

JOINT FLEET MAINTENANCE MANUAL
VOLUME I
NEW CONSTRUCTION
LIST OF EFFECTIVE PAGES

Page Numbers	Change in Effect	Page Numbers	Change in Effect
i thru ii	Change 3	I-2C-5 thru I-2C-8	REV C
iii thru vi	REV C	I-2D-1 thru I-2D-4	Change 1
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ix	Change 1	I-2E-3 thru I-2E-4	REV C
x thru xii	Change 2	I-2F-1	Change 1
I-1-1 thru I-1-2	REV C	I-2F-2	REV C
I-1A-1 thru I-1A-8	REV C	I-2G-1	Change 1
I-1B-1 thru I-1B-4	REV C	I-2G-2	REV C
I-1C-1	Change 1	I-2H-1 thru I-2H-2	REV C
I-1C-2 thru I-1C-3	Change 3	I-2I-1 thru I-2I-2	REV C
I-1C-4	Change 2	I-2J-1 thru I-2J-2	REV C
I-1D-1	Change 1	I-2K-1	Change 1
I-1D-2	Change 2	I-2K-2	REV C
I-1D-3 thru I-1D-4	Change 3	I-2L-1	Change 1
I-2-1 thru I-2-22	Change 2	I-2L-2	REV C
I-2A-1 thru I-2A-10	Change 1	I-2M-1	Change 1
I-2A-11	Change 2	I-2M-2	REV C
I-2A-12	REV C	I-2N-1	Change 1
I-2B-1 thru I-2B-3	Change 1	I-2N-2	REV C
I-2B-4	REV C	I-2O-1	Change 1
I-2B-5 thru I-2B-10	Change 1	I-2O-2	REV C
I-2B-11	Change 3	I-2P-1	Change 1
I-2B-12	REV C	I-2P-2	REV C
I-2C-1 thru I-2C-2	Change 1	I-2Q-1	Change 1
I-2C-3	REV C	I-2Q-2	REV C
I-2C-4	Change 1	I-2R-1	REV C

Page Numbers	Change in Effect	Page Numbers	Change in Effect
I-2R-2	Change 1	I-4C-1 thru I-4C-4	REV C
I-2R-3	REV C	I-4D-1 thru I-4D-2	Change 2
I-2R-4	Change 1	I-4D-3 thru I-4D-4	REV C
I-2S-1	Change 1	I-4E-1 thru I-4E-2	REV C
I-2S-2	REV C	I-4F-1	Change 2
I-2T-1 thru I-2T-2	REV C	I-4F-2 thru I-4F-5	REV C
I-2U-1 thru I-2U-2	REV C	I-4F-6	Change 1
I-3-1 thru I-3-2	Change 2	I-4G-1 thru I-4G-2	REV C
I-3-3 thru I-3-4	Change 3	I-5-1 thru I-5-2	Change 1
I-3-5 thru I-3-13	Change 2	I-5-3 thru I-5-4	Change 2
I-3-14	REV C	I-5-5	Change 1
I-3A-1	Change 2	I-5-6	REV C
I-3A-2	REV C	I-5A-1 thru I-5A-2	REV C
I-3B-1 thru I-3B-2	REV C	I-5B-1 thru I-5B-3	Change 1
I-3C-1 thru I-3C-20	REV C	I-5B-4	REV C
I-3D-1	Change 1	I-5C-1	Change 1
I-3D-2	REV C	I-5C-2	REV C
I-3E-1	Change 1	I-6-1 thru I-6-2	Change 1
I-3E-2 thru I-3E-12	REV C	I-6A-1 thru I-6A-2	REV C
I-4-1	Change 2	I-6B-1 thru I-6B-3	Change 1
I-4-2	Change 1	I-6B-4	REV C
I-4-3	Change 2	I-6C-1	Change 1
I-4-4	REV C	I-6C-2	REV C
I-4-5 thru I-4-7	Change 1		
I-4-8	REV C		
I-4A-1 thru I-4A-7	Change 2		
I-4A-8	REV C		
I-4B-1 thru I-4B-3	Change 2		
I-4B-4	REV C		

