NAVAL SEA SYSTEMS COMMAND

JOINT FLEET MAINTENANCE MANUAL (JFMM)

VOLUME VII

CHAPTER 4

CONTRACT SPECIFICATION DEVELOPMENT

APPENDIX E

PROCEDURES FOR THE PREPARATION AND USE OF WORK ITEM SPECIFICATIONS FOR SHIP REPAIR

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SECTION 1

PURPOSE

1-1. The purpose of this document is to publish mandatory procedures for the preparation, utilization, and invocation of Work Items as directed by NAVSEAINST 9070.1 (Series) for repair and alteration of U.S. Navy ships and craft. This Appendix may be revised periodically at meetings of the Standard Specification for Ship Repair and Alteration Committee (SSRAC) to reflect changes in policy and procedure adopted by the Committee. Revised editions of this Appendix will be available on the SSRAC web site at https://www.navsea.navy.mil/Home/RMC/CNRMC/Our-Programs/SSRAC.aspx

SECTION 2

DEFINITIONS

2-1 Work Item (4E Spec) - An individual set of work requirements written in a standard format to accomplish a specific alteration or repair.

2-2 Specification (Schedule) - The set of Work Items contained in a Job Order for repair and alteration of vessels.

2-3 Specification Package - The Work Items, reference data, and all contractual requirements.

2-4 ***NAVSEA*** Standard Items - Mandatory and non-deviational.

2-4.1 Standard Items (***N***SIs) - Items that establish uniform methods and standards for routine requirements normally invoked in ship repair Work Items. These items are invoked whenever applicable without modification. ***N***SIs are approved and maintained by the SSRAC.

NOTE: THE ADDITION OF INSPECTIONS OR TESTS TO NAVSEA STANDARD ITEMS THAT WILL GLOBALLY AFFECT THE NAVSEA STANDARD ITEMS ARE NOT AUTHORIZED WITHOUT WRITTEN APPROVAL FROM THE SSRAC DIRECTOR. THESE CHANGES MUST BE SUBMITTED IN ACCORDANCE WITH THE SSRAC PROCESS FOR FINAL ADJUDICATION AND IMPLEMENTATION INTO FUTURE NAVSEA STANDARD ITEMS.

2-4.1.1 Requests for deviations from ***NAVSEA*** Standard Items must be submitted in writing and routed to the SSRAC Director for adjudication and approval. A separate deviation request must be submitted for each availability and must fully explain the reason(s) for the deviation (i.e., why deviation is required, how planning would be affected, how availability would be impacted, etc.). The RMC retains the authority to make changes to work items in a non-precedent setting situation. This does not include requests for deviation to technical requirements, which may require a Departure From Specification (DFS). For instances when a DFS is required, the requirements of the Joint Fleet Maintenance Manual (JFMM) must be followed.

2-4.1.2 Completed ***NAVSEA*** Standard Item Deviation Request Forms are to be submitted through the local RMC. Local standards coordinator will forward Deviation request form with RMC recommendation to ssrac@navy.mil for adjudication.

NAVSEA Standard Item Deviation Request Forms can be found at; https://www.navsea.navy.mil/Home/RMC/CNRMC/Our-Programs/SSRAC/

2-4.2 Local Standard Items (LSIs) - Items that meet the criteria of SIs but are approved by the Naval Supervisory Authority (NSA) on a case basis for local or port specific requirements such as local environmental requirements or heavy weather plans. LSIs must not be used in coast-wide bidding or extended solicitations. LSIs are numbered sequentially in the 099-XX series (i.e., 099-XXSE for a Southeast RMC LSI). Approval of LSI's will be made at the local level.

SECTION 2

DEFINITIONS

2-5 Templates - A preset 4E compliant, five-paragraph document that a planner will adjust, as allowed, creating a Work Item Specification for single or multiple ship classes which documents maintenance requirements tasked on validated Work Notifications. Templates standardize the development of repetitive Work Item Specifications for both Life Cycle and Corrective Maintenance. Additionally, templates increase the speed of planning by providing a reliable starting point for Work Item development, which utilizes approved standard phrasing, standard formatting, appropriate references, and historically based Front Loads.

NOTE: THE ADDITION OF INSPECTIONS OR TESTS (CHECKPOINTS) TO MASTER SPECIFICATION CATALOG TEMPLATES (E.G., MSWT, CSWT, SWT) THAT WILL GLOBALLY AFFECT THE TEMPLATES ARE NOT AUTHORIZED WITHOUT WRITTEN APPROVAL FROM THE SSRAC DIRECTOR. THESE CHANGES MUST BE SUBMITTED IN ACCORDANCE WITH THE MSC PROCESS FOR FINAL ADJUDICATION AND IMPLEMENTATION INTO FUTURE TEMPLATES.

2-5.1 Standard Work Templates (SWTs) - Templates that are prepared for specific repairs, alterations, or to provide support for work frequently occurring in ship repair utilized across ship classes.

2-5.1.1 User activity may add/delete requirements or may use "Intentionally Left Blank" for non-applicable reference(s) or requirement(s) as shown in Section 7-2.

2-5.1.2 User activity must fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section 7-2.

2-5.2 Class Standard Work Templates (CSWTs) - Templates that are prepared for specific repairs, alterations, or to provide support for work frequently occurring in ship repair utilized on a specific class of ship.

2-5.2.1 User activity may add/delete requirements or may use "Intentionally Left Blank" for non-applicable reference(s) or requirement(s) as shown in Section 7-2.

2-5.2.2 User activity must fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section 7-2.

2-5.3 Local Work Templates (LWTs) - Templates that are prepared to provide instruction or support for work frequently occurring in ship repair that is unique to a specific geographic location.

2-5.3.1 User activity may add/delete requirements or may use "Intentionally Left Blank" for non-applicable reference(s) or requirement(s) as shown in Section 7-2.

2-5.3.2 User activity must fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section 7-2.

2-5.4 Basic Work Shell Templates (BWSTs)-When no applicable template(s) (MSWT,

CSWT, SWT or LWT) is applicable, develop a BWST in accordance with the requirements of Section 7.

2-5.5 Master Specification Work Templates (MSWTs) – Templates that are prepared to ensure full completion of specific Mandatory Technical Requirements (MTRs) within the Class Maintenance Plan (CMP) utilized on a specific class of ship.

2-5.5.1 User activity must not delete Mandatory Technical Requirement paragraph(s) or associated references as documented, nor must "Intentionally Left Blank" be used in place of reference(s) or requirement(s) as shown in Section 7-2.

2-5.5.2 User activity must fill in all blanks supporting Mandatory Technical Requirement(s), they must not use "Intentionally Left Blank" as shown in Section 7-2.

2-5.5.3 User activity can edit non-MTR related paragraphs to suit authorized work."

2-6 The Master Specification Catalog Maintenance Office (MSCMO) is responsible for approving and maintaining MSWTs, CSWTs and SWTs. LWTs are approved and maintained at the local level.

2-6.1 MSWT paragraphs supporting MTRs are mandatory as written, user activities will only fill in blanks within paragraphs that support MTRs. This ensures full completion of MTRs. MSWTs do provide limited discretion for the editing of non- MTR paragraphs.

2-6.2 The use of the applicable 998 series CSWTs or SWT's in preparation of Hazardous Waste Work Items is mandatory. User activity must fill in applicable blanks only.

2-6.3 The use of the applicable 123 series and 992 series CSWTs or SWT in preparation of Cleaning and Pumping Work Items is mandatory.

2-6.3.1 User activity may add/delete requirements or may use "Intentionally Left Blank" for non-applicable reference(s) or requirement(s) as shown in Section 7-2.

2-6.3.2 User activity must fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section 7-2.

2-7 Material - To standardize how Material Items are documented within Work Item Specifications, the categorization of Material as Raw Material, Repair Parts or Common Shelf Items are defined as follows:

2-7.1 Raw Material - Material which will undergo extensive shop work including significant joining, cutting, forming, or machining processes prior to use onboard the ship (e.g. plate, beams, bars, piping, casting components, etc.); regardless if this material is CFM or GFM (LLTM, Push, or Kitted) – Standard Phraseology B17 must not be used for listing Raw Material items.

2-7.2 Repair Parts - Material which will be installed as is, generally requiring only operational adjustment or calibration to meet the intended use (e.g. Pump Impellers, Close Coupled Pump and Motor Assemblies, Valves, Remote Operator Deck Gear Box Assemblies, Electrical Controllers, Heat Exchangers, Bearings, Packing, Seals, etc.); if this material is CFM– Standard Phraseology B17 must be used for listing Repair Parts. GFM (LLTM, Push, or Kitted) will be listed in paragraph 5 of the work item.

2-7.3 Common Shelf Items - Materials that are general use consumables (e.g. fasteners, gaskets, cotter pins, O-Rings, seals, etc.) - Standard Phraseology B17 must not be used for listing Common Shelf Items.

2-8 Government Furnished Material (GFM): Major items of material which can only be procured by the government (e.g. Controlled Material, Ship Alteration material procured by a Program Office, or Refurbishment Program Material) or items that are difficult for a contractor to obtain in a timely manner based upon the contract award date to support production work; categories of GFM are defined as follows:

2-8.1 Long Lead Time Material (LLTM): ***Material whose delivery date after receipt of order (ARO) exceeds 30 days or is deemed critical to the success of the availability by the Maintenance Team Project Manager regardless of the lead-time.***

2-8.2 ***Push: Repair or Alteration Material and Special Tools provided to a Ship's Maintenance Availability by a government entity (e.g. Ship's Force, TYCOM, NSWCs, NAVSUP WSS, NAVSEA) without any purchasing action required on the part of the Planning Activity or RMC Logistics Depart.***

2-8.3 ***Kitted: Alteration Material procured and assembled into a kit through a separate Government contract and provided to a Ship's Maintenance Availability by an outside activity (i.e. Program Office Class Planning Yard or PARM). Planning Activities may utilize the associated Program Office approved 4720/3 (Ship Alteration Material Summary) as a Work Item Reference for ShipAlt or AER kit.***

Note: Additional information can be found in Section 7-2.6.

2-9 Reference Tier documents are defined in NAVSEA Standard Item 009-004 Notes.

2-10 Front Loads and Level of Effort (LOE) Growth Reservations are used to accomplish anticipated repairs which could not be clearly defined while evaluating and planning Work Items in advance of a ship's availability.

2-10.1 Front Loads direct a contractor to accomplish a defined quantity of a specific task (i.e., replace 100 sq ft of hull plating, vee-out and weld 10 linear inches of deteriorated welds) to address conditions found during execution.

2-10.2 Level of Effort (LOE) Growth Reservations provide a number of man-days and material dollars to address conditions found during execution.

SECTION 3

PROGRAM OBJECTIVES

3-1 In order to reduce the Total Ownership Costs (TOC) of preparing specifications, while maintaining quality standards and enabling execution savings through standardization, a program is necessary that will:

3-1.1 Make specification preparation less time consuming and aid the planner or surveyor in Work Item preparation.

3-1.2 Form the basis for a uniform training program for new personnel.

3-1.3 Improve the overall quality of Work Items to enhance understanding of requirements and to reduce the cost of work.

3-1.4 Present a uniform policy for ship repair nationwide.

3-1.5 Provide definite Quality Assurance (QA) requirements to ensure quality and reduce the surveillance burden of inspection personnel.

3-1.6 Allow temporary detail of personnel to another activity in peak workload periods without significant retraining.

3-1.7 Provide the necessary degree of standardization required to input and retrieve data via automated data processing centers.

3-2 NAVSEA directed that a committee of key personnel from the various user activities be formed to establish standardization policy, to prepare procedures for specification preparation, and to develop high quality Work Items for certain recurring repairs. This committee, Standard Specification for Ship Repair and Alteration Committee (SSRAC), was established by NAVSEAINST 9070.1 (Series). These standardized items and Work Items:

3-2.1 Are technically correct, contractually enforceable, and of sufficient scope to be of use at various activities for a broad range of requirements.

3-2.2 Are as self-contained as feasible to allow invocation at each activity without reference to numerous additional documents.

3-2.3 Avoid the use of instructions, work practices, or terminology not common to all activities.

3-2.4 Use the same format and phraseology.

3-3 Each activity must aggressively pursue this mandatory program and must routinely provide suggested revisions and modifications to the SSRAC where use has proven these changes necessary or advisable. SSRAC meetings are scheduled annually. Agenda items to be considered by the SSRAC must be proposed by interested activities 4 months prior to the scheduled meeting. The nominating activity must forward proposed changes/additions to the SSRAC for consideration 60 days prior to the scheduled meeting utilizing the proposal form provided by the SSRAC.

3-4 SSRAC products are available for viewing or downloading on the Worldwide Web at http://www.navsea.navy.mil/Home/RMC/CNRMC/OurPrograms/SSRAC.aspx

SECTION 4

STANDARD ITEMS AND WORK ITEMS

4-1 The specification ***NAVSEA*** standardization concept is used to promote a program to promulgate and utilize the best procedures to be employed in developing Work Items as defined below:

4-1.1 ***NAVSEA*** Standard Items (***N***SIs) are items that establish uniform methods and ***NAVSEA*** standards for routine requirements normally invoked in ship repair Work Items. These items are invoked whenever applicable without modification.

4-1.1.1 There are 2 categories of ***N***SIs from the standpoint of utilization. A Category I ***N***SI, when invoked, is applicable to the entire Job Order without further reference in the individual Work Item. A Category II ***N***SI, when applicable, must be invoked in each Work Item.

4-1.1.1.1 A ***NAVSEA*** Standard Item may be assigned as Category I by the SSRAC if its requirements are either (a) safety (personnel or equipment) or environmental related, (b) administrative or managerial (non-trade) in nature, or (c) readily discernible, by shipcheck or listed references, based on the scope of repairs specified in a Work Item. A ***N***SI may be assigned as Category I by the SSRAC if it is applicable to only a unique class of ship or location of work and it meets the safety or administrative criteria above. Category I ***NAVSEA*** Standard Items must stand alone and require no utilization guidance or phraseology. The official source for ***NAVSEA*** Standard Items is the SSRAC web site at https://www.navsea.navy.mil/Home/RMC/CNRMC/Our-Programs/SSRAC.aspx

4-1.2 Local Standard Items (LSIs) are items that meet the criteria of SIs but are approved on a case basis for local area use only. LSIs must not be used in coast-wide bidding or extended solicitations. LSIs are numbered sequentially in the 099-XXXX series (i.e., 099-XXSE for a Southeast Regional Maintenance Center LSI). Approval of LSIs will be made at the local level.

