of the effect of projected overdue items on ship safety.
2. Vitality 1 and 2 IMMP MR Accomplished	Inventory of Periodic Maintenance Requirements (PMR) Combined Scheduled Maintenance Planning System (MPS) Requirements I/D Level Vitality 1 and 2.	Subject inventory annotated to show: a. Planned I/D Level PMRs which will be overdue if schedule is extended.

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
	Copies of all Ship's Outstanding Departures from Specifications, SubSafe and Non-SubSafe.	Copy of Squadron Quality Assurance (QA) audit by Type Commander.
5. Salvage Inspection	Last Salvage Inspection Report. COMSUBLANT Instruction C4790.8 or COMSUBPAC Instruction C4790.7.	Status of uncorrected deficiencies. Identification of any recurrent items. Forces Afloat plans for correction of remaining deficiencies, and identification of any items requiring shipyard assistance. Assessment of Salvage System Inspection Extension beyond original cycle duration.
6. Docking of Ship	Last Interim Drydocking Report.	Provide copy of last interim drydocking report. Evaluation of data to determine if any limiting conditions exist such as: a. Unique hull or hard tank corrosion problems requiring reinspection. b. Special paint applications. c. Severe hull zinc wasting.

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
		d. Anti-fouling paint acceptability (i.e., lack of rejuvenation.) e. Main ballast tank light plate damping deterioration.
7. Sonar Evaluation	Last STAG 1 Inspection Report.	Provide copy of last STAG 1 Inspection Report with evaluation of data to determine if any limiting conditions exist such as: a. Excessive number of defective hydrophones and transducers. b. Array status per last STAG 1 Report and resultant determination of the need for a shipyard availability.
8. SMMSO/PMP Performance Monitoring	List of the outstanding maintenance actions recommended by SMMSO for accomplishment.	Identification of: a. Any continuing deficiencies or problems. b. Any recommended maintenance to support extension of operating cycle. c. Assessment of material condition of each system monitored.

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
9. Non-Nuclear PMS Accomplishment	Current PMS Schedules (monthly, quarterly, yearly)	List of any overdue preventive maintenance items. Corrective action planned by Ship's Force for overdue items.
	List of Overdue Planned Maintenance Sub-System (PMS) Items.	Assessment of Selected Major Component Material Condition versus accomplished PMS. For example, does the lithium bromide air conditioning plant material condition reflect accomplishment of PMS?
10. ShipAlt Accomplishment NAVSEASYSCOM Funded Title K	NAVSEASYSCOM 0906-063-8010, Submarine ShipAlt Status Summary.	Assessment of effect on military and technical capability of the ship caused by delaying next availability.
	Planning letter for next availability, if it exists.	Effect on Ship Safety by delaying accomplishment of safety related alterations.
	RAWP/OWP for next availability, if it exists.	
	Copy of CSMP.	Annotated list of outstanding ShipAlts.
11. ShipAlt Accomplishment TYCOM Funded ShipAlts	NAVSEASYSCOM 0900-063-8010, Submarine ShipAlt Status Summary.	Assessment of IMA capability to accomplish ShipAlts using normally available resources.
	SAMIS Update for TYCOM Funded ShipAlts.	Effect on Ship Safety, Personnel Safety and Technical Capability caused by delaying next availability.
	RAWP/OWP for next availability, if it exits.	

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
	Copy of CSMP.	Annotated list of outstanding ShipAlts.
12. Pre-Arrival Tests for Next Availability (if completed)	Completed copies, with accompanying Shipyard Recommendations, of completed Pre-Arrival Tests for next overhaul, if available. Copy of OMP/RAMP for next availability, if available.	Assessment of Deficiencies and the need to correct. Effect on personnel safety and ship material condition caused by deferring deficiency correction. Results to date should be tabulated, with a summary of any failures. Also, list any tests that would be repeated if extension is granted.
13. Propulsion System Assessment SSN/SSBN	CASREPT Data Retrieval Report, NAVSUPSYSCOM Report 4400.28-6 sorted by Ship for: a. Outstanding Casualty Reports. b. Completed Casualty Report for applicable Operating Cycle. Last Battery Report	Outstanding items requiring shipyard assistance and proposed resolution. Recurring items beyond Forces Afloat capability to correct. Capacity discharge data, number jumpered cells and identification of cells with low specific gravity.