APPENDIX C
LIST OF ACRONYMS

2M	Miniature/Microminiature
3-M	Maintenance and Material Management
A&I	Alteration and Improvement
ACN	Advanced Change Notice
AEL	Allowance Equipage List
AOE	Fast Combat Support Ship
APL	Allowance Parts List
AT	Acceptance Trial
ATG	Afloat Training Group
AWP	Availability Work Package
BAWP	Baseline Availability Work Package
BDT	Builder's Dock Trial
BST	Builder's Sea Trial
BT	Builder's Trial
BUPERS	Bureau of Personnel
CAGE	Commercial and Government Entity
CASREP	Casualty Report
CD-ROM	Compact Disc Read Only Memory
CFE	Contractor Furnished Equipment
CHT	Collection, Holding and Transfer
CNO	Chief of Naval Operations
CO	Commanding Officer
COMFLTFORCOM	Commander, Fleet Forces Command
COMLANFLT	Commander, Atlantic Fleet
COMNAVSEASYSKOM	Commander, Naval Sea Systems Command
COMNAVSURFLANT	Commander Naval Surface Force Atlantic
COMPACFLT	Commander, Pacific Fleet
COMSUBDEVRON	Commander Submarine Development Squadron
COMSUBRON	Commander, Submarine Squadron
COMUSFLTFORCOM	Commander, United States Fleet Forces Command
COSAL	Coordinated Shipboard Allowance List
CPA	Carrier Planning Activity
CS/CCS	Command and Control Systems
CSCT	Combat Systems Certification Trial
CSMP	Current Ship's Maintenance Project
CT	Combined Trial
CVN	Nuclear-Powered Aircraft Carrier
CW	Continuous Wave
DDG	Guided Missile Destroyer
DIRSSP	Director, Strategic Systems Programs
DRA	Dead Reckoning Analyzer
DRAI	Dead Reckoning Analyzer Indicator
DRT	Dead Reckoning Tracer
EAB	Emergency Air Breathing
EDORM	Engineering Department Organization and Regulations Manual
EEBD	Emergency Escape Breathing Device

EGL	Equipment Guide List
EMBT	Emergency Main Ballast Tank
EOSS	Engineering Operational Sequencing System
EPM	Emergency Propulsion Motor
ESM	Electronic Warfare Support Measures
FBW SCS	Fly-By-Wire Ship Control System
FCT	Final Contract Trial
FDRMC	Forward Deployed Regional Maintenance Center
FIT	Fleet Introduction Team
FMA	Fleet Maintenance Activity
FMR	Field Modification Request
FOSAT	Fitting Out Supply Assistance Team
FRP	Fleet Readiness Plan
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GMI	Guarantee Material Inspection
GPETE	General Purpose Electronic Test Equipment
HF	High Frequency
HMR	Headquarters Modification Request
IEM	Inactive Equipment Maintenance
IFF	Identification Friend or Foe
IMP	Incremental Maintenance Plan
INSURV	Inspection and Survey
ISE	Independent Ship Exercise
ISEA	In-Service Engineering Activity
ISIC	Immediate Superior in Command
JFMM	Joint Fleet Maintenance Manual
JFMMBOD	Joint Fleet Maintenance Manual Board of Directors
JSN	Job Sequence Number
LCPC	Life Cycle Planning Conference
LHD	Amphibious Assault Ship
LOA	Light-Off Assessment
LOEP	List of Effective Pages
LSD	Dock Landing Ship
MACHALT	Machinery Alteration
MARMC	Mid-Atlantic Regional Maintenance Center
MBT	Main Ballast Tank
METCAL	Metrology and Calibration
MHC	Coastal Minehunter
MIP	Maintenance Index Page
MRC	Maintenance Requirement Card
MRMS	Maintenance Resources Management System
MSW	Main Seawater
MT	Magnetic Particle Testing
MT	Maintenance Team
MTR	Metrology and Calibration Technical Representative
NAVAIR	Naval Air Systems Command