4-2 Changes or additions to ***N***SIs are identified by showing added or changed verbiage in bold Italics. Deletions to ***N***SIs are identified by a vertical line in the right-hand margin beside the deletion. New or completely revised ***N***SIs are identified by a vertical line in the right-hand margin beside the ITEM NO, DATE, and CATEGORY lines, e.g.:

ITEM NO: 009-001
DATE: 01 AUG 2008
CATEGORY: I

4-3 ***N***SIs and invoking phraseology (Section A of Annex B) developed at the SSRAC meeting must be invoked in all new procurements issued after receipt from the SSRAC Chairman, provided that the receipt of the ***N***SIs supports the planning timetable for use. Via STANDARD SPECIFICATION FOR SHIP REPAIR AND ALTERATION COMMITTEE (SSRAC) instruction NAVSEAINST 9070.1E CNRMC.

SECTION 4

STANDARD ITEMS AND WORK ITEMS

4-4 Newly developed or revised ***NAVSEA*** Standard Phraseology (Sections B-F of Annex B) must be utilized upon receipt.

4-5 Annex A contains an invoking guide for Category I ***NAVSEA*** Standard Items. This Annex must be updated after each SSRAC meeting and must be published with the results of the meeting and copies of the ***NAVSEA*** Standard Items and new or revised Work Templates. |

4-6 Annex B is a comprehensive listing of approved NAVSEA Standard Phraseology and is provided with notes and usage guidance for preparation of Work Items where a standard phrase is appropriate to describe the work requirement. Additions, deletions, or modifications to Annex B will be made by the SSRAC and a new Annex B will be published after each SSRAC meeting. Other changes deemed necessary by the SSRAC Chairman will be promulgated by correspondence for later incorporation into Annex B. Issues relative to the interpretation of standard phrases will be forwarded to the Chairman of the SSRAC with supporting documentation and recommendations for review prior to effecting contract modifications at the local level. Changes required by such a review will be promulgated by the SSRAC Chairman.

4-7 Utilization of ***NAVSEA*** Standard Phraseology for invoking Category II ***NAVSEA*** Standard Items (Section A of Annex B) is mandatory. ***NAVSEA*** Standard Phraseology in Sections B through F of Annex B must be utilized when applicable.

4-8 Planner's Notes must be used to explain "fill in the blank" information on MSWTs, CSWTs, SWTs, and LWTs. Planner’s Notes may also be used to provide other types of information that may be of value to the Planner, for example:

4-8.1 When accomplishing generator repairs, separate Work Item must be invoked using 311-022 template to accomplish testing.

4-8.2 Verify and update drawings and revisions.

SECTION 5

WORK ITEM PHILOSOPHY

5-1 Work Items are technical documents that convert work requirements to clear, concise, well-defined, and contractually sound terms. Each becomes a legally binding contractual document that is the determining factor as to what the Government will receive from the contractor accomplishing the work. Each must provide sufficient information to the contractor to define precisely the minimum requirements of the Government and be free of language open to diverse interpretations.

5-2 Work Items normally describe what to do rather than how to accomplish the work. There are instances where the Government desires that the work must be accomplished in a specific manner. In these instances, the procedures must be clearly defined, but must not be so worded that they unreasonably restrict competition.

5-3 Work Items must be written in a logical sequence of work operation whenever possible (i.e., remove, disassemble, inspect, report, repair, assemble, install, and test).

5-4 Each Work Item must clearly define the work requirements and be as self-contained as possible to enable the user to understand the requirements without having to research a myriad of reference data. The Work Item requirements must include the minimum specific tests and inspections that must be accomplished by the contractor to ensure that the desired quality is achieved.

5-5 Work Items must be limited to the requirements necessary to achieve the desired result and must not upgrade equipment and installations to exceed original design requirements without approval of the customer. Work Items must not alter the military characteristics of any ship or in any other manner require repairs or modifications to equipment or systems that would normally be considered to be under the purview of the Fleet Modernization Program (A and K ALTS) or Type Commander Alterations Equivalent to a Repair (AER - D and F ALTS) without prior approval of NAVSEA.

SECTION 6

FORMAT

6-1 The following format must be utilized in the preparation of SIs and LSIs:

NAVSEA or SUPSHIP or REGIONAL MAINTENANCE CENTER STANDARD ITEM or LOCAL STANDARD ITEM

FY-__

ITEM NO: _____
DATE: _____
CATEGORY: _____

1. SCOPE:

   1.1 Title: (When the length of a title continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

2. REFERENCES:

   2.1 (Standard Items must be listed first, if referenced in the Item.)

   2.2 (When the length of a reference continues past one line, the beginning of the subsequent lines will be indented the same as the first line, as demonstrated here.)

3. REQUIREMENTS:

   3.1

   3.2

      3.2.1

         3.2.1.1

4. NOTES:

   4.1 None. *

* In the event there are no NOTES, the word None must appear in 4.1.

6-2 The following format must be used in the preparation of Work Items and templates:

SHIP: _____ ITEM NO: _____

COAR: _____ PCN: _____
(Delete line if not required)

*____ FILE NO: (IF APPLICABLE)_____CMP: (IF APPLICABLE)_____

SECTION 6

FORMAT

(*SWT, CSWT, LWT, BWST or MSWT as applicable)
REVISED: (IF APPLICABLE)_____PLANNER:_____

1. SCOPE:

1.1 Title: (When the length of a title continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

1.2 Location of Work:

1.2.1 (If only one, use 1.2.1 or Not Applicable)

1.2.2 (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

1.3 Identification:

1.3.1 Quantity ( ), (If only one, use 1.3.1 or Not Applicable)

1.3.2 (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

1.4 Security Classification of Equipment, Components, Spaces and Documents: The Equipment, Space or Document is classified and subject to the applicable provisions of the National Industrial Security Program Operating Manual, DOD 5220.22M (0584-LP-179-6400). (Omit when not applicable)

NOTE: All entries for this paragraph are to be listed. Attachments are not allowed.

1.4.1 Spaces: (Omit when not applicable) (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

1.4.2 Equipment: (Omit when not applicable) (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

1.4.3 Documents: (Omit when not applicable) (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

2. REFERENCES:

2.1 (Standard Items must be listed first, if referenced in the item)

2.2 (When the length of a reference title continues past one line, the beginning of subsequent lines will be indented the same as the first line, as demonstrated here.)

SECTION 6

FORMAT

3. REQUIREMENTS:

3.1

3.1.1

3.2

3.2.1

3.2.1.1

3.2.2

3.3

The following format must be used to identify each repair part in paragraph 3 (use Standard Phrase B17).

TOTAL QUANTITY REQUIRED	NAME OF PART	PIECE NO.	REF NO.	FIGURE DRAWING NO.	PART NO.

4. NOTES:

4.1 None. *

4.1.1

4.2

* In the event there are no NOTES, the word None must appear in 4.1.

5. GOVERNMENT FURNISHED MATERIAL (GFM):

5.1 LLTM:

5.1.1 None. ** ***

5.2 PUSH MATERIAL:

5.2.1 None. ** ***

5.3 KITTED MATERIAL:

5.3.1 None. ** ***

** In the event there is no GFM, the word None must appear.

*** In the event there is GFM, the following format must be used in 5.

SECTION 6

FORMAT

5.1 LLTM:

TOTAL QUANTITY PROVIDED	NAME OF PART	PIECE NO.	REF. NO.	NATIONAL STOCK NO.	PARA NO.
5.1.1					

5.2 PUSH MATERIAL:

TOTAL QUANTITY PROVIDED	NAME OF PART	PIECE NO.	REF. NO.	NATIONAL STOCK NO.	PARA NO.
5.2.1					

5.3 KITTED MATERIAL:

TOTAL QUANTITY PROVIDED	NAME OF PART	PIECE NO.	REF. NO.	NATIONAL STOCK NO.	PARA NO.
5.3.1					

NOTE: PARA NO. -- Identify what basic paragraph in body of Work Item requires the part/material.

6-3 SIs, LSIs, templates, and locally prepared Work Items must be prepared in a 12 character per inch (CPI) font, with a left, right, top, and bottom margin of one inch.

NOTE: FORMAT TO SUPPORT THE AUTOMATED INFORMATION SYSTEM UNDER ONGOING REVIEW

SECTION 7

DOCUMENT PREPARATION AND UTILIZATION *INSTRUCTIONS*

7-1 Writing ***NAVSEA*** STANDARD ITEMS and LOCAL STANDARD ITEMS.

7-1.1 The heading of each ***N***SI or LSI must be in accordance with Section 6-1. The FY, ITEM NO., DATE, and CATEGORY must be assigned to each ***N***SI by the SSRAC, or by the SUPSHIP or REGIONAL MAINTENANCE CENTER as applicable for LSIs. The date must be the date of issue of an ***N***SI or LSI when changed or reviewed (even when no change was made). The FY must be changed to show the fiscal year of use. This will always determine the latest version of the particular ***N***SI or LSI.

7-1.2 When preparing ***N***SIs and LSIs reference revision designations (letters and/or numbers) will not be included.

7-1.3 The remainder of ***N***SIs and LSIs must follow the criteria of Section 7-2.2 through | 7-2.6, except SUPSHIP/RMC references are not to be used for ***N***SIs.

7-2 Writing work items, templates and, Request for Contract Change (RCC).

7-2.1 The heading portion of SWTs, CSWTs, LWTs, BWSTs, or MSWTs and Work Items must be completed as follows, using capitalization throughout:

7-2.1.1 SHIP - Name and hull number of ship or number of each boat or craft.

7-2.1.2 COAR - Customer Order Acceptance Record (COAR) is a locally assigned number identifying the responsible funding organization.

7-2.1.3 FILE NO - The SWT, CSWT, LWT, BWSTs, or MSWTs file number if applicable.

7-2.1.4 REVISED - Day, abbreviated month, and year (DD MMM YYYY) of either original issuance date or revision date, for example 06 APR 1995 (applies to templates only).

7-2.1.5 ITEM NO - The item number must be assigned in accordance with Section 7-3.

7-2.1.6 PCN - The Project Control Number, or PCN, is the identifying number of the applicable work authorization document. This can be the SWLIN number and the applicable line item(s), number(s), the job control number(s) (JCN) from the OPNAV 4790/2K form, Ship's Maintenance Action Form (SMAF), or a number which will identify the source from which the authorized work requirements are being written. Do not resolve space limitations by inserting PCN data in any Work Item paragraph.

7-2.1.7 CMP - The Class Maintenance Plan is the identifying number assigned to the maintenance action, which the Work Item accomplishes. The first 3 digits of the CMP generally follow the ESWBS numbering system.

7-2.1.8 PLANNER – Last, First name of each person contributing to the preparation of the Work Item.

7-2.2 Paragraph 1 must be SCOPE. The SCOPE paragraph must be completed as follows:

7-2.2.1 Subparagraph 1.1 - The word "Title" must appear first, followed by a colon. A brief title will then follow in noun, verb order; the noun must be title case (first letter of each word is capitalized) and the verb lowercase. Articles (e.g., “a”, “an”, “the”), prepositions (e.g., “by”, “for”, “in”, “to”) or conjunctions (e.g., “and”, “but”, “if”) that appear within the title must be lowercase. Give a brief description (which can include a descriptor that clearly identifies the work item uniqueness where generic titles make work item identification confusing) of equipment using common shipboard terminology, followed by a semicolon, and work to be done. Title must be singular. The completion of this paragraph is mandatory. Examples are as follows:

REPAIR TITLES:

2A Main Feed Pump; repair
Fire Main Piping Zone One; repair
Surface Search Radar; install
Bake Oven; repair
Dry Cleaning Plant; repair (OPTION ITEM)

SHIP ALTERATION/MODERNIZATION TITLES:

ShipAlt CG47-00123K, Title; accomplish

ORDALT 12345, Title; accomplish

ALTERATION EQUIVALENT TO REPAIR (AER) TITLES:

CG47 Class AER 123, Title; accomplish

7-2.2.2 Subparagraph 1.2 - The words "Location of Work" followed by a colon must appear first.

7-2.2.2.1 Subparagraph 1.2.1 - A compartment designation must be listed when applicable. Compartment nomenclature used in this subparagraph must be obtained from the Ship’s Booklet of General Plans (BGP) or Booklet of Deck Plans (BDP), as appropriate for class of ship and validated during a Ship Check, with the exception of tanks and voids. Compartment nomenclature for tanks and voids must be obtained from the Corrosion Control Information Management System (CCIMS) and validated during a Ship Check. For ease of access, CCIMS data is presented by hull within the Government Planners Handbook and Estimating Guide. Appropriate amplifying location of work

information e.g., deck, frame and longitudinal designations, must be used when a concise and explicit location can be readily identified. Examples are as follows but are not all inclusive:

Engine Room Number One (4-174-0-E)	Main Deck, Frame 115
Auxiliary Machinery Room No. One (5-67-0-E)	Test Lab (2-174-6-Q)
JP-5 Pump Room (5-132-0-E)	Weather Deck 02 Level, Frames 218-227, Port
Pilot House (04-130-0-C)	Service Tank (4-220-1-F)
Generator Room (3-370-0-E)	Passage (1-42-01-L)

Where several locations are involved, each will be listed in a separate subparagraph. Care must be exercised in the description of the Location of Work, as this, too, is a critical part of the contract, which frequently is the only basis for determining the applicability of the work requirements. The phrase "Throughout the Ship" must be used to avoid inadvertent omissions for work requirements that are in fact widely dispersed. This phrase, however, must not be used when a concise and explicit location can be readily identified. The security classification of the spaces must only be listed in subparagraph 1.4. If this paragraph is not utilized, indicate such by inserting the words "Not Applicable" after subparagraph 1.2.1. Examples are as follows:

Throughout the Ship
Not Applicable

7-2.2.3 Subparagraph 1.3 - The word "Identification" followed by a colon must appear first.