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
	Battery Replacement Schedule per TYCOM Semi-Annual letter report	Determination of change in battery replacement schedule and its effect on the ship and TYCOM assets due to overhaul deferral and resultant increase in operating time.
	Copy of Ship CSMP	Identification of jobs deferred to the next shipyard availability and assessment of the effect of these deferrals on ship material condition.
	Equipment Status Log	Assessment of Forces Afloat capability to correct outstanding items.
	Last Docking Report	Assessment of propeller and shaft material condition and stern tube bearing wear.
		Annotated copy of listed applicable documents and references used to make assessment.
14. Propulsion (SS only)	Last Battery Report	Capacity discharge data, number of impaired cells and identification of cells with low specific gravity.
	Battery Replacement Schedule per last TYCOM Semi-Annual letter report	Determination of change in battery replacement schedule and its effect on the ship and TYCOM assets due to overhaul deferral and resultant increase in operating time.

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
	CASREPT Data Retrieval Report, NAVSUPSYSCOM Report 4400.28-6 sorted by ship for:	Outstanding items requiring shipyard assistance and proposed restriction.
	a. Outstanding CASREPTS	Recurring items beyond Forces Afloat capability to correct.
	b. Completed CASREPTS for applicable Operating Cycle	
	Ship's CSMP	Identification of jobs deferred to the next shipyard availability and assessment of the effect of these deferrals on the ship's material condition.
	Equipment Status Log	Assessment of Forces Afloat capability to correct outstanding items.
	Last Docking Report	Assessment of propeller and shaft material condition and stern tube wear.
	Forces Afloat report of system inspection and review of recent operating experience for the main propulsion controls	Assessment of main propulsion controls material condition.
	Forces Afloat report of grounds check and review of grounds history	Determination of the acceptability of main propulsion electric system condition.

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
15. Testing/Inspections for ships not in PMP.	Forces Afloat report of system inspection and operating experience for: a. Atmosphere Control Systems b. Service and Auxiliary Systems c. Pressurized induction and exhaust piping and Snorkel Safety Circuits, including NDT of accessible piping. d. Ballast Tank Blow and Vent Systems, including as a minimum: (1) Cycle of all ballast tank vent valve operators (2) Observation of all vent valve operators (3) Inspection of all MBT vent seating surfaces (4) NDT accessible riser piping on MBT vents (where applicable).	Copy of report and assessment of Forces operating experience to determine system condition.

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
16. Maintenance Deferrals (all systems except propulsion)	Copy of Ship's CSMP	Identification of jobs deferred to the next shipyard availability and assessment of the effect of these deferrals on the ship's material condition.
	CASREPT Data Retrieval Report, NAVSUPSYSCOM REPORT 4400.28-6 sorted by Ship for:	
	a. Outstanding CASREPTS	Outstanding items requiring shipyard assistance and proposed resolution.
	b. Completed CASREPTS for applicable operating cycle	Recurring items beyond Forces Afloat capability to correct.
	Equipment Status Log	Assessment of Forces Afloat capability to correct outstanding items. Annotated copy of listed applicable documents and references used to make assessment.

NUCLEAR AUDIT PLAN FOR EXTENDING A SUBMARINE OPERATING CYCLE

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
1. Reactor Plant Preventive Maintenance Systems	Reactor Plant Preventive Maintenance Schedule.	Status of Reactor Plant Preventive Maintenance should be provided. Any overdue maintenance items should be listed. Planned corrective actions should be listed.
2. Reactor Plant SubSafe	Reactor Plant Work Accomplishment Report.	Submit a copy of the most recently filled in and submitted Reactor Plant Work Accomplishment Report with certification that it is up to date.
3. ORSE Material Deficiencies	Latest ORSE Report.	Outstanding deficiencies from the last Operational Reactor Safeguards Examination. Planned corrective actions should be listed.
4. Pre-Overhaul Tests (if completed)	Pre-Overhaul Tests, per the applicable Reactor Plant Manual.	Results to date should be tabulated, with a summary of any failures. Also, list any that would be repeated if extension is granted.
5. For ships approaching a refueling overhaul, determine remaining core life	Applicable Core Lifetime Letter, and latest Reactor Quarterly Data Report and Reactor Plant Manual.	Ensure there is sufficient core life to meet operational commitments demanded by extending operating cycle.