NAVSEA	Naval Sea Systems Command
NAVSEA 08	Naval Sea Systems Command Nuclear Propulsion Directorate
NAVSEALOGCEN	Naval Sea Logistics Center
NAVSUP	Naval Supply Systems Command
NAWC	Naval Air Warfare Center
NJP	Non-judicial Punishment
NRMC	Navy Regional Maintenance Center
NSTM	Naval Ships' Technical Manual
NSWC	Naval Surface Warfare Center
NSWCCD	Naval Surface Warfare Center Carderock Division
NTP	Naval Telecommunication Procedures
O&MN	Operations and Maintenance, Navy
OCT	Operational Control Transfer
OIC	Officer In Charge
OPNAV	Office of Chief of Naval Operations
OPPE	Operational Propulsion Plant Examination
ORDALT	Ordnance Alteration
ORSE	Operational Reactor Safeguard Examination
OSI	Operating Space Item
OSS	Operational Sequencing System
PCO	Prospective Commanding Officer
PCU	Pre-Commissioning Unit
PDDI	Post Delivery Deficiency Item
PLAD	Plain Language Address Directory
PMS	Planned Maintenance System
POAM	Plan of Action and Milestones
PQS	Personnel Qualification Standard
PSA	Post Shakedown Availability
PSO	Prospective Supply Officer
QA	Quality Assurance
RDORM	Reactor Department Organization and Regulations Manual
RMC	Regional Maintenance Center
RSE	Reactor Safeguard Examination
RT	Radiographic Testing
SCN	Shipbuilding and Conversion, Navy
SDI	Ship Drawing Index
SDOSS	Sewage Disposal Operational Sequencing System
SHIPALT	Ship Alteration
SIB	Ship Information Book
SITREP	Situation Report
SME	Subject Matter Expert
SMMSO	Submarine Systems Monitoring Maintenance and Support Office
SNAP	Shipboard Nontactical Automated Data Processing Program
SOE	Submerged Operating Envelope
SORM	Ship Organization and Regulation Manual
SOSMRC	Senior Officer Ship Maintenance and Repair Course
SPALT	Strategic System Programs Alteration
SRD	Selected Record Drawing
SSBN	Nuclear-Powered Ballistic Missile Submarine
SSC	Space and Naval Warfare Systems Center

SSGN	Nuclear-Powered Guided Missile Submarine
SSM	Ship Systems Manual
SSN	Nuclear-Powered Attack Submarine
SRDRS	Submarine Rescue Diving Recompression System
SUBMEPP	Submarine Maintenance Engineering, Planning and Procurement Activity
SUBSAFE	Submarine Safety
SUPSHIP NN	Supervisor of Shipbuilding Newport News
SURFMEPP	Surface Maintenance Engineering Planning Program
SYSCOM	Systems Command
SWOS	Surface Warfare Officer School
TD	Test Depth
TDU	Trash Disposal Unit
TEMPEST	National Policy on the Control of Compromising Emanations (unclassified code name)
TFBR	Technical Feedback Report
TSC	Training Support Center
TSRA	Total Ship's Readiness Assessment
TVD	Technical Variance Documentation
TYCOM	Type Commander
UHF	Ultrahigh Frequency
UNSEARESCOM	Undersea Rescue Command
URO	Unrestricted Operations
USFF	United States Fleet Forces
USFFC	United States Fleet Forces Command
VLS	Vertical Launch System
VTI	Visual TEMPEST Inspection