7-2.2.3.1 Subparagraph 1.3.1 - Describe existing equipment to be worked on, to be permanently removed, or to be removed and replaced. Equipment is defined as, "all non-expendable items needed to outfit/equip an individual or organization, i.e., a ship" (see latest revision of Office of the Chairman of the Joint Chiefs of Staff, “DOD Dictionary of Military and Associated Terms”). If existing equipment can be identified by manufacturer, model, serial number, part number from reference listed in paragraph 2, APL number, or equipment designation, i.e., AN/SPS-10E, and serial number, then it must be listed. If existing equipment to be identified does not lend itself to number identification then describe the item to be worked or replaced, e.g., Lifeline Stanchions, etc. Insert the word "Quantity" followed by the appropriate number and 2-letter abbreviation of unit of issue (see “UNIT OF ISSUE” table.) in parentheses preceding the equipment or item identification, i.e., Quantity (10 EA), Quantity (25 FT) or Quantity (25 SF), etc. If this paragraph is not utilized, indicate such by inserting the words "Not Applicable" after subparagraph 1.3.1. Examples are as follows but are not all inclusive:

- Quantity (One EA), Liner, IC/E46-6, Part No. 50857-501
- Quantity (One EA), Propeller, Right-Hand, MFR: Bird-Johnson Co., APL 834010072
- Quantity (One EA), Number One Centralized Cooling Pump, Type DH6080D, RPM 1800, MFR: Buffalo Pumps Inc., APL 016151120
- Quantity (One EA), Bolted Plate Manhole Cover, (3-368-4), 15 Inch by 23 Inch, Flush Deck Oil Tight, Item No. 0015 of 2.2, Including Cover Plate Ring and Angle Ring
- Quantity (2 EA), Zinc Anode, Type ZHC-23, 6 Inch by 12 Inch by 1.25 Inches Thick
- Quantity (One EA), 5 Inch Gear Operated Butterfly Valve, Valve No. SW-V-355B
- Quantity (One EA), Ships Service Switchboard Number One, 1S-2S Bus Tie Breaker, ACB-400HR, MFR: SPD Technologies Inc.
- Quantity (4 EA), Bulkhead Seal, Type ND, Part No. US71243, MFR: Wartsila Lips Inc., APL: 831000375

UNIT OF ISSUE

EA: EACH	BX: BOX	FT: FEET	LF: LINEAR FEET
PC: PIECE	KT: KIT	SF: SQUARE FEET	

7-2.2.4 Subparagraph 1.4 - Must be used only when access to classified spaces, equipment, or documents is required. The security classification (e.g., SECRET, CONFIDENTIAL, etc.) of the space, equipment, or document must be shown parenthetically in upper case letters, following its unclassified title. For spaces, appropriate deck and frame designations must also be used. For example:

NOTE: All entries for this paragraph are to be listed. Attachments are not allowed.

1.4.1 Spaces:

1.4.1.1 Sonar Control Room (01-140-O-C) (CONFIDENTIAL)

1.4.1.2 CIC (01-158-0-C) (CONFIDENTIAL)

1.4.2 Equipment:

1.4.2.1 XXX (CONFIDENTIAL)

1.4.3 Documents:

1.4.3.1 XXX (CONFIDENTIAL)

7-2.3 Paragraph 2 must be REFERENCES.

7-2.3.1 The indiscriminate use of references in Work Items serves only to confuse the users, makes the actual work requirements vague, and does not promote the concept of providing clear and contractually sound Work Items. Conversely, the omission of required reference data does not promote this concept either. Therefore, references must be used when required, but they must always be thoroughly researched and then used selectively. Ideally, what is desired is a Work Item which includes no textual references and which contains all necessary data; a Work Item that stands alone.

7-2.3.2 The General Specifications for Overhaul of Surface Ships (GSO) is a primary source for technical requirements for alterations and for the refurbishment and repair of existing ship's equipment and components; therefore, it must be considered when preparing Work Items.

7-2.3.3 The following general rules apply for references:

7-2.3.3.1 List applicable references in paragraph 2 REFERENCES in the order in which they appear in the body of the Work Item, with the exception of ***NAVSEA*** Standard Items which when listed in the body (e.g., of paragraph 3 REQUIRMENTS, paragraph 4 NOTES, attachments, or tables), must always be 2.1. Do not list references that are not referred to in the body of the Work Item.

7-2.3.3.2 When Standard Items are listed as 2.1 the Fiscal Year must be included. (Standard Items (FY19) |

7-2.3.3.3 In the event that there are no references, the word "None." is to follow 2.1.

7-2.3.3.4 Reference Titles within Work Items must:

7-2.3.3.4.1 Appear as they appear on the reference document (i.e. Drawing Title Block, Technical Manual title). With the exception of the following examples, follow this format.

7-2.3.3.4.2 Capitalize the first letter of each word in a title with the exception of articles and short prepositions.

7-2.3.3.4.3 Note the revision designation (letter and/or number) of each reference. If the reference is the first issuance, do not use Rev Ø, Rev –

or Rev __ to indicate this. If the change does not exist, do not use Rev Ø, Rev – or Rev __ to indicate this.

7-2.3.3.4.4 Examples include:

2.1 NAVSEA Standard Items (FY19)

2.2 MIL-STD-2003A, Electric Plant Installation Standard Methods for Surface Ships and Submarines

2.3 S9086-RK-STM-010/ CH-505 Rev 5, Piping Systems

2.4 SL460-AA-HBK-010 Rev 1, Handbook for Inspection, Packaging, Handling, Storage, and Transportation

2.5 S9169-AE-SSM-010 Rev 3, LPD 17 Class Equipment Manual for Advanced Enclosed Mast/Sensor (AEM/S Mast)

2.6 807-5037131 Rev C, Antenna Group OE-373A/SPS-48E Outline and Installation Drawing

2.7 Force Revision, 3-20

2.8 List of Effective Pages, UIC: V20134 Work Center: EM01 Date: 04/23/20

2.9 Maintenance Index Page, MIP Control Number: 2411/016-C9 Transmission and Propulsor Systems (LCS 5 Class and follow)

2.10 Maintenance Requirement Card, MRC Control Number: 49 J3KR N (Visually Inspect Main Propulsion Shaft Flexible Couplings)

7-2.3.3.4.5 ***Drawings and*** Technical Manuals must be identified by group number, drawing number, latest revision and change letter (A, B, C, etc.) ***as listed within the hull specific Ship's Drawing Index (SDI) or equipment specific Model Based Product Support (MBPS) information. The latest revision of a drawing or technical manual must be used. For example:***

252-5351151 Rev L, Propulsion Control System, Circuit K-GT, Cabling Diagram

S9585-AH-OMI-010 Rev 2, Sliding Padeye Receiving Units, Deck Mounted Models D-9 and D-12, and Tilting Models T-12 and T-12A

S9625-AU-MMA-010 Change C, Electrically Heated Deicing Window

7-2.3.3.5 References must be limited to applicable technical data such as ***NAVSEA*** Standard Items, drawings, equipment technical manuals, Military Standards (MIL-STDs), Test Memos, and NAVSEA approved Preservation Process Instructions (PPIs). Technical data means recorded information (regardless of the form or method of the 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.

7-2.3.3.5.1 Titles for all references must be as they appear on the reference with the exception of capitalization and words such as "Naval Ships Technical Manual". Capitalize the first letter of each word, with the exception of minor words or conjunctions (the, of, etc.). For example:

NAVMED P-5010-6, Manual of Naval Preventive Medicine, Chapter 6, Water Supply Afloat

S9086-T8-STM-010/CH-593 Rev 7, Pollution Control

7-2.3.3.5.2 In the event a requirement has been deleted after a Work Item has been developed, the planner must use the following format:

2._ Intentionally Left Blank

7-2.3.3.5.3 Reference format for 4720 Material Summaries must be as the File No. and title appears on the 4720 cover sheet. Reference format for Design Memos, Planning Memos, and Test Procedures, Liaison Action Records (LARs), Reverse Liaison Action Records (RLARs) must be as follows:

DM 10-09, MARMC, Title

DM 97-07 Rev C, SWRMC, Title

PM 390-51, SERMC, Title

PM 230-01 Rev B, SPAS, Title

24310-7-020, Title of Test Procedure/Test

24510-5-001 Rev B, Title of Test Procedure/Test

LAR 73622/DDG57/1132310; Requirement for Protective Cages around Sensors

RLAR 73622/DDG97/1151906; Material and Design Corrections for Protective Covers

7-2.3.3.5.4 For references available on compact disk, insert the source CD volume number in parentheses after the title. For example:

SE000-01-IMB-010, Navy Installation and Maintenance Book (NIMB), Section VI, Electronics Installation and Maintenance Book - General Maintenance (Source CD: N0002400003)

7-2.3.3.5.5 For references that are proprietary and must be used to write a work item, however, cannot be distributed to the execution contractor

due to copyright laws, the reference must identify (Proprietary) at the end of said reference. The contractor will need to obtain the information on their own.

100-7026706 Rev __, Unit Structural Arr Dwg Assy Unit 3420 (PROPRIETARY)

7-2.3.3.6 Instructions, Notices, Naval Messages, and letters with financial, administrative, management data or other information incidental to contract administration must not be included as references.

7-2.3.3.7 Documents such as federal regulations outside the Department of Defense and public laws must not be referenced except where it is necessary to show the contractor that there are public laws and regulations with which he must comply but are outside the scope of the MSR agreement and the requirements of that particular Work Item.

7-2.3.3.8 When using Naval Ship's Technical Manuals (NSTM) and GSO as references, ensure that only applicable portions are referenced. For example:

Example 1:
2.***2*** S9AA0-AB-GOS-10, General Specifications for Overhaul of Surface Ships (GSO)

3.***4*** Remove existing and install new flanged take down joint assembly in accordance with Section 506d of 2.***2***.

Example 2:
2.3 S9086-T8-STM-010/CH-593 Rev 7, Pollution Control

3.8 Accomplish sanitary and hygienic procedures of Paragraph 593-4.2.3 through 593-4.2.4.1.3 of 2.***3.***

7-2.3.3.9 Appropriate Program Office approved 4720/3 Material Identification Documents for ShipAlts, AERs, or repair kits may be listed in paragraph 2 as a reference. The reference must be used to identify the GFM for the identified ShipAlt, AER, or repair process in paragraph 5 of the Work Item. (See Section 7-2.3.3.5.3.)

7-2.3.3.10 A "zero-tier reference" is a specification, standard, drawing that is cited in the contract (including its attachments). A "first-tier reference" is either:

(1) a specification, standard, or drawing cited in a zero-tier reference, or (2) a specification cited in a first tier drawing. All zero-tier and first tier references are mandatory for use. All lower tier references must be used for guidance only.

7-2.3.4 If short enough (single page or less), the reference documentation must be lifted out or paraphrased and written in the body of the Work Item, both for clarity of the requirements and for building a Work Item that can stand alone.

7-2.3.5 In considering data for use as a reference, data must be thoroughly researched to determine that:

7-2.3.5.1 It will not begin a chain of unnecessary references.

7-2.3.5.2 If restricted for use, written authorization is obtained prior to using proprietary clauses.

7-2.3.5.3 It is the latest version or revision of the subject data.

7-2.3.5.4 It is available in reproducible form for distribution.

7-2.3.5.5 It is absolutely essential to accomplish the required work.

7-2.3.6 The security classification of a classified reference must be shown parenthetically in upper case letters, following its unclassified title.

7-2.3.7 The method for using ***N***SIs and LSIs as references is to list in paragraph 2 REFERENCES, as follows:

7-2.3.7.1 ***N***SIs or LSIs, regardless of the number that are used as references in a particular Work Item, are listed as " ***NAVSEA*** Standard Items" in paragraph 2.1, and specifying the particular ***N***SI or LSI number in paragraph 3 REQUIREMENTS or paragraph 4 NOTES.

7-2.3.8 MIL-SPECs are not listed in paragraph 2 as references. They must be included in the REQUIREMENTS paragraph of the Work Item.

7-2.3.9 Care must be exercised when invoking references. Three degrees of contractor compliance may be required and enforced depending on the invoking statement:

7-2.3.9.1 When it is desired to direct a contractor to accomplish work strictly in accordance with the reference, the invoking phraseology must be:

7-2.3.9.1.1 "___ in accordance with 2._", or

7-2.3.9.1.2 “Accomplish the requirements of 2._", or

7-2.3.9.1.3 "___ conforming to 2._".

7-2.3.10 When the reference data is only partially applicable, the invoking phraseology must be: "_ in accordance with 2._", and then list the exceptions in a subparagraph.

7-2.3.11 When strict compliance is not required and the reference is only listed for information and guidance, the invoking phraseology must be: "_, using 2._ for guidance". However, it can become a catch-all and its use must be held to a minimum.

7-2.3.12 When a Work Item references Class and Hull specific configuration and Ship Alteration information, planning activity must validate that reference information (Ship Alteration drawings, LARS, "as built drawings", Test Procedures, etc.) used is correct via the assigned Class Planning Yard.

7-2.3.13 SUPSHIP/RMC/SURFMEPP References. When material to be used as a reference is too complex or lengthy to be lifted out and included in the body of the Work Item and the documentation is not appropriate to use directly as a reference, then the material must be lifted out and rephrased as needed to be used as a SUPSHIP/RMC/SURFMEPP Reference.

7-2.3.13.1 SUPSHIP/RMC/SURFMEPP References must be issued with a cover sheet attached to the reference documentation showing SUPSHIP (City)/RMC/SURFMEPP Reference _, Rev _, and date issued.

7-2.3.13.2 The originating SUPSHIP/RMC/SURFMEPP must be responsible for maintaining a master file of SUPSHIP/RMC/SURFMEPP References and revised

versions. Revisions to SUPSHIP/RMC/SURFMEPP References must be identified as Rev A, Rev B, etc.

7-2.3.13.3 The use of SUPSHIP/RMC/SURFMEPP References must be limited to those cases where no other recourse exists to adequately specify work requirements in a Work Item. The modified versions of these appendices would be identified as SUPSHIP/RMC/SURFMEPP References. Likewise, certain portions of NSTMs would be identified for use in a Work Item as a SUPSHIP/RMC/SURFMEPP References.