AUDIT ITEM	APPLICABLE DOCUMENTS AND REFERENCES	REQUIRED INFORMATION
6. Outstanding reactor plant material deficiencies	CSMP	Annotated list of material deficiencies with planned corrective action and an assessment of significance.

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SUBMARINE EXTENDED OPERATING CYCLE (SEOC) PROGRAM RESPONSIBILITIES

FUNCTION	CNO	CHNAVPERS	CINCPACFLT CINCLANTFLT	SYSTEM COMMANDS
1. SEOC Program Management	1. Promulgate overall SEOC management plan including assignment of responsibilities and program major milestones. 2. Promulgate SSN, SSBN, AS, and floating drydock operating/ overhaul schedules. 3. Promulgate Selected Restricted Availability (SRA) and Extended Refit Period (ERP) schedules.	1. Submit recommendations to CNO. 2. Execute program as directed by CNO.	1. Submit recommendations overall program management. 2. Propose individual SSN, SSBN, AS and IMA floating drydock operating schedules including specific dates for SRAs, ERPs and overhauls. 3. Execute program as directed by CNO. 4. Coordinate program with other commands.	1. Execute program as directed by CNO. 2. Submit recommendations to CNO on program execution at headquarters level. 3. Develop detailed Functions and Assignments and Responsibilities (FAR) documentation. 4. Coordinate program with other commands. 5. NAVSEASYSCOM host an annual SEOC Program Review meeting.

FUNCTION	CNO	CHNAVPERS	CINCPACFLT CINCLANTFLT	SYSTEM COMMANDS
2. Budget/Funding	1. Coordinate and submit budgets in support of SEOC. Provide resources for execution of program.	1. Submit budget recommendations to CNO with full justification.	1. Submit budget recommendations to CNO with full justification.	1. Submit budget recommendations to CNO with full justification (include FMP and technical service).
3. Personnel & Training				
a. Military	1. Review and approve billet requirements for SEOC.	1. Advise CNO of feasibility of and provide personnel support for execution of SEOC.	1. Identify billets needed in support of SEOC including: a. PMTs b. IMA support facilities (1) Tenders (2) Drydocks (3) NAVSUBSUPFACs	1. Identify billets needed to Support the SMMS Office, Submarine Directorate and NAVSEA field activities. 2. Provide training for PMT personnel and selected Fleet personnel in performance monitoring techniques.
			2. Requisition personnel to fill approved billets.	3. Advise CNO of aspects of SEOC which require

FUNCTION	CNO	CHNAVPERS	CINCPACFLT CINCLANTFLT	SYSTEM COMMANDS
				additional training or improved courses in Fleet Training Centers.
b. Civilian	1. Review and submit requests to higher authority for approval of civilian positions needed to support SEOC.	N/A	1. Identify to CNO any civilian position requirements, if appropriate, for: a. PMTS b. SSN and SSBN IMA support facilities c. Type Commander staffs.	1. Identify civilian position requirements for: a. NAVSEASYSCOM (1) Submarine Directorate (2) SMMS Office (3) Other b. Other Activities and Naval Laboratories
4. Hardware and Facilities	1. Establish policy regarding mix of resources to be provided at IMAs for SRAs in homeport. 2. Provide funding in support of SEOC hardware and facilities	N/A	1. Identify specific requirements to CNO in support of SEOC at homeport upkeep/refit sites. 2. Designate suitable sites for SEOC facilities at home-	1. Identify specific requirements to CNO in support of SEOC at SYSCOM or other activities. 2. Provide support for procurement and installation of

FUNCTION	CNO	CHNAVPERS	CINCPACFLT CINCLANTFLT	SYSTEM COMMANDS
	requirements.		port upkeep/refit sites.	hardware and facilities at all sites engaged in SEOC support.
5. Industrial Support Requirements.	1. Approve industrial support assignments for SEOC.	N/A	1. Direct and coordinate accomplishment of industrial support activity work at the refit and upkeep sites. 2. Provide site support for industrial activities involved in execution of SEOC.	1. Ensure industrial support is available to support SEOC. 2. Recommend to CNO industrial support activities for execution of SEOC. 3. NAVSEASYSCOM: a. Provide drydock utilization data to CNO semi-annually. b. Provide estimate of future drydock requirements to CNO annually.