INSURV	Prior to the acceptance and delivery of a new ship, whether built by a private or a naval industrial activity, all machinery, electronics and weapons systems installed shall be subjected to acceptance trials to determine that the installations are capable of meeting performance specifications. Depending upon your platform these trials are referred to as either Acceptance Trials, Combined Trials or INSURV. This independent verification of the ship's readiness for acceptance and recommendation for fleet introduction is the responsibility of the President, Board of Inspection and Survey.
Lead Maintenance Activity	The single activity responsible for integrating all maintenance and modernization on U.S. Naval ships during any type of availability.
Maximum Operating Depth (Also Maximum Authorized Operating Depth)	The depth to the keel for a particular submarine which is authorized by Commander Submarine Forces Atlantic/Commander Submarine Forces Pacific upon the recommendation of NAVSEA, as the depth not to be exceeded in operations. This depth is normally the Test Depth but may be reduced in specific cases. The depth authorized may be less than, but in no case exceed, the depth recommended by NAVSEA.
Mid-Cycle	Intermediate meeting held between Fleet Weeks to discuss a limited number of Technical Ticklers and pending action items.
Moderate Speed	The range of speed that allows the submarine optimum recovery (as shown on applicable submerged operating envelope curves) if loss of stern plane control and/or flooding occurs. Normally 8-15 knots.
Naval 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.
Post Shakedown Availability (PSA)	An industrial activity availability following Final Contract Trials/Guarantee Material Inspection assigned to correct deficiencies found during the shakedown period or to accomplish other authorized improvements.
Reliability Centered Maintenance	A methodology to develop or revise a maintenance approach with the objective of maintaining the inherent reliability of the system or equipment, recognizing that changes in inherent reliability may be achieved only through design changes.
Technical Data	Recorded information (regardless of the form or method of recording) of a scientific or technical nature (including computer databases and computer software documentation). This term does not include computer software or financial, administrative, cost or pricing, or management data or other information incidental to contract administration. The term includes recorded information of a scientific or technical nature that is included in computer databases. For these purposes, technical data includes the characteristic of a particular science, trade or profession.
Technical Tickler	A "living document" submitted by the Commander, United States Fleet Forces Command Maintenance Officer to present the Fleet's top material readiness issues to COMNAVSEASYSCOM and Office of the Chief of Naval Operations Resource Sponsors and used subsequently to record and track their planned corrective action.

Test Depth (TD)	For the purpose of the proper method of measuring and specifying Test Depth, the following applies: Test Depth shall be measured to the bottom of the keel for all types of submarine operations. Builders trials and trials following major industrial activity availabilities greater than six months, shall be at a tolerance of plus zero (0), minus twenty (20) feet of Test Depth when specified. All other trials can be conducted at 95% to 100% of Test Depth to satisfy all the requirements specified for 100% Test Depth.
Top Management Issues (TMI)	Top Management Issues, flag level panel meeting to discuss those issues requiring identification or realignment of resources (funding or manpower), or flag level participation to resolve.
Valve Repair/Restoration/Overhaul	<ul style="list-style-type: none">a. Repair. Any work done to improve the material condition or operation of the valve correcting deficient conditions such that the component may be returned to service, but which, in total does not meet the full intent of the applicable restoration/overhaul technical standard, is considered a repair.b. Restoration/Overhaul. All valve parts replaced or restored to the requirements of the applicable technical standard (e.g., the full intent of the restoration/overhaul technical standard is invoked).
Work	<ul style="list-style-type: none">a. Any action that actually or potentially changes (including disassembly for the purposes of inspection or repair) the approved configuration of any part, component or ship's system.b. Any action that removes or affects the ship's ability to operate ship's systems or components in accordance with ship's systems/operating manuals or reactor plant manuals.c. Any testing or inspections required to establish, maintain or reestablish certification.d. Any design, engineering, planning or configuration management functions that involve the final review and/or approval of technical information. <p>Examples of work include the following:</p> <ul style="list-style-type: none">1. Action which disassembles or removes any part, component or ship's system.2. Action specified in a Technical Work Document.3. Any action that removes or affects the ship's ability to operate ship's systems or components in accordance with ship's systems manuals, operating manuals or reactor plant manuals, excluding tagout in accordance with the Tagout Users Manual, including but not limited to:<ul style="list-style-type: none">(a) Component or system tests.(b) Intrusive inspections (such as breaking the plane of electrical panels requiring electrical safety).(c) Valve line ups that alter the normal system line up not governed by operating procedures.(d) Removing valve hand wheels, disconnecting of reach rods.