7-2.3.14 Planned Maintenance System (PMS) documents may be used as references in Work Items when required, including but not limited to, LCS and DDG 1000 Class Ships supporting the accomplishment of preventive maintenance availabilities.

7-2.3.15 Selected Record Drawings (SRDs) identified within the applicable Ships Drawing Index (SDI) must be considered for use as references within a Work Item. SRDs have the advantage of being regularly reviewed and updating by the assigned Ship Class Planning Yard. SRDs are therefore generally more reflective of a ship's current configuration.

Non-SRDs and Installation DWGs can be used, but must be thoroughly ship checked to ensure adequacy.

7-2.4 Paragraph 3 must be REQUIREMENTS. The REQUIREMENTS paragraph of the Work Item is that portion which must detail the minimum work and material requirements not already invoked by ***NAVSEA*** Standard Items. Quality assurance requirements are also inserted in this section. Any additional specific tests and reports required must be delineated. Care must be taken to document requirements only once. Work Item clarity is not improved if ***NAVSEA*** Standard Item requirements are restated in paragraph 3, in fact this practice can insert confusion concerning sequencing and inspection of work as well as estimating.

7-2.4.1 Category II ***N***SIs must be invoked to the maximum extent possible when preparing Work Items and Templates.

7-2.4.2 The ***NAVSEA*** Standard Phraseology of Annex B must be used in preparing Work Item requirements (see Section 4-6).

7-2.4.3 When abbreviations and acronyms are used, the complete phrase must be written out the first time it is used in a Work Item, followed by the abbreviation or acronym in parentheses. After that, the abbreviation or acronym may be used throughout the Work Item. Abbreviations or acronyms commonly used in the naval ship repair industry need not be defined.

7-2.4.4 Paragraph 3.1 must include phraseology that begins with a verb and refers to paragraphs 1.2 and 1.3. (e.g., 3.1 Remove existing and install new the equipment listed in 1.3 and located in 1.2, using 2.2 for guidance). ***If current NAVSEA Standard Phraseology does***

not allow for this requirement to be met, do not modify the NAVSEA Standard Phraseology in accordance with the 4E, ANNEX B.

7-2.4.4.1 No more than 3 levels of subparagraphs are allowed in specifications; for example, 3 levels of indentation are represented by subparagraph, 3.X.X.X." Paragraphs at the 3.X level must be verb, noun format, subparagraph levels 3.X.X., and 3.X.X.X, are not required to be verb, noun format.

7-2.4.5 In paragraph 3, once you have identified the location and equipment listed in 1.2 and 1.3, it is not necessary to repeat that identification throughout the requirements, unless different actions are being accomplished.

7-2.4.6 Paragraph 3.1 of the REQUIREMENTS will be used to require the contractor to remove and install interferences for only those systems listed in 3.1 of Category I ***NAVSEA*** Standard Item 009-023.

7-2.4.7 Repair and overhaul of equipment and systems, as authorized by TYCOM, must be implemented in the REQUIREMENTS paragraph by a description of the work to be accomplished. The written sequence of work requirements must normally be in chronological sequence of work accomplishment. Each subparagraph must express a complete thought in clear, concise language that is contractually sound. Wording that is ambiguous must not be used. Accept or reject criterion for use by Quality Assurance inspectors must be definitive.

7-2.4.8 For complex Work Items that would be cumbersome and cause confusion if normal chronological work sequence were employed, an alternative trade or component breakdown method may be employed. This method addresses each trade or component's work requirements separately, either in consecutive subparagraphs of the REQUIREMENTS or in several consecutively numbered Work Items. When this method is used, the normal time sequence of work within the trade or component is maintained.

7-2.4.9 Contractor furnished repair parts to be replaced must be listed, including the quantity required, 2-letter abbreviation of unit of issue (e.g. EA, PC, BX, KT, etc.), the manufacturer's part number or plan number and piece number as listed in the equipment technical manual or plan. GFM must be listed in paragraph 5. Contractor furnished raw materials (e.g. plate, beams, bars, piping, casting components, etc.) and common shelf items (e.g. fasteners, gaskets, cotter pins, O-Rings, seals, etc.) must be identified by noun name in paragraph 3 of the Work Item without further identification as to manufacturer's part number or piece number.

7-2.4.10 In the event a requirement has been deleted after a Work Item has been developed, the planner must use the following format:

3.__ Intentionally Left Blank

7-2.4.11 After a Work Item is issued, any changes implemented in the Work Item resulting from a Request for Contract Change (RCC), Condition Report (CR), Inspection Report (IR), etc., must be prepared in accordance with Section 7.

7-2.4.11.1 When writing an RCC a brief summary documenting why growth (positive or negative) must be added to the Work Specification paragraph 4 (Notes), as required by JFMM Vol VI Chp 41 and Vol VII Chp 7.

7-2.4.12 Inspections and tests that are not already required by ***NAVSEA*** Standard Items must be identified by (I) (Q) or (V) symbols inserted in a Work Item to establish a point in the sequence of accomplishment of work, at which time the repair activity must inspect/verify and document the inspection or test. Inspections and tests requiring Government notification must be identified by (G) symbols inserted in a Work Item to establish a point in the sequence of accomplishment of work at which time the SUPERVISOR must be notified to permit observation of the specific inspection or test. The (I) (Q) and (V) inspections and (G) notifications are included in the requirements paragraph of the Work Item by inserting the appropriate symbol(s) in parentheses, e.g., (I), followed by the specific inspection/test within quotation marks, e.g., "HYDROSTATIC TEST", in upper case letters at the left margin immediately preceding the paragraph with the inspection/test. For example:

(I) (G) “HYDROSTATIC TEST"

7-2.4.13 When the inspection requirements [(I) (Q) and (V)] or notifications [(G)] are identified in the ***NAVSEA*** Standard Item, they must not be identified again in the Work Item.

7-2.4.13.1 Symbols are defined as:

(I) inspections require verification and documentation by a separate individual, other than the person who has accomplished the work, who is qualified as an inspector and currently certified where required by the technical documents (e.g., NBPI, NACE, nondestructive testing, electrical cableway inspections, etc.).

(V) inspections require verification by either the qualified tradesperson, trade supervisor, or inspector.

(Q) ***inspections require verification and documentation by a qualified government representative.***

(G) is a symbol inserted in a Work Item to establish a point in the sequence of accomplishment of work at which time the SUPERVISOR must be notified to permit observation of a specific inspection or test by the Government.

7-2.4.13.2 In order to invoke inspections and tests requiring annotation with (I), (V), or (G) symbols, the following criteria must be met:

NOTE: SUBSTITUTE (Q) FOR EITHER AN (I) OR (V) WHEN APPLICABLE.

Manufacture, installation, and repair (welding, brazing, machining, or lapping) of Level I fittings or components	Inspections performed for all acceptance testing (e.g., hydrostatic testing, drop tests, seat leakage tests, joint tightness tests) used for certification of work completed	(I)(G)
	Inspections performed to verify final torque of pressure boundary parts and fasteners used in Level I components	(I)
	Inspections performed to verify permanent Level I markings at installation/assembly	(I)(G)
	Inspections performed for post-machining/manufacture of any Level I part/component	(I)
	Inspections for ball valve stack heights, valve blue checks, and inspections performed on any sealing surface when work is performed using controlled assembly	(I)
	Inspections performed to verify Level I pressure boundary parts replacement	(I)(G)
	Mechanical measurements used to verify wall thickness of Level I components	(I)
	Cleanliness inspections when required by MIL-STD-1330 (oxygen, nitrogen, and hydrogen systems)	(I)(G)
	Receipt inspection of Level I material	(I)
	Nondestructive Testing VT	(I)
	Nondestructive Testing MT/PT/UT (Final Only)	(I)(G)
	RT Film Interpretation	(I)(G)
Welding/brazing of P-1, P-LT, P-3a piping systems or Class A-F, A-1, A-2, A-3, A-LT, M-1, T-1 welding, and P-2 steam service	Inspections performed for all acceptance testing (e.g. hydrostatic testing, drop tests, seat leakage tests, joint tightness tests) used for certification of work completed	(I)(G)
	Mechanical measurements used to	(I)

	verify wall thickness of Level I components	
	Cleanliness inspections when required by MIL-STD-1330 (oxygen, nitrogen, and hydrogen systems)	(I)(G)
	Fit-up inspection of Class P-3a joints on steam piping	(I)
	Nondestructive Testing VT	(I)
	Nondestructive Testing MT/PT/UT (Final Only)	(I)(G)
	RT Film Interpretation	(I)(G)
Welding on ship/craft listed in Attachment A of ***N***SI 009-012 hull or structure when required by the fabrication document	Inspections performed for all acceptance testing (e.g., hydrostatic testing, drop tests, structural boundary tests) used for certification of work completed	(I)(G)
	Nondestructive Testing VT	(I)
	Nondestructive Testing MT/PT/UT (Final Only)	(I)(G)
	RT Film Interpretation	(I)(G)
Weight handling equipment manufacture and repair:	Inspections performed for all acceptance testing (e.g., static load testing, drop tests, pull tests, weight tests) used for certification of work completed	(I)(G)
	Nondestructive Testing VT	(I)
	Nondestructive Testing MT/PT (Final Only)	(I)(G)
	Nondestructive Testing UT (Final Only)	(I)(G)
	RT Film Interpretation	(I)(G)
Corrective maintenance within the certified boundaries of cranes (as defined in NSTM 589)	Inspections performed for all acceptance testing (e.g., static load testing, drop tests, pull tests, weight tests) used for certification of work completed	(I)(G)
	Nondestructive Testing VT	(I)
	Nondestructive Testing MT/PT	(I)(G)
	Nondestructive Testing UT (Final Only)	(I)(G)
	RT Film Interpretation	(I)(G)
	Weight testing to certify or recertify shipboard cranes	(I)(G)

	when repairs are performed	
Maintenance on aircraft launch and recovery equipment:	Inspections performed for all acceptance testing (e.g., hydrostatic testing, drop tests, seat leakage tests, joint tightness tests) used for certification of work completed	(I)(G)
	Nondestructive Testing VT	(I)
	Nondestructive Testing MT/PT/UT (Final Only)	(I)(G)
	RT Film Interpretation	(I)(G)
Preservation of critical surfaces	Surface preparation, conductivity/chloride tests, and film thickness inspections (including profile, holiday, and stripe coat inspections) of surfaces identified in ***NAVSEA*** Standard Item 009-032	(I)(G)
	Environmental readings	(V)
Preservation of non-critical surfaces	Surface preparation and film thickness inspections (including profile, holiday, and stripe coat inspections) of surfaces not identified as critical in ***NAVSEA*** Standard Item 009-032	(I)
	Environmental readings	(V)
Final testing, final alignment, process control, and work acceptance of mechanical, electrical, and structural work not covered above, and major safety related inspections:	Any final test that is used as the verification that all work has been performed satisfactorily (e.g., final hydrostatic tests and final operational test). This does not include final assembly or dimensional verifications	(V)(G)
	All final alignments	(I)(G)
	Any final work acceptance inspections of compartments and tanks (e.g., tank closures and compartment turnovers)	(V)(G)
	Visual inspection of the installed waterproof membrane	(I)(G)
	Safety inspections prior to entry into tanks, voids, and cofferdams which contain Motor Gasoline (MOGAS) or other immediately dangerous to life or	(I)(G)

	health (IDLH) atmospheres	
Other inspections or tests	Any inspection/test that is not covered above and reports are not required to be submitted to the Government	(V)
(Q) ***inspections require verification and documentation by a qualified government representative:***	Witness pre repair operational tests, adjustments, and inspections to determine equipment condition, when required by the Work Item	(Q)
	Inspect equipment and component parts during disassembly, to include process material and process performance.	(Q)
	Verify process documents whereas found reports are required, to include clearances and conditions.	(Q)
	Inspect new and repaired areas and component parts of the equipment prior to assembly to ensure compliance with Navy technical manual requirements and ***NAVSEA*** Standard Items.	(Q)
	Inspect and provide technical guidance and assistance during process performance, equipment assembly and adjustment, and when specified, coating application. Verify assembly procedures, sizes, and clearances comply with manufacturer's requirements, Navy technical manual requirements, and coating application procedures when specified.	(Q)
	Witness operational tests, make adjustments, and document test and process performance results, including, when required, final inspections of coating systems	(Q)

7-2.4.13.3 When modifications are written to the original Work Items, (I), (V), and (Q) inspections and (G) notifications must be inserted where required.

7-2.4.13.4 Where additional Government oversight is deemed necessary by the SUPERVISOR to ensure contract compliance in a specific problem area, a (G) may be

added to an inspection or test currently not requiring Government notification in the criteria identified above.

7-2.4.13.5 Never use (G) alone; must be preceded by an (I), (V), or (Q).

7-2.4.14 Reports - Written reports are necessary in order to record results of inspections, tests, and work accomplished. The planner must keep in mind that reports are costly to generate and to process. Reports must only be required in Work Items when necessary. Do's and don'ts for reports are as follows:

7-2.4.14.1 Do require a report for machinery history with condition identified readings.

7-2.4.14.2 Do require a report when a unique piece of equipment has had many problems.

7-2.4.14.3 Do require a report listing unsatisfactory conditions.

7-2.4.14.4 Do require machinery closing reports if not recorded on test memos or data sheets.

7-2.4.14.5 Don't require a report to track contractor progress on a job.

7-2.4.14.6 Don't require a report following a test and/or inspection (except where recorded test data is necessary).

7-2.4.14.7 Don't require a report for each piece of equipment. Have the contractor submit a report in matrix format when criteria are the same for each item. (Example: Five motors being overhauled in accordance with ***NAVSEA*** Standard Item 009-017.)

7-2.4.14.8 Don't require a report just so you will know the item is being worked.

7-2.4.15 Process Control Procedure (PCP) requirements not already required by ***NAVSEA*** Standard Items must also appear in the REQUIREMENTS paragraph. Invoking the requirement to develop Process Control Procedures must be invoked only where contractual compliance of the product cannot be ensured by inspections and tests. Reference must be made to applicable standards or specifications that govern the process to be controlled. Any requirements that must be addressed by the procedure must be explicitly identified in NSI 009-009 requirements. The following additional requirement applies for PCPs:

7-2.4.15.1 PCPs must be written for all non-nuclear surface ship systems and equipment listed in the most current version of CNRMC Instruction 4700.5_ Series (Guidance and Policy for Surface Ship Critical Systems and other Work Requiring Process Control Procedures (PCP) or Government Approved Technical Procedures (ATP).