FUNCTION	CNO	CHNAVPERS	CINCPACFLT CINCLANTFLT	SYSTEM COMMANDS
				c. Review shipyard skills availability to support SRAs, ERPs, and overhauls. d. Review IMA capacity and skills to support SRAs and ERPs.
6. Site Support	1. Sponsor requirements to higher authority.	N/A	1. Provide support at all sites under their cognizance. 2. Advise CNO of requirements needed at deployed sites in support of SEOC.	1. Advise all concerned of requirements for site support at normal and deployed upkeep sites.
7. SEOC Modernization	1. Approve and program alterations in Fleet	N/A	1. Recommend priority of and schedule	1. Exercise design, material

FUNCTION	CNO	CHNAVPERS	CINCPACFLT CINCLANTFLT	SYSTEM COMMANDS
	Modernization Program (PMP).		for installation of approved alterations at sites.	coordination, and programming responsibilities for alterations. 2. Coordinate SEOC Modernization with all concerned.
8. Research and Development in Performance Monitoring Program (PMP) Technology	1. Approve and provide funding for R&D projects in support of PMP.	N/A	1. Advise SYSCOMS of recommended areas for R&D in support of PMP. 2. Coordinate shipboard testing/operational evaluation of new developments in support of PMP.	1. Coordinate R&D efforts relating to PMP. 2. Disseminate benefits derived so that other types of ships may have access to the new technology.
9. Material Support Program (MSP), Advance Equipment Repair Program (AERP)	Provide funds to procure assets for rotatable equipment pools.	N/A	1. Provide funds to refurbish off-loaded spare components.	1. Equip, manage, and maintain the spare component inventory to support SEOC.

FUNCTION	CNO	CHNAVPERS	CINCPACFLT CINCLANTFLT	SYSTEM COMMANDS
and other Material Support				2. Submit progress reports to CNO addressing compliance with MSP milestones. 3. NAVSEASYSCOM: a. Conduct AERP progress reviews (quarterly). b. Establish requirements lists to support IMA with needed repair parts and identify funding requirements to CNO to support them. c. Adjust IMA load lists to support revised SEOC.

GLOSSARY OF ABBREVIATIONS, ACRONYMS, AND TERMS APPLICABLE TO SEOC AND RELATED PROGRAMS

AERP/RPP — Advanced Equipment Repair Program/Rotatable Pool Program (SSN 21). A system for providing new or refurbished non-nuclear components in support of specific maintenance requirements programmed for submarine overhauls, DSRAs and ERPs. Components selected for management under the AERP/RPP are generally complex, high value items required to effect the accomplishment of programmed requirements in the shortest possible time. (R

CMP — Class Maintenance Plans. A listing of periodic maintenance requirements derived from all sources (IMMP, PMS, etc.), arranged by system and component, with applicability to specific ships by hull number. (R

DMP — Depot Modernization Period. An availability period primarily for depot accomplishment of major threat related modernization. These availabilities integrate priority modernization with mission and safety essential maintenance. (R

DSRA — Drydocking Selected Restricted Availability. An attack submarine maintenance and repair period conducted either at a shipyard or at a Fleet Maintenance Activity (FMA) using a shipyard industrial team to conduct maintenance of a preventive and corrective nature which is beyond the capacity of the FMA alone. DSRAs are scheduled by CNO and require 2 to 3 months for execution preceded by 30 months of planning and advance preparation. (D

ERP — Extended Refit Period. A period between deterrent patrols conducted on an SSBN at a Fleet Maintenance Activity with the support of shipyard personnel to perform more extensive repairs, inspections and alterations than can be accommodated in a refit of normal length.