APPENDIX B₉SAMPLE TYCOM TO PRE-COMMISSIONING UNIT MESSAGE CONCERNING
ALPHA SEA TRIAL AUTHORIZED TEST AND OPERATING DEPTH (SUBMARINES)

FM COMSUB<LANT/PAC><NORFOLK VA/PEARL HARBOR HI>//
 TO PRECOMUNIT (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.>//
 COMSUBRON <NO.>//
 (SUPERVISING AUTHORITY)//
 BT
 UNCLAS //N09094//
 MSGID/GENADMIN/COMSUB(LANT/PAC)//
 SUBJ/(SUBS) PRECOMUNIT (SHIP NAME AND HULL NO.) ALPHA SEA TRIAL DEPTH AUTHORIZATION//
 REF/A/MSG/(ORIGINATING ACTIVITY)/(DTG)//
 REF/B/MSG/(ORIGINATING ACTIVITY)/(DTG)//
 REF/C/DOC/(TYCOM)<SER NO./DATE>//
 REF/D/DOC/(NAVSEA) (letter approving Sea Trials)
 NARR/REF A IS NAVSEA MATERIAL CONDITION READINESS REPORT AND ALPHA SEA TRIALS
 DEPTH RECOMMENDATION FOR <SHIP NAME/HULL NO.>. REF B IS <SUPERVISING AUTHORITY>
 REPORT OF FAST CRUISE COMPLETION AND READINESS FOR ALPHA SEA TRIALS <If shore power
 remained connected until start of Alpha Sea Trial, add the following statement: AND <SUPERVISING
 AUTHORITY> REPORT OF SATISFACTORY INSTALLATION OF SHORE POWER COVERS>. REF C
 CONCURRED WITH THE SEA TRIALS AGENDA. REF D APPROVED THE SEAL TRIALS AGENDA.//
 RMKS/1. REF A CERTIFIES MATERIAL CONDITION OF (SHIP NAME AND HULL NO.) FOR SEA TRIALS TO
 (SPECIFIED) PERCENT DESIGN TEST DEPTH. <If shore power remained connected until start of Alpha Sea
 Trial, add the following statement:., SUBJECT TO <SUPERVISING AUTHORITY> REPORT OF
 SATISFACTORY INSTALLATION OF SHORE POWER COVERS>. REF B IS <SUPERVISING
 AUTHORITY> REPORT OF SATISFACTORY INSTALLATION OF SHORE POWER COVERS>.
 2. REF B REPORTED FAST CRUISE COMPLETED SATISFACTORILY AND SHIP IS READY TO PROCEED
 ON ALPHA SEA TRIALS.
 3. (SHIP NAME AND HULL NO.) IS AUTHORIZED TO DIVE UNDER DELIBERATE AND CONTROLLED
 CONDITIONS TO (SPECIFIED) PERCENT TEST DEPTH IAW THE ALPHA SEA TRIALS AGENDA
 CONCURRED IN BY REF C AND APPROVED BY REF D.
 4. FOR OIC (SHIP NAME): RECOGNIZING LIMITED UNDERWAY OPERATIONAL EXPERIENCE LEVEL,
 EXERCISE EXTREME CAUTION WHILE CONDUCTING ALL OPERATIONS AT MAX AUTH DEPTH.
 ENSURE YOUR SHIP CONTROL PARTIES ARE WELL VERSED IN ALL ASPECTS OF SHIP'S
 COMPENSATION AND EFFECTS OF SPEED AND TRIM ADJUSTMENTS, AS WELL AS PROCEDURES TO
 PREVENT EXCEEDING MAX AUTH DEPTH.//
 5. EXCEPT AS LISTED IN 6. BELOW, THIS DEPTH AUTHORIZATION IS AUTOMATICALLY
 SUSPENDED UPON RE-ENTRY TO THE SUBSAFE CERTIFICATION BOUNDARY OR CASUALTY
 AFFECTING RECOVERABILITY, SALVAGE, WATERTIGHT INTEGRITY, OR OPERATION OF SHIP'S
 CONTROL SURFACES. THE SHIP SHALL NOT OPERATE AT A DEPTH GREATER THAN 200 FEET
 UNTIL RE-ENTRY IS CERTIFIED TO TYCOM AND TYCOM GRANTS APPROVAL TO OPERATE TO
 PREVIOUSLY AUTHORIZED DEPTH.//
 6. RE-ENTRY CONTROL TO ADJUST FLOOD CONTROL HYDRAULIC VALVE TIMING WILL BE
 CERTIFIED BY THE COMMANDING OFFICER, TYCOM CERTIFICATION IS NOT REQUIRED, AND A
 SITREP WILL BE TRANSMITTED PRIOR TO RESUMPTION OF OPERATION BELOW 200 FEET.//
 BT