7-2.4.16 It is assumed that MSR Agreement Contractors responding to a solicitation do have the necessary competence to ensure satisfactory completion of the work requirements of the specification. Sole source requirements (technical representatives, vendors, directed subcontractors, etc.) must not be invoked in any Work Item without sufficient justification to permit a Justification and Approval (J&A).

7-2.4.17 Appropriate Front Loads and Level of Effort (LOE) Growth Reservations provide a means to accomplish repairs, which could not be clearly defined in advance of the ship's availability. Front Loads and Level of Effort (LOE) Growth Reservations are to be based upon historical analysis, published by CNRMC and SEA02. Use of Front Loads and Level of Effort (LOE) Growth Reservations can reduce the need to draft and negotiate Requests for Contract Changes (RCCs).

NOTE: Planning Activity should validate with Project Manager if the Level of Effort to Completion (LOE2C) CLIN will be utilized in the Ship Repair and Modernization Contract being worked on. If LOE2C CLIN is being used adding Level of Effort (LOE) Growth Reservations within Work Items must be controlled. Planners should ask for guidance before adding LOE paragraphs within Work Items.

7-2.5 Paragraph 4 of the Work Item must always be NOTES and must contain information or explanations that do not lend themselves to inclusion in the REQUIREMENTS. These notes must not place requirements on the contractor and will not establish production work linkages of one Work Item to another within a Work Package (e.g. "Work in conjunction with __.").

7-2.5.1 When writing an RCC a brief summary documenting why growth (positive or negative) must be added to the Work Specification paragraph 4 (Notes), as required by JFMM Vol VI CH 41 and Vol VII CH 7.

SAMPLE NOTES

4.1 This is an LOA item.

RCC 19G written to add BERP plate for ShipAlt DDG -51-96250.

RCC 56NG written to add motor rewind.

RCC 86G to add a butterfly valve.

RCC 13G to descope butterfly valve.

7-2.6 Paragraph 5 must be GOVERNMENT FURNISHED MATERIAL (GFM). All GFM listed in paragraph 5 must be installed by the requirements invoked in paragraph 3.

7-2.6.1 Major components or equipment with anticipated delivery dates after the commencement of the availability must be specified in the Work Items. This includes turnaround items in the Navy Refurbishment Program. Following each line item of GFM, indicate the paragraph number in which the material is required.

7-2.6.2 Material must be made GFM when:

7-2.6.2.1 It is considered likely the contractor will have difficulty in procuring from normal sources in a timely manner (e.g., it cannot be procured and received by the contractor during the period from planned award to planned overhaul start).

7-2.6.2.2 It is not normally available outside of the Navy Supply System. If necessary GFM is not available in the NSS, alternate plans of action will have to be devised.

7-2.6.2.3 It is Program material reserved for accomplishment of NAVSEA ShipAlts (Fleet Modernization Material).

7-2.6.2.4 It is mandatory replacement material stocked by the Navy to support designated ship Class Maintenance Plan.

7-2.6.2.5 It is ***particular*** to the Navy.

7-2.6.2.6 Repair or Alteration Material and Special Tools already in the possession of and controlled by a Government entity (e.g. Ship's Force, TYCOM, NSWC etc.) which will be turned over to a Maintenance Team.

7-2.6.3 Categories of GFM listed in paragraph 5 are defined as follows:

7-2.6.3.1 LLTM: ***Material whose delivery date after receipt of order (ARO) exceeds 30 days or is deemed critical to the success of the availability by the Maintenance Team Project Manager regardless of the lead-time.***

7-2.6.3.2 PUSH: Repair or Alteration Material and Special Tools provided to a Ship's Maintenance Availability by a government entity (e.g. Ship's Force, TYCOM, NSWCs, NAVSUP WSS, NAVSEA) without any purchasing action required on the part of the Planning Activity or RMC Logistics Department.

7-2.6.3.3 KITTED: Alteration Material procured and assembled into a kit through a separate Government contract and provided to a Ship's Maintenance Availability by an outside activity (i.e. Program Office Class Planning Yard or PARM). Planning Activities may utilize the associated Program Office approved 4720/3 (Ship Alteration Material Summary) as a Work Item Reference for ShipAlt or AER kits.

Examples for each of the above categories:

TOTAL QUANTITY PROVIDED	NAME OF PART	PIECE NO.	REF. NO.	NATIONAL STOCK NO.	PARA NO.
5.1.1 1 EA	Valve		2.__	3.__	
5.2.1 1 EA	Pump		2.__	3.__	
5.3.1 1 KT	Kit for _____		2.__	3.__	

7-3 Numbering Work Items

7-3.1 For surface ships utilizing S9040-AC-IDX-010, Expanded Ship Work Breakdown Structure (ESWBS) for All Ships & Ship/Combat Systems, the Work Item number must contain 8 digits. The first 5 digits must be assigned using the appropriate ESWBS number.

NOTE: In the case of alterations, the 4th and 5th digit must be as follows:

80 for title D ALTS and AERs
90 for title K ALTS
00 for ORDALTS

The 6th, 7th, and 8th digits must be for industrial control serialization, from 000 through 999. For example:

7-3.1.1 A repair Work Item on propulsion boilers for a ship with 2 propulsion shafts must be numbered 221-1X-XXX, where the first X is a 1 or 2 and the XXX is the industrial control serialization number.

7-3.1.2 A similar Work Item as 7-3.1.1 above, but accomplished on a D alteration, must be numbered 221-80-XXX.

7-3.1.3 A similar Work Item as 7-3.1.1 and 7-3.1.2 above that is divided into many work oriented items must be numbered 221-XX-XXX, e.g., the 12th Work Item written on a propulsion boiler D alteration must be numbered 221-80-012.

7-3.2 ***N***SI numbers must be assigned sequentially in the 009-XXX series, such as 009-001, 009-009, 009-038. Local Standard Item numbers must also be sequentially numbered, but in series 099-XXX followed by the individual RMC designator letter, i.e. 099-XXSE, for a SERMC LSI.

7-4 Development Use of Templates (MSWT/CSWT/SWT/LWT/BWST)

SECTION 7

DOCUMENT PREPARATION AND UTILIZATION *INSTRUCTIONS*

7-4.1 When the use of an MSWT is directed it must be employed verbatim to ensure full completion of Class Maintenance Plan (CMP) Mandatory Technical Requirements (MTRs), except as exempted in Paragraph 2 below. Whenever an applicable CSWT is available, it must be used except as exempted in Paragraph 2 below. In the absence of a CSWT, an applicable SWT must be used except as exempted in Paragraph 2 below. LWTs must not be used for coast wide solicitations. If a MSC Template does not exist for the Expanded Ship Work Breakdown Structure (ESWBS) being addressed by a tasked WN, previously executed Work Items for the same or similar work may be reviewed as a starting point. Once identified, the applicable portions of that Work Item must be transferred to a BWST. The planner will make intentional selections thoroughly reviewing the copied information, ensuring it conforms to required technical (NSI) and contractual (4E) standards. ***BWST's will be reviewed and approved/disapproved by the Local Standards Coordinator for submittal to the MSC.***

7-4.2 Deviations from templates must not be permitted except in the following cases:

NOTE: THE ADDITION OF INSPECTIONS OR TESTS (CHECKPOINTS) TO MASTER SPECIFICATION CATALOG TEMPLATES (E.G., MSWT, CSWT, SWT) THAT WILL GLOBALLY AFFECT THE TEMPLATES ARE NOT AUTHORIZED WITHOUT WRITTEN APPROVAL FROM THE SSRAC DIRECTOR. THESE CHANGES MUST BE SUBMITTED IN ACCORDANCE WITH THE MSC PROCESS FOR FINAL ADJUDICATION AND IMPLEMENTATION INTO FUTURE TEMPLATES.

7-4.2.1 Paragraphs in MSWTs that address Mandatory Technical Requirement(s) must not be edited beyond filling in the applicable blank spaces, nor must "Intentionally Left Blank" be used in place of reference(s) or requirement(s) as shown in Section 7-2. MSWTs do provide limited discretion for the editing of non-MTR paragraphs by adding or deleting REQUIREMENTS paragraphs to suit the authorized work.

7-4.2.2 Work Items derived from a CSWT or SWT may be edited by adding or deleting entire REQUIREMENTS paragraphs to suit the authorized work.

7-4.2.3 Work Items derived from a MSWT, CSWT or SWT must be completed by filling in appropriate blanks with data to suit the technical requirements and the authorized work.

7-4.2.4 When designated as non-deviational and mandatory, or mandatory, the template must be used as specified in Section 2.

7-4.3 The following procedure must be utilized in choosing a template:

7-4.3.1 Review the indices for basic subject matter.

7-4.3.2 If available, select the item that most closely approximates the subject work requirements.

7-4.3.3 Review to determine if the subject matter is the same as, or close enough to, the work requirement to allow its use.

7-4.4 The following procedure must be used in converting templates to Work Items:

7-4.4.1 Fill in the heading. File numbers and revision dates of templates must remain in converted Work Items.

7-4.4.2 Fill in the applicable portions of paragraph 1.

7-4.4.3 Verify that the appropriate references are available and current.

7-4.4.4 Review paragraph 2, REFERENCES, and add or delete references as required to suit any changes made in the REQUIREMENTS.

7-4.4.5 Review paragraph 3, REQUIREMENTS, and add or delete requirements and fill in the appropriate blanks with data, using ***NAVSEA*** Standard Phraseology of Annex B, to suit the authorized work.

7-4.4.6 Review paragraph 4, NOTES, and add or delete subparagraphs as appropriate.

7-4.4.7 Review paragraph 5, GOVERNMENT FURNISHED MATERIAL (GFM), and add or delete GFM to suit the authorized work.

NOTE: WHEN CONVERTING A TEMPLATE TO A WORK ITEM, NO ADDITIONAL INSPECTIONS OR TESTS (CHECKPOINTS) WILL BE ADDED THAT ARE NOT IN COMPLIANCE WITH 4E.

7-4.5 CSWTs must be written to accomplish class specific repairs and modernization. In the preparation of CSWTs the following guidelines must be used:

7-4.5.1 The CSWT must include work necessary to accomplish approved repairs and/or modernization of the equipment.

7-4.5.2 Technical Repair Standards (TRSs) may be used as a reference by identification of the specific section(s) to be used. The Planner must ensure that the requirements are precise and do not invoke a string of possible additional work based on conditions identified.

7-4.5.3 Calibration, repair, or renewal of gauges and other instrumentation must be required. Generally, instruments costing less than 50 Dollars each must be removed and new instruments installed.

7-4.5.4 When not an interference, replacement with new insulation for disturbed, damaged, or missing insulation must be required.

7-4.5.5 Inspection and painting of the foundations must be required.

7-4.5.6 Preservation of the equipment must be required in accordance with ***NAVSEA*** Standard Item 009-032.

7-4.5.7 Inspection of the alignment of piping to the equipment flanges must be required. Accomplishment of alignment by adjustment of the adjacent hanger is considered within the scope of the work. Refitting of pipe or flange and installation of new hangers must be handled as a contract change and treated as growth within scope for departure report and funding purposes. Note that alignment of steam piping frequently involves cold pull-up to align the system while in operation. Refer to the ship's plan for the cold pull-up data.

7-4.5.8 The CSWT must require disassembly of the equipment to the extent necessary to replace Planned Maintenance Material (listed in Appendix A of the TRS), and inspect sealing surfaces and pressure boundaries. Note that the TRS usually requires total disassembly of the unit. This may be unnecessary and, in fact, risky if shrink fits are involved and there is no indication of unsatisfactory fit or an obvious requirement to replace one of the parts (worn sleeve, cracked rotor, etc.)

7-4.5.9 The CSWT must require a complete inspection of the disassembled unit in accordance with criteria in Appendix C of the TRS.

7-4.5.10 The CSWT must include the operational test of the equipment and must invoke the applicable portion of the approved test procedure, if one exists. The Ship's Force must be given responsibility for specific operational test prerequisites as well as for accomplishment of the operational test if within their capability and no contractor interface is involved. Specific test prerequisites that are the contractor's responsibility because of specific work must be specified in the CSWT.

7-4.5.11 Hydrostatic tests of pump or turbine casings must not be specified unless weld repairs have been accomplished.

7-4.5.12 The CSWT must require visual inspection of the entire pressure boundary and rotating parts, including a liquid penetrant inspection of a specific area (e.g., 200 square inches) and determination of wall thickness of a specific area (e.g., 100 square inches) by ultrasonic inspection. The specific areas must be described as eroded or corroded areas, high stress areas, such as inlet and discharge nozzles and areas in which visual inspection indicates an apparent crack. The TRS may require magnetic particle inspection of ferrous parts.

SECTION 7

DOCUMENT PREPARATION AND UTILIZATION *INSTRUCTIONS*

7-5 General Requirements and Criteria

7-5.1 Attachments must not be used as Work Item references. Attachments cannot establish requirements. Attachments should be used to improve Work Item clarity by identifying equipment or components to which requirements will be applied. Attachments to Master Specification Catalog templates can assist with the performance of ship checks, validation of Configuration Management Data elements which require confirmation prior to use in a Work Item (e.g. location, item identification, valve number, etc.).

7-5.2 When attachments are used, the attachments must be identified, at the top of each page, centered in uppercase letters, by the word ATTACHMENT followed by a letter designation, such as ATTACHMENT A or ATTACHMENT B. Rarely will more than 3 attachments be utilized within any given Work Item. Each attachment will contain the Work Item number on each page and each page must be numbered. The total number of pages in the Attachment must be included in the total number of pages in the Work Item. For example, the footer of a one page attachment used in a 3-page Work Item would read Page 4 of 4.

7-5.3 Planning Memos may be used as Work Item references. As a reference, Planning Memos may establish requirements within Work Items. Planning Memos can be invoked such that a Contractor's compliance can be made to be directive, partially applicable, or informational for guidance only.