IMMP — Integrated Maintenance and Modernization Planning Program. A program which identifies selected non-nuclear maintenance requirements to be accomplished at the intermediate and depot levels

in SSNs. The IMMP Program invokes Maintenance Standards (MSs) where applicable and prescribes maintenance requirement periodicities for components included in the program. IMMP requirements are specifically scheduled in work packages for DSRA, overhauls and some upkeeps by the Maintenance Scheduling (Computer based) System operated under the direction of SUBMEPP.

MPS — Maintenance Planning System (MPS). Systems maintained by SUBMEPP which provides schedule for all planned maintenance requirements at the intermediate and depot levels.

MSP — Material Support Program. A program which maintains allowance lists and stocks of material required to execute IMMP work on SEOC SSNs including IMMP work performed during overhaul DSRAs, and by Fleet Maintenance Activities during SSN upkeeps.

Operating Cycle — The scheduled length of time from delivery to first overhaul, between overhauls and between last overhaul and removal from normal service.

Operating Interval — A length of time for ship operations from delivery to the next regularly scheduled shipyard supported evolution (such as an ERP or DSRA), between the last regularly scheduled shipyard supported evolution and removal from normal service.

Overhaul — An availability for the accomplishment of general repairs and alterations at a naval shipyard, private shipyard, of other shore-based repair activity, normally scheduled in accordance with established cycles.

SUBMEPP — Submarine Maintenance Engineering Planning and Procurement Activity. A COMNAVSEASYSCOM field activity located in Portsmouth, NH which provides technical support for executing and improving the advance planning, integration, and control procedures associated with repairs and alterations to submarines.

PMP — Performance Monitoring Program. The collection of planned monitoring and analysis actions derived from a portion of the SEOC Program which are to be

applied to SSN 688 and SSN 21 Class submarines as a part of SEOC and for USS OHIO (SSBN 726) Class submarines as part of the TRIDENT Integrated Logistics Support Program. (R

PMT — Performance Monitoring Team. A group of two officers and about 20 enlisted personnel administratively assigned to SSN and SSBN submarine squadrons to execute Performance Monitoring Programs in the fleet. The PMT is managed by COMNAVSEASYSCOM.

SEOC — Submarine Engineered Operating Cycle (s). Scheduled lengths of time from delivery to first overhaul, between overhauls and between last overhaul and removal from normal service.

SEOC MOD — SEOC Modernization Program. A program for accomplishing high priority TITLE "K" alterations in SEOC SSNs outside of periods of regular overhaul, to balance modernization needs with extended intervals between overhaul.

SEOC PROGRAM — Submarine Engineered Operating Cycle Program. The collection of actions and efforts required to technically justify and implement extended operating cycles on applicable submarines.

SUBSAFE — Submarine Safety Program. A program originated as a result of the loss of USS THRESHER (SSN 593) to assure that specified systems and components of a submarine are constructed and maintained to technical specifications adequate to permit safe operations to design test depth.

URO/MRCs — Maintenance Requirements for Continued Unrestricted Operations to Design Test Depth. URO/MRCs provide technical guidance and frequency for monitoring the material conditions of systems within a submarine's designated SUBSAFE boundary.

assure adequate knowledge of material condition and systems reliability to support a safe extended operating cycle. SMMSO uses experience with SSBN 616, 627, and 640 Class submarines as a basis for efforts planned for and applied to other classes of ships and programs assigned. Thus, the term "SMMS Program" has a general, as well as a specific (to SSBN 616, 627, and 640 Class), submarine connotation.

SRA — Selected Restricted Availability. An attack submarine maintenance and repair period conducted either at a shipyard or at a submarine intermediate maintenance activity (IMA) using a shipyard industrial team to conduct maintenance of a preventive and corrective nature which is beyond the capacity of the IMA alone. SRAs are scheduled by CNO and require two to three months for execution preceeded by 30 months of planning and advance preparation.

SUBSAFE — Submarine Safety Program. A program originated as a result of the loss of USS THRESHER (SSN 593) to assure that specified systems and components of a submarine are constructed and maintained to technical specifications adequate to permit safe operations to design test depth.

URO/MRC's — Maintenance Requirements for Continued Unrestricted Operations to Design Test Depth. URO/MRCs provide technical guidance and frequency for monitoring the material conditions of systems within a submarine's designated SUBSAFE boundary.