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

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- (2) To evaluate the effectiveness of the ship's administration and training policies. Inspections of this nature are defined as Work-ups and normally require the addition of at least two officers to the inspection team.
- (3) To conduct spot checks to monitor progress in specific material, administrative and training areas. Visits of this nature are defined as Monitoring Visits.
- b. Conduct. The extent, type, and frequency of periodic monitoring inspections and visits should be determined by the ISIC. Submarine monitoring inspections may be combined with those required by reference (e). The initial inspection should be broad in scope in order to apprise the ISIC of the adequacy of the ship's performance and progress.
- c. Scheduling. The initial inspection should be conducted within a 45 day time period after the arrival inspection. The initial visit will indicate the frequency and scope of subsequent Tech Assists and Monitoring Visits. Some inspections should be conducted on an unannounced basis. In general, any required Work-ups should be scheduled in advance of Key Events. All inspections should be scheduled to minimize interference with industrial activity and Ship's Force work.
- d. Reports. Formal reports are not required. However, the ISIC should advise the TYCOM of situations where the completion of Key Events is in jeopardy due to a lack of progress in any of the subject areas identified in Appendix B of this chapter.
- e. Inspection Areas. Initial inspections normally examine the effectiveness of Ship's Force follow-up actions as a result of the arrival assist. Subsequent inspections and visits should review the areas designated in Appendix B of this chapter as appropriate.

3.3.3 Pre-Reactor Safeguard Examination (Nuclear Powered Ships only).

- a. Purpose. To evaluate the readiness of the Engineering/Reactor Department to undergo an RSE by representatives of Naval Sea Systems Command Nuclear Propulsion Directorate (NAVSEA 08). Appendix C of this chapter provides a sample Pre-RSE Notice which should be tailored to fit your specific platform.
- b. Conduct. The Pre-RSE performed by the ISIC with TYCOM assistance is not intended to duplicate the inspections for which readiness is being evaluated. It is prudent, however, to use an inspection plan similar to that employed by NAVSEA 08. Normally the crew's readiness can be assessed within two days using such a plan. The Supervising Authority will arrange for minimum industrial activity work interference during this inspection.
- c. Scheduling. The ISIC shall conduct a Pre-RSE within six weeks of intended criticality. The Pre-RSE shall be scheduled such that the qualification program and material condition of the ship are sufficiently complete to allow for a thorough inspection, but early enough to allow time for the correction of identified deficiencies prior to criticality. The TYCOM should be advised approximately two months prior to the tentative date and confirmed dates should be established approximately one month prior to the inspection.
- d. Composition of the Inspection Team. The Pre-RSE Inspection Team should consist of:
 - (1) A nuclear trained member of the ISIC Staff, usually the Deputy Commander for Readiness or Training.
 - (2) A qualified nuclear engineer with experience in the billet.
 - (3) A nuclear trained officer from the TYCOM Staff. Arrangements for the participation of TYCOM Staff members should be initiated by the ISIC at least one month prior to the anticipated inspection date.
 - (4) The Prospective Commanding Officer (PCO) of the next local ship in a new construction status.
 - (5) The TYCOM industrial activity representative.
- e. Reports. The Senior Inspector should provide the ship with an informal report of the findings with a copy to the ISIC and TYCOM.