7-5.4 Activities developing or managing Planning Memos and Attachments must:

7-5.4.1 Set appropriate standards concerning the sources of authoritative data used as inputs (e.g. CDMD-OA, EOSS, CSOSS, NAVSEA Approved Drawings, etc.).

7-5.4.2 Ensure appropriate Command signature authority completes the final review, approval and signs out of issued document, with signatures recorded on the cover page, and that changes are noted on a revision record included with the document

7-5.4.3 Be responsible for the life-cycle management of documents, ensuring they are periodically reviewed (as a minimum biannually), revised, made available for use within an established data repository, and when appropriate cancelled.

7-5.4.4 Rapidly and consistently incorporate validated lessons learned and best practices.

7-5.4.5 Be responsive to customer questions concerning issued documents.

7-5.4.6 Assign unique identifiers to allow for the recording and life-cycle management of the document (naming rules will as a minimum allow for the recognition of the Planning Activity, the Ship Class or Classes being addressed and the Expanded Ships Work Breakdown Structure (ESWBS) of the system or components being addressed).

7-5.4.7 Document titles should provide clear understanding of the documents envisioned use.

7-5.5 Underscoring is limited to the heading, basic paragraph titles, and headings when listing repair parts or GFM as shown in Section 6.

7-5.6 Sub paragraphing is limited to 4 digits (example 3.1.1.1). Each subparagraph is limited to a single thought or work sequence.

7-5.7 Page numbering must be sequential in each Work Item and total pages indicated (e.g., 1 of 3, 2 of 3) in the lower center of the page. The item number must be indicated in the lower right corner of each page.

7-5.8 File numbers are assigned to templates for SUPSHIP/RMC reference purposes only. These numbers are located in the upper left section of page one. (Section 6 refers)

7-5.9 The revision date of templates must be indicated in the upper left section of page one. (Section 6 refers)

7-5.10 Work Items must be marked using NMD “OVERLAYS” when applicable. (Examples: LEVEL I, CRITICAL SYSTEM, DRYDOCK REQUIRED, COFFERDAM REQUIRED, GAS FREE CERTIFICATION REQUIRED)

7-5.10.1 Overlays must not be used on Work Items supporting work on non-nuclear surface ships, small boats and crafts, with the exception of "MASTER SPECIFICATION" overlays on MSWTs.

7-5.11 The numeral "1" must not be used but always be written as "one" or "One" as applicable. All numbers greater than one must be written as a numeral, i.e., 2, 3, 4, etc., except when the number is at the beginning of a sentence. This rule does not apply to references, or to GFM amount inserted under "TOTAL QUANTITY PROVIDED" listed in Paragraph 5.

7-5.12 Do not establish production work linkages of one Work Item to another within a Work Package. Such linkages can complicate the orderly solicitation, execution and administration of a Ship Repair and Modernization Contract.

7-6 Common Work Item Errors

7-6.1 There is no substitute for good judgment and forethought on the part of the Work Item author. The task of writing definitive work requirements is complicated by the fact that no matter how technically correct the Work Item is, if the wording can be misunderstood or causes confusion, the Work Item is not a satisfactory contractual document. Paragraphs 7-6.2

through 7-6.7 list wording to be avoided in Work Item writing. These paragraphs attempt to highlight some of the mistakes commonly made in wording Work Items.

7-6.2 Ambiguous requirements. Ambiguities normally occur because of poor sentence structure and result in 2 or more interpretations of what is required. Contractors will invariably choose the least expensive interpretation. An example of an ambiguous requirement is: Install 12 storage bins (2ftx2ft) in the GSM (4-107-2) and dry provision (4-107-1) storerooms. Does this require a total of 12 or 24 bins?

7-6.3 Non-definitive requirements. Non-definitive requirements occur when accept or reject criteria is not included in the requirements. Some examples are:

7-6.3.1 Check bearing temperature and vibration.

7-6.3.2 Support new pipe with adequate hangers.

7-6.3.3 Prove gaskets and bolting satisfactory.

7-6.3.4 Close up as original.

Requirements for inspections and tests must include definitive accept or reject criteria required for contractor and SUPSHIP/RMC Quality Assurance evaluations. When accept or reject criteria is not provided, invoke ***NAVSEA*** Standard Phraseology B8a.

7-6.4 Non-definitive phrases. Use of non-definitive phrases results in either non-definitive requirements or cancels the effect of stated requirements. Examples are:

7-6.4.1 As applicable

7-6.4.2 In accordance with latest requirements

7-6.4.3 Or other recognized methods

7-6.4.4 As practicable

7-6.4.5 As necessary

7-6.4.6 Or other suitable method

7-6.4.7 Check for proper values

7-6.5 Catch-all phrases. The tendency is to use catch-all phrases to cover unforeseen conditions or developments and thereby avoid a contract modification. In reality, use of these methods is more costly to the Government than an occasional contract modification because the contractor will include contingency money in his bid for catch-all phrases. Examples are:

7-6.5.1 Included, but not limited to

7-6.5.2 As required

7-6.5.3 Any and all or Each and every

7-6.5.4 When and where necessary

7-6.5.5 Etc.

7-6.6 Arbitrary statements. Statements that assign arbitrary authority to an activity or individual. Examples are:

7-6.6.1 Where directed by the Ship's Force

7-6.6.2 To the satisfaction of the SUPSHIP/RMC representative

7-6.6.3 In accordance with NAVSEA directives

7-6.6.4 As directed by the NAVSSES (NAVSEC) representative

7-6.7 Arbitrary Authority. The contractor is not required to meet the expectations of:

7-6.7.1 The on-scene surveyor

7-6.7.2 The Commanding Officer's representative

7-7 DO'S AND DON'TS

7-7.1 DO use the phrase "as designated by the SUPERVISOR" when providing Front Loads (accomplishing a defined quantity of a specific task) or Level of Effort (LOE) Growth Reservations (providing a number of man-days and material dollars) to accomplish anticipated not clearly defined repairs as follows:

7-7.1.1 DO use an inspection and required contractor furnished reports when "as designated by the SUPERVISOR" is used to provide the medium for the SUPERVISOR to issue specific written designations for the contract record.

7-7.1.2 DO use and issue specific written designations, normally in response to contractor furnished reports, when "as designated by the SUPERVISOR" to document the authorized designations for the contract record.

7-7.1.3 DO use, maintain, and retain a written ledger of specific written designations when "as designated by the SUPERVISOR" to document the authorized designations for the contract record.

7-7.2 DO use the phrase "when directed by the SUPERVISOR" if the start date for a Front Load statement (accomplishing a defined quantity of a specific task) or a Level of Effort (LOE) Growth Reservation statement (providing a number of man-days and material dollars) is not known as follows:

7-7.2.1 DO use an inspection and required contractor furnished reports when "when directed by the SUPERVISOR" is used to provide the medium for the SUPERVISOR to issue specific written designations for the contract record.

7-7-2.2 DO use and issue specific written designations, normally in response to contractor furnished reports, when "when directed by the SUPERVISOR" to document the authorized designations for the contract record.

7-7.2.3 DO use, maintain, and retain a written ledger of specific written designations when "when directed by the SUPERVISOR" to document the authorized designations for the contract record.

7-7.3 DO follow local NSA Technical Authority Review and Approval policies for Contractor Reports, LOE growth reservations, and Contract Changes.

7-7.4 DO use clear, simple language, free of terms subject to variation in interpretation.

7-7.5 DO define unusual technical terms.

7-7.6 DO write for the understanding of those who will have to use your product.

7-7.7 DO give specific and sufficient requirements and directions so that the users will not be in doubt as to what is required.

7-7.8 DO make each Work Item as detailed as necessary to describe the work to be accomplished.

7-7.9 DO use "must" when the provision is mandatory; "may" when the action is discretionary (non-mandatory); "will" denotes a required action in the future; and "must not" when the action is prohibited.

7-7.10 DO make positive, concise statements that cannot be misinterpreted.

7-7.11 DO verify that reference documentation is available and applicable.

7-7.12 DO use attachments to improve clarity.

7-7.13 DO become familiar with available background and reference documentation before preparing Work Items. It will aid in drafting a good Work Item. Include only those essential references in the Work Item itself.

7-7.14 DO convey the information as if you did not understand who would do the job or where it would be done. Release a job only with the knowledge that it can be satisfactorily accomplished as you intended with no further communication.

7-7.15 DO describe in clear, concise, and complete language exactly what you expect the contractor to do. This is what you are willing to pay for and this, and only this, is what you can expect him to deliver.

7-7.16 DO use spellcheck on all Work Items.

7-7.17 DO use the word “Each” rather than use of a plural for (i.e., use “each label plate” vice “label plates”, “each surface” vice “surfaces”, and “each mating surface” vice “mating surfaces”)

7-7.18 DO document requirements only once within paragraph 3 of the Work Item by invoking Category II ***NAVSEA*** Standard Items, or by describing requirements to be accomplished in paragraph 3 of the Work Item.

7-7.19 DO list a known source if there is one, proprietary original equipment manufacturer (OEM) or vendor.

7-7.***20*** DON’T use oral designations for the contract record when "as designated by the SUPERVISOR" or "when directed by the SUPERVISOR" are used. Oral designations do not provide binding contractual documentation. Oral designations may constitute an unauthorized constructive change to the contract.

7-7.***21*** DON’T use colloquialisms.

7-7.***22*** DON’T use non-definitive statements such as "as required" or "as directed".

7-7.***23*** DON’T use statements that assign arbitrary authority to an activity or individual.

7-7.***24*** DON’T use catch-all phrases such as "as necessary", "excessive" or "as required".

7-7.***25*** DON’T use extraneous words like "thoroughly clean" or "extreme care is to be taken". Say "clean" (and indicate criterion/criteria).

7-7.***26*** DON'T use redundancy in an attempt to clarify or emphasize. Make each statement stand by itself.

7-7.***27*** DON'T put multiple thoughts in a single subparagraph. Keep each subparagraph short, concise and complete, expressing a single thought or requirement.

7-7.***28*** DON'T use such words as "proper" or "adequate" to signify a degree of acceptance. Include definitive acceptance or rejection criterion/criteria.

7-7.***29*** DON'T try to salvage a poor sentence or Work Item by indiscriminately jamming in words. Rewrite.

7-7.***30*** DON'T issue a Work Item with unresolved problems; you may be providing misguidance and misdirection.

7-7.***31*** DON'T use attachments or references to avoid writing requirements into the Work Item.

7-7.***32*** DON'T impose unrealistic requirements on the contractor. Exercise care in developing Work Items to ensure that requirements are always capable of being performed.

7-7.***33*** DON'T use symbols as abbreviations or to define dimensions (except when used in drawing titles). For example: % for percent, & for and, " for inch, ' for foot. Spell it out: 30 percent, and, One FT, 2 FT, 24 inches.

7-7.***34*** DON'T call it plate in one sentence and plating in other sentences or cable in one sentence and wire in other sentences. Say it the same way throughout the same Work Item. Be consistent.

7-7.***35*** DON'T use the numeral 1 alone except in numbering paragraphs, references, and GFM amount inserted under "TOTAL QUANTITY PROVIDED". Write it out as "One" or "one" as applicable.

7-7.***36*** DON'T include anything in the Work Item that is not necessary to describe the desired product.

7-7.***37*** DON'T use test requirements such as 1-1/2 times the working pressure. Instead, say test at 150 PSIG. Give definitive test criterion/criteria.

7-7.***38*** DON'T direct the contractor to provide and install ____. He is required to provide material not specifically listed as GOVERNMENT FURNISHED MATERIAL (GFM).

7-7.***39*** DON'T direct the contractor to "replace with material in kind" or "replace with material same as existing". The existing material could be the cause of the failure. Specify the material to be used.

7-7.***40*** DON'T write open and inspect type Work Items unless directed by the work request.

7-7.***41*** DON'T change the intent of the work request by writing more or less than what is called for.

7-7.***42*** DON'T use "quantity" descriptions in paragraph 3 when called out in paragraph 1.3.

7-7.***43*** DON'T list known sources of material/services unless you have verified a quote from the source.

7-7.***44*** DON'T duplicate the requirements of ***NAVSEA*** Standard Items to be accomplished in paragraph 3 of a Work Item.

7-7.***45*** DON'T put multiple thoughts in a single main paragraph or subparagraph. Keep each main paragraph and subparagraph short, concise and complete, expressing a single thought or requirement.

7-7.***46*** DON'T link Work Package Work Items through statements within Work Items (e.g. "Work in conjunction with __.").

7-7.47 DON'T use the phrase "As reported in…" or "Based on the report…" when the full scope of work cannot be defined.

7-7.48 DON'T list a known source if there are multiple vendors or OEM's.

7-8 GLOSSARY OF SUITABLE TERMS

7-8.1 The following is a list of suitable terminology, which will be used, and not suitable terminology, which will not be used.

SUITABLE	NOT SUITABLE
Accomplish the requirements	Accomplish the work ... or Comply with
Accomplish	Conduct…or Perform (Conduct may be used for an operational test
Remove	Drain
Remove existing and install	Replace ... or Unship new
Disconnect	Unbolt
Preserve	Paint
Inspect	Check
Fabricate	Make
Measure	Take

SECTION 7

DOCUMENT PREPARATION AND UTILIZATION *INSTRUCTIONS*

Must be	Is to be or shall be
(Specify a quantity)	All
Verify	Demonstrate ... Prove
Ensure	Assure ... or Insure
Identified	Found
Through	Thru
5,000 dollars	5000 dollars ... or $5000
1,000	1000
Assemble	Re-Assemble
Assembly	Re-Assembly
Install	Re-Install
Installation	Re-Installation

ANNEX A

TO

APPENDIX 4-E

OF

CHAPTER 4 TO

VOLUME VII

JOINT FLEET MAINTENANCE MANUAL (JFMM)

1. INVOKING GUIDE

a. Category I ***N***SIs: A determination must be made as to which of these are applicable to a specific Job Order. The applicable ***N***SIs are invoked for a specific Job Order by inclusion in the IFB/RFP Schedule and listed in the index of Work Items, which is included in each specification package.

NAVSEA Standard Item No.	Title	Usage/Comments
009-001	General Criteria; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-002	Environmental Compliance Report for Material Usage; accomplish	Invoke when work is being accomplished where environmental compliance requirements are not specified locally. Not applicable to boats and craft 65 feet and less in length.
009-003	Toxic and Hazardous Substance; control	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-004	Quality Management System; provide	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length
009-005	Temporary Access; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-006	Maintaining Protection and Cleanliness from Non-Radioactive Operation; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-007	Confined Space Entry, and Certification; accomplish	Invoke for all solicitations on manned vessels. Not applicable to boats and craft 65 feet and less in length.
009-008	Shipboard Fire Protection and Fire Prevention; accomplish	Invoke for all solicitations on manned vessels. Not applicable to boats and craft 65 feet and less in length.
009-010	Asbestos-Containing Material (ACM); control	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-018	Mine Warfare Ships Magnetic Material; control	Invoke for all Minesweeping Ships and Craft
009-019	Provisioning Technical Documentation (PTD); provide	Invoke when hull, mechanical, electrical/electronic equipment or components are being furnished by the contractor. Not applicable to boats and craft 65 feet and less in length.
009-020	Government Property; control	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-021	Alteration Verification, Logistic and Technical Data; provide	Invoke when equipment is being installed new or replaces existing equipment or when equipment is being permanently removed from ship. Not applicable to boats and craft 65 feet and less in length.
009-023	Interference; remove and install	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.

NAVSEA Standard Item No.	Title	Usage/Comments
009-024	Authorization, Control, Isolation, Blanking, Tagging, and Cleanliness; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-034	Fire Protection of Unmanned Vessel at Contractor Facility; accomplish	Invoke when work is being accomplished on unmanned vessels at Contractor's facility. Not applicable to boats and craft 65 feet and less in length.
009-039	Technical Manual Contract Requirement (TMCR) for a New Technical Manual for Commercial Equipment/Component; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-040	Contractor Crane, Multi-Purpose Machine and Material Handling Equipment at a Naval Facility; provide	Invoke when work is being accomplished at a Naval facility. Not applicable to boats and craft 65 feet and less in length.
009-060	Schedule and Associated Report for CNO Availability; provide and manage	Invoke for CNO Availabilities. Not applicable to boats and craft 65 feet and less in length.
009-061	Shipboard Use of Fluorocarbon; control	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-067	Integrated Total Ship Testing; manage	Invoke for all CNO availabilities. Not applicable to boats and craft 65 feet and less in length.
009-069	Heavy Weather/Mooring Plan; provide	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-070	Confined Space Entry, Certification, Fire Protection, Fire Prevention, and Housekeeping for Unmanned Vessel; accomplish	Invoke when work is being accomplished on unmanned vessels. Not applicable to boats and craft 65 feet and less in length.
009-072	Physical Security at a Private Contractor Facility; accomplish	Invoke when work is being accomplished at contractor's facility. Not applicable to boats and craft 65 feet and less in length.
009-073	Shipboard Electrical/Electronic Cable Procedure; inspect, test, install, remove, and repair	Invoke for all solicitations requiring electrical work. Not applicable to boats and craft 65 feet and less in length.
009-074	Occupational, Safety and Health Plan; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-080	Ship Facility; maintain	Invoke for availabilities when ship's crew remains onboard. Not applicable to boats and craft 65 feet and less in length.
009-081	Compartment Closeout; accomplish	Invoke for CNO scheduled availabilities and non-CNO scheduled availabilities greater than or equal to 9 weeks in length, when a formal compartment closeout schedule is not otherwise implemented. Not applicable to boats and craft 65 feet and less in length.

NAVSEA Standard Item No.	Title	Usage/Comments
009-082	Installation of Equal Component Vice Specified Component; report	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-084	Threaded Fastener Requirement; accomplish	Invoke for all solicitations involving fasteners. Not applicable to boats and craft 65 feet and less in length.
009-088	Collection, Holding and Transfer (CHT) and Motor Gasoline(MOGAS) Tank, Space, and Piping, including Sewage or MOGAS-Contaminated Tank, Space, and Piping; certify	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-093	Emergency Planning and Community Right-to-Know Act (EPCRA) and Pollution Prevention Act (PPA) Information; provide	Invoke when work is being accomplished where EPCRA/PPA reporting requirements are not specified locally. Not applicable to boats and craft 65 feet and less in length.
009-099	Ship Departure Report; provide	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-100	Ship's Stability; maintain	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-101	Ship Transit and Berthing; accomplish	Invoke when work is being accomplished at the contractor's facility (for ships over 100 feet in length).
009-106	Work Authorization Form Coordinator (WAFCOR); provide	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-109	Non-SUBSAFE Work on SUBSAFE-Certified Vessel; accomplish	Invoke for all SUBSAFE certified vessels.
009-110	Non-Nuclear Work on a Nuclear Vessel; accomplish	Invoke for all work on nuclear vessels.
009-111	Schedule and Associated Report for non-CNO Availability; provide and manage	Invoke for non-CNO Availabilities. Not applicable to boats and craft 65 feet and less in length.
009-117	Combat System, Light-Off Support; provide	Invoke for solicitations requiring a Combat Systems Light-Off.
009-118	CG Deck Loading; accomplish	Invoke for all solicitations for CG-47 Class ships.
009-120	Fact Finding and Critique of Unplanned Event; manage	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-122	Temporary Padeye; install and remove	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-125	Boat 65 Feet (20meters) Long and Less; accomplish	Invoke on boats and craft 65 feet and less in length.
009-126	Schedule Model Review (SMR); accomplish	***Invoke for CNO Availabilities. Not applicable to boats and craft 65 feet and less in length.***

ANNEX B

TO

APPENDIX 4-E

OF

CHAPTER 4 TO

VOLUME VII

JOINT FLEET MAINTENANCE MANUAL (JFMM)

ANNEX B

NAVSEA STANDARD PHRASEOLOGY

1. Discussion. The standard phraseology herein is promulgated as NAVSEA Standard Phraseology. Each user activity must utilize this ***NAVSEA*** standard phraseology to ensure reliable and consistent reproduction of the wording contained herein. An efficient way to ensure this goal is to store new phraseology in a permanent memory form such as on computer systems media or other means. When a phrase is required it will be reproduced from the stored memory. This reproduction will ultimately save considerable labor in the production process and will immediately improve accuracy and reduce the need for extensive proofreading of Work Items.

2. Changes. Additions, deletions, or modifications to this ***NAVSEA*** standard phraseology must be made by submitting the recommended change to the SSRAC for consideration at the annual meeting. The following basic guidelines must be applied when evaluating new proposed phrases.

A. Phrases must be applicable for all user activities and, therefore, must not be limited to a particular class of ship. However, when phrases do apply to a particular class of ship, it must be noted (e.g., C14).

B. Phrases must be limited to a minimum number of sentences. Phrases containing numerous sentences will be referred for consideration as a template.

C. The sentence structure must be grammatically applicable for singular and plural situations. To achieve this, the word "each" must be utilized in lieu of having to pluralize words within the phrase every time repairing, replacing, removing, installing, testing, etc., of more than one unit needs to be addressed.

D. Each phrase must express a complete thought, in clear, concise language which is contractually sound as required by Appendix 4-E, Section ***7-2.4.7.***

E. Sentence structure of phrases must be verb, noun format as required by Appendix 4-E, Section ***7-2.4.4.***

F. Each phrase must identify compliance requirements as required by Appendix 4-E, Section ***7-2.3.9.***

G. Ambiguous wording must not be used as indicated in Appendix 4-E, Section 7-2.4.7 ***and 7-6.2.***

H. Do not refer to the word "paragraph" when referring to another part of the Work Item (except for Attachments). For example:

"3._ Remove the equipment listed in 1.3."

I. All references to NAVSEA or NAVSUP drawings or technical manuals must start with the drawing or technical manual number and omit the word NAVSEA or NAVSUP. The above will facilitate the recall of a numerical listing of references by drawing/technical manual number. For example:

S9086-T8-STM-010/CH-593 Rev 7, Pollution Control

J. Minimize the number of blanks contained within phrases which must be filled in by the planner/surveyor.

3. Organization. The ***NAVSEA*** standard phraseology presented below is organized into 6 sections, each phrase within each section is assigned a unique identification number. The 6 sections are identified by the letter designation of the section, followed by a unique number. The 6 sections are as follows:

A. ***NAVSEA*** Standard phraseology for invoking Category II ***NAVSEA*** Standard Items, for use in various disciplines. Use of this section is mandatory.

B. ***NAVSEA*** Standard phrases for general use in various disciplines.

C. ***NAVSEA*** Standard phrases for use in the piping disciplines.

D. ***NAVSEA*** Standard phrases for use in structural disciplines.

E. ***NAVSEA*** Standard phrases for use in mechanical disciplines.

F. ***NAVSEA*** Standard phrases for use in electronic and electrical disciplines.

4. Instructions. Guidance instructions are also provided where appropriate. The guidance instructions and notes are listed first, then the phrase and the phrase number. If any guidance instructions or notes are applicable to the blanks, these will appear before the phrase. ***NAVSEA*** Standard phrases, which cannot stand alone or phrases where optional uses are permitted will generally contain a note. The phrases herein, which include the words "using 2._ for guidance. "must be deleted when guidance is not available. The words “in accordance with 2._“must be substituted when 2._ requirements are mandatory.

***NAVSEA* STANDARD PHRASEOLOGY**

SECTION A This section of ***NAVSEA*** standard phraseology contains the approved ***NAVSEA*** standard phrases to be used when invoking Category II ***NAVSEA*** Standard Items.

NAVSEA Standard Item #	Code	Text	Notes
009-009	A9	Accomplish the requirements of 009-009 of 2.1 for __.	
009-011	A11a	Accomplish the requirements of 009-011 of 2.1 for __.	Not to be used for interference replacements covered by 009-023. Use A11a to install new piping, machinery, and hull insulation and lagging. Consideration must be given to high traffic areas as defined in 3.16 of MIL-STD-769. Use 009-012 phraseology if welding of new fasteners is required for this work item. Use 009-032 phraseology if cleaning and painting of new insulation, lagging, and reusable covers are required for this work item.
	A11b	Accomplish the requirements of 009-011 of 2.1.	
009-012	A12a	Accomplish the requirements of 009-012 of 2.1, including Table __, Column(s) __, Lines One through __.	A12b must be used as a subparagraph of A12a if more than a visual inspection is required. Use 009-009 phraseology if a Process Control Procedure (PCP) for specific welding, brazing, and inspection operations is required for this work item. A12b may be used as a subparagraph to A12a and A12c. This phrase cannot be used to specify NDT requirements not associated with welding or brazing.
	A12b	Accomplish nondestructive testing in accordance with Line __.	
	A12c	Accomplish the requirements of 009-012 of 2.1, including Table __, Column(s) __, Lines One through _, for __.	
009-013	A13a	Accomplish the requirements of 009-013 of 2.1 for each __ listed in __, using 2.__ for guidance.	USE B30a or B30b (AS APPLICABLE) AS A SUBPARAGRAPH TO A13a.
	A13b	Calibrate and adjust each new meter in accordance with 009-013 of 2.1.	
	A13c	Ensure calibration is accomplished within __ days preceding the scheduled LOA lock-out date.	For use with A13a and A13b when Light-Off Assessment (LOA)/Propulsion Examination Board (PEB) related.
009-015	A15	Accomplish the requirements of 009-015 of 2.1 for each rotating assembly.	
009-016	A16	Accomplish the requirements of 009-016 of 2.1 for the __ listed in __, using 2.__ for guidance.	Insert equipment technical manual in references. USE B30a or B30b (AS APPLICABLE) AS A SUBPARAGRAPH TO A16.
009-017	A17	Accomplish the requirements of 009-017 of 2.1 for the equipment listed in 1.3.__, using 2.__ for guidance.	Insert equipment technical manual in references. Use 009-015 phraseology if balancing of the rotating assembly for rotating electrical equipment is required for this work item. Use 009-032 phraseology if cleaning and painting for rotating electrical equipment is required for this work item. Use 009-058 phraseology if shaft alignment for rotating electrical equipment is required for this work item.

***NAVSEA* STANDARD PHRASEOLOGY**

NAVSEA Standard Item #	Code	Text	Notes
009-025	A25a	Accomplish the requirements of 009-025 of 2.1 for a running air test of __. Allowable leakage: None.	
	A25b	Accomplish the requirements of 009-025 of 2.1 for a completion air test of __. Test pressure must be __ PSIG. Allowable drop in pressure: None.	Use A25b for tanks, voids, and cofferdams. The allowable drop ounces per square inch for wiring trunk and other spaces are 5 and 2 respectively. ***Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A25c	Accomplish the requirements of 009-025 of 2.1 for a __ hose test of __. Allowable leakage: None.	Salt water must be specified for use on wood.
	A25d	Accomplish the requirements of 009-025 of 2.1 for a vacuum box test of __. Allowable leakage: None.	
	A25e	Accomplish the requirements of 009-025 of 2.1 for an air hose, water hose, or vacuum box test of __. Allowable leakage: None.	
	A25f	Accomplish the requirements of 009-025 of 2.1 for a chalk test of each structural closure repaired in __.	
009-026	A26a	Accomplish the requirements of 009-026 of 2.1, including Attachment __.	Identify correct attachment according to type of deck covering involved. Use 009-032 phraseology if cleaning and painting for deck covering is required for this work item.
	A26b	Accomplish the requirements of 009-026 of 2.1, including Attachment __, for installation of __, in each location listed in __.	
	A26c	Accomplish the requirements of 009-026 of 2.1 for __.	
009-027	A27	Accomplish the requirements of 009-027 of 2.1.	Use 009-009 phraseology if a Process Control Procedure (PCP) for Level I work is required for this work item.
009-030	A30	Accomplish the requirements of 009-030 of 2.1.	
009-031	A31	Accomplish the requirements of 009-031 of 2.1.	
009-032	A32a	Accomplish the requirements of 009-032 of 2.1, including Table __, Line(s) __, for __.	Use A32a when main item is preservation and the tables in 009-032 provide a choice. Use A32b for other primary preservation work and touch up. Specify degree of preservation, i.e., foundation, new and disturbed surfaces. Use 009-026 phraseology if a slip resistant deck covering is required for this work item.
	A32b	Accomplish the requirements of 009-032 of 2.1 for __.	
	A32c	Accomplish the requirements of 009-032 of 2.1, including Table __, Line(s) __, Column(s) __, for __.	
	A32d	Accomplish the requirements of 009-032 of 2.1 for each new and disturbed surface.	