- f. Inspection Areas. The Pre-RSE should, as a minimum, encompass the following:
 - (1) An administrative review.
 - (2) Observation of basic drills and evolutions not requiring reactor operation or special conditions.
 - (3) Personnel interviews and written tests.
 - (4) Material inspection.

3.3.4 Crew Certification. Crew certification is required for new construction ships. Depending upon the platform and TYCOM policy, crew certification will be accomplished in two, three or four phases.

- a. Purpose. Initial phases determine the state of readiness and training of Ship's Force, particularly in the areas of watchstander qualifications, damage control readiness, status of operational and emergency bills, onboard supply of essential technical manuals and general operational knowledge. Later phases are structured to certify that the state of crew training is satisfactory for at-sea operations.
- b. Scope. Certifications for submarines and surface ships will be conducted using the guidance of the applicable TYCOM training manual, references (f), (g), and (h) through (l). Reference (m) provides additional direction for aircraft carriers.

3.3.5 Sonar Certification (Applicable Surface Force Ships and Submarines). Sonar certification for surface force ships is accomplished in accordance with reference (b). Submarine sonar certification is accomplished in accordance with references (h) through (l), during a designated Sea Trial just prior to the Combined Trial. Sonar certification is a prerequisite for Antisubmarine Warfare certification on surface ships and the Weapons/Tactical Readiness Evaluation on submarines.

3.3.6 Aviation Facility Certification (Air Capable Ships only). Reference (n) requires that all aviation facilities aboard naval ships which operate aircraft be formally inspected and certified adequate and safe for flight operations. It further directs, as implemented by references (o) and (p), that Commander, Pacific Fleet (COMPACFLT) and Commander, United States Fleet Forces (USFF) shall establish responsibilities and procedures for mandatory certification of all ships with aviation facilities. Reference (n) also directs the Chief of Naval Operations (CNO) to establish responsibilities and procedures for mandatory certification of all ships' aviation facilities, provide for certification inspection teams and issue approved standards for certification. Naval Air Systems Command (NAVAIR) has overall responsibility for certification of aviation facilities and equipment in Naval ships. Aviation facility and equipment certification is a procedure which verifies and documents that the aviation facilities and equipment aboard ships are properly installed, operational, and adequate for the safe conduct of aircraft operations. Details for certifications can be found in reference (q), and in TYCOM specific instructions such as reference (r).

- a. Management Structure.
 - (1) The Navy Shipbuilding Program Manager is responsible for budgeting for the certification of ships involved in construction and modernization programs.
 - (2) Naval Air Warfare Center (NAWC) administers the aviation facilities and equipment certification programs and will establish test programs and procedures for each aviation facility and equipment component.
- b. Certification Procedures.
 - (1) Requests. Submit requests for certification directly to NAWC. The ship's TYCOM will be advised of all requests for equipment and facility certification. Individual ships desiring certification inspections should submit requests via their TYCOM to ensure optimum scheduling of the certification team. Automatic Carrier Landing System certification requests will be submitted per reference (s).
 - (2) Inspection and Testing. The ship's aviation facilities and equipment will be inspected and tested by a team coordinated by a NAWC representative. Upon completion, the NAWC team coordinator will, (via message to NAWC, the TYCOM, and other appropriate commands) make a recommendation to either grant, rescind, or withhold certification. This recommendation is to be predicated upon all aviation facility systems or equipment being properly installed, configured, operational, and maintained as prescribed by applicable