NAVSEA **STANDARD PHRASEOLOGY**

NAVSEA Standard Item #	Code	Text	Notes
009-033	A33	Accomplish the requirements of 009-033 of 2.1 for equipment listed in 1.3.__, using 2.__ for guidance.	Insert equipment technical manual in references. Use 009-015 phraseology if balancing of the rotating assembly for rotating electrical equipment is required for this work item. Use 009-032 phraseology if cleaning and painting for rotating electrical equipment is required for this work item. Use 009-058 phraseology if shaft alignment for rotating electrical equipment is required for this work item. Use 009-113 phraseology if work on windings for a Sealed Insulation System (SIS) is required for this work item.
009-036	A36	Accomplish the requirements of 009-036 of 2.1 for each controller listed in __, using 2.__ for guidance.	Insert equipment technical manual in references. USE B30a or B30b (AS APPLICABLE) AS A SUBPARAGRAPH TO A36. Use 009-032 phraseology if cleaning and painting for a controller is required for this work item.
009-037	A37a	Accomplish the requirements of 009-037 of 2.1 for __.	Invoke in work items requiring wood repairs/new installation. Use 009-032 phraseology if cleaning and painting of bulkhead sheathing sanded surfaces is required by this work item.
	A37b	Ensure caulking compound for each deck plank seam is __.	A37b must be used only as a subparagraph to A37a. Invoke A37b when accomplishing repairs/new installations of deck planking caulking seams.
009-038	A38	Accomplish the requirements of 009-038 of 2.1 for __.	
009-045	A45a	Accomplish the requirements of 009-045 of 2.1 for each plug valve listed in __, using 2.__ for guidance.	For ***NAVSEA*** Standard Items 009-045, 009-046, 009-047, 009-048, 009-050, 009-052, 009-053, 009-055, and 009-096. Valve removal and installation must be specified in the invoking work item. A45b and A45c must be subparagraphs to A45a. For shop repair and test. Test medium and test pressure for seat tightness must be specified in the invoking work item. ***For A45b Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A45b	Ensure seat tightness test pressure is __ PSIG.	
	A45c	Ensure test medium is __.	
009-046	A46a	Accomplish the requirements of 009-046 of 2.1 for each butterfly valve listed in __, using 2.__for guidance.	A46b and A46c must be subparagraph to A46a. For shop repair and test. Valve removal and installation must be specified in the invoking work item. Test medium and test pressure for seat tightness must be specified in the invoking work item. ***For A46b Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A46b	Ensure seat tightness test pressure is __ PSIG.	
	A46c	Ensure test medium is __.	
009-047	A47a	Accomplish the requirements of 009-047 of 2.1 for each gate valve listed in __, using 2.__ for guidance.	A47b and A47c must be subparagraphs to A47a. For shop repair and test. Test medium and test pressure for seat tightness must be specified in the invoking work item. Must not be used for high pressure steam valves. ***For A47b Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A47b	Ensure seat tightness test pressure is __ PSIG.	
	A47c	Ensure test medium is __.	

NAVSEA **STANDARD PHRASEOLOGY**

NAVSEA Standard Item #	Code	Text	Notes
009-048	A48a	Accomplish the requirements of 009-048 of 2.1 for each pressure seal bonnet valve listed in __, using 2.__ for guidance.	A48b and A48c must be subparagraphs to A48a. For shop repair and test. Test medium and test pressure for seat tightness must be specified in the invoking work item. ***For A48b Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A48b	Ensure seat tightness test pressure is __ PSIG.	
	A48c	Ensure test medium is __.	
009-049	A49	Accomplish the requirements of 009-049 of 2.1 for each in-line pressure seal bonnet valve listed in __, using 2.__ for guidance.	For in-line repair. Operational test of the valve must be specified in the invoking work item.
009-050	A50a	Accomplish the requirements of 009-050 of 2.1 for each check valve listed in__, using 2.__ for guidance.	A50b must be a subparagraph to A50a. For shop repair and test. Test medium for seat tightness must be specified in the invoking work item. Must not be used for scupper valves.
	A50b	Ensure test medium is __.	
009-052	A52a	Accomplish the requirements of 009-052 of 2.1 for each relief valve listed in __, using 2.__ for guidance.	A52b-A52d must be subparagraphs to A52a. For shop repair and test. Test medium and test pressure for seat tightness and valve lifting must be listed in the invoking work item. Must not be used for boiler safety valves or balanced design relief valves. ***For A52c and A52d, planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A52b	Ensure the test medium is __.	
	A52c	Ensure the seat tightness test pressure is __ PSIG.	
	A52d	Ensure the lifting pressure is __ PSIG.	
009-053	A53a	Accomplish the requirements of 009-053 of 2.1 for each _____ valve listed in __, using 2. __ for guidance.	A53b and A53c must be subparagraphs to A53a. For shop repair and test. Test medium and test pressure for seat tightness must be specified in the invoking work item. For ***A53b, planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A53b	Ensure the seat tightness test pressure is __ PSIG.	
	A53c	Ensure the test medium is __.	
009-054	A54	Accomplish the requirements of 009-054 of 2.1 for each in-line bolted bonnet steam valve listed in __, using 2.__ for guidance.	For in-line repair. Operational test of the valve, including bypass valve, must be specified in the work item.
009-055	A55a	Accomplish the requirements of 009-055 of 2.1 for each pressure regulating/reducing valve listed in __, using 2.__ for guidance.	A55b and A55c must be subparagraphs to A55a. For shop repair and test. Test medium and test pressure for valve inlet and regulated pressure/temperature must be specified in the invoking work item. A55a-A55c must be used for pressure regulators/reducers only. ***For A55b, planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A55b	Ensure the inlet/regulating or reducing pressure is __ PSIG to __ PSIG.	
	A55c	Ensure the test medium is __.	
	A55d	Accomplish the requirements of 009-055 of 2.1 for each temperature regulating/reducing valve listed in __, using 2.__ for guidance.	A55e and A55f must be subparagraphs to A55d. A55d through A55f must be used for temperature regulators only.
	A55e	Ensure the regulated temperature is __ degrees Fahrenheit.	
	A55f	Ensure the test medium is __.	

***NAVSEA* STANDARD PHRASEOLOGY**

NAVSEA Standard Item #	Code	Text	Notes
009-056	A56	Accomplish the requirements of 009-056 of 2.1 for __.	
009-057	A57	Accomplish the requirements of 009-057 of 2.1.	A57 to be invoked as 3.1 in work items where reduction gear security is affected. Use 009-032 phraseology if cleaning and painting for new and disturbed surfaces is required for this work item.
009-058	A58	Accomplish the requirements of 009-058 of 2.1 for __.	A58 to be invoked any time the rotor of a pump or driver (motor/turbine) is disturbed for repair or replacement.
009-062	A62	Accomplish the requirements of 009-062 of 2.1 for __.	
009-063	A63a	Accomplish the requirements of 009-063 of 2.1.	A63b will be a subparagraph to A63a. Specify the location from which samples of lubricating or hydraulic fluids are to be taken.
	A63b	Obtain a sample from__ in accordance with ASTM D 4057.	
009-065	A65a	Accomplish the requirements of 009-065 of 2.1 for __.	Use 009-065 phraseology when PCB contained material is identified or suspected in drawing/technical manual or by ship-check.
	A65b	Accomplish the requirements of 009-065 of 2.1.	
009-071	A71a	Accomplish the requirements of 009-071 of 2.1 for new and disturbed piping.	Invoke A71a for non-pressurized systems only.
	A71b	Accomplish the requirements of 009-071 of 2.1 for new and disturbed piping system.	A71b-A71e are for use where the operating pressure test is allowed by NSTM CH-505. Test pressure and medium must be listed.
	A71c	Ensure operating test pressure is __ PSIG, using __ in accordance with __.	***For A71c planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A71d	Accomplish the requirements of 009-071 of 2.1 for new and disturbed piping system.	A71d-A71e are for use in Feedwater piping systems where conductivity levels require monitoring.
	A71e	Ensure ***operating*** test pressure is __ PSIG, using feedwater conforming to Paragraphs 220-22.18 or 220-22.20, and 220-22.21 and 220-22.22 of 2.__.	For reference use S9086-GX-STM-020/CH-220, Boiler Water/Feedwater Test and Treatment. ***Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A71f	Accomplish the requirements of 009-071 of 2.1 for hydrostatic test, using clean, fresh water at __ PSIG, for new and disturbed_piping systems.	A71h-A71j are for use where the hydrostatic test is required by NSTM CH-505. Test medium and system identification must be listed. ***For A71f planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A71g	Accomplish the requirements of 009-071 of 2.1 for hydrostatic test, using feedwater at __ PSIG, for new and disturbed_piping systems.	***Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A71h	Feedwater ***must*** conform to Paragraphs 220-22.18 or 220-22.20, and 220.22.21 and 220-22.22 of 2.__.	For reference use S9086-GX-STM-020/CH-220, Boiler Water/Feedwater Test and Treatment.
	A71i	Accomplish the requirements of 009-071 of 2.1 for new and disturbed_piping systems, using clean, dry air or nitrogen at __ PSIG.	Use ***A71i*** for air test of piping systems where water would be detrimental. ***For A71i planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A71j	Accomplish the requirements of 009-071 of 2.1 for a visual tightness test of the Vacuum, Collection, Holding and Transfer (VCHT) Sewage System to at least 24 inches of Hg (vacuum) for at least 10 minutes, with less than 10 percent drop.	For use with VCHT systems (portions under vacuum).
	A71k	Accomplish the requirements of 009-071 of 2.1 for __ test, using system fluid at __ PSIG, for new and disturbed ___ piping systems.	For strength, porosity and mechanical joint tightness of hydraulic and lubricating oil systems. ***Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***

***NAVSEA* STANDARD PHRASEOLOGY**

NAVSEA Standard Item #	Code	Text	Notes
009-075	A75	Accomplish the requirements of 009-075 of 2.1 for __, using 2.__ for guidance.	Insert equipment technical manual in references. USE B30a or B30b (AS APPLICABLE) AS A SUBPARAGRAPH TO A75.
009-076	A76	Accomplish the requirements of 009-076 of 2.1 for __.	
009-077	A77a	Accomplish the requirements of 009-077 of 2.1 for __.	A Process Control Procedure (PCP) is required for cofferdam installation; 009-009 Phraseology must be included for this work item.
	A77b	Accomplish the requirements of 009-077 of 2.1.	
009-078	A78	Accomplish the requirements of 009-078 of 2.1.	Use 009-032 phraseology if cleaning and painting for new and disturbed surfaces is required for this work item.
009-079	A79a	Accomplish the requirements of 009-079 of 2.1 for __.	Invoke for Multi-Ship Multi-Option availabilities for Government Owned Material (GOM) status reports.
	A79b	Accomplish the requirements of 009-079 of 2.1.	
009-083	A83a	Accomplish the requirements of 009-083 of 2.1 for __.	Invoke for availabilities when wire rope rigging is repaired/altered. Use 009-009 phraseology if a Process Control Procedure (PCP) for fabrication of crane wire rope assemblies is required for this work item.
	A83b	Accomplish the requirements of 009-083 of 2.1.	
009-085	A85	Accomplish the requirements of 009-085 of 2.1.	
009-086	A86a	Accomplish the requirements of 009-086 of 2.1 for __.	Invoke when working on Fluorocarbon or Halon-containing system.
	A86b	Accomplish the requirements of 009-086 of 2.1.	
009-087	A87a	Accomplish the requirements of 009-087 of 2.1 for __.	Invoke when working on potable water systems.
	A87b	Accomplish the requirements of 009-087 of 2.1.	

***NAVSEA* STANDARD PHRASEOLOGY**

NAVSEA Standard Item #	Code	Text	Notes
009-091	A91	Accomplish the requirements of 009-091 of 2.1 for equipment listed in __.	
009-092	A92	Accomplish the requirements of 009-092 of 2.1 for equipment listed in __, using 2.__ for guidance.	Insert equipment technical manual. Use 009-032 phraseology if cleaning and painting for disturbed surfaces is required for this work item.
009-095	A95a	Accomplish the requirements of 009-095 of 2.1 for __.	Invoke when repairs/alterations are done on piping system.
	A95b	Accomplish the requirements of 009-095 of 2.1.	
009-096	A96a	Accomplish the requirements of 009-096 of 2.1 for each ball valve listed in __, using 2.__ for guidance.	A96b and A96c must be subparagraphs to A96a. For shop repair and test. Test medium and test pressure for seat tightness must be specified in the invoking work item. ***For A96b planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
	A96b	Ensure the seat tightness test pressure is __ PSIG.	
	A96c	Ensure the test medium is __.	
009-103	A103a	Accomplish the requirements of 009-103 of 2.1 for __.	Invoke when 1. A referenced Dwg denotes a permanent change when removal, addition or shifting of weight one pound or > that will cause a stability and trim issue. 2. The work involves permanent removal, addition or shifting of weight one pound or >)includes but not limited to, structural members, plating, equipment, systems, piping, deck coverings, actions by Alteration Installation Teams). 3. The amount of weight one pound or > removals, additions or shifts which will cause a stability and trim issue can be significantly different for different classes of Navy battle force ships and other Navy boats and craft. 4. Temporary weights (E.G. Staging, scaffolding, enclosures, deck covering, containments, offloading/on-loading fluids) are covered by NSI 009-100 for maintaining proper list.
	A103b	Accomplish the requirements of 009-103 of 2.1.	
009-104	A104	Accomplish the requirements of 009-104 of 2.1.	
009-105	A105	Accomplish the requirements of 009-105 of 2.1 for the __ listed in 1.__. The coating material must be __, using the __ spray process.	Use when Thermal Spray Coating (except aluminum) machinery components. Specify the type of coating material and either wire spray or powder spray process. Use 009-027 phraseology if Material Identification and Control (MIC) is required for this work item.
009-107	A107a	Accomplish the requirements of 009-107 of 2.1 for cleaning and flushing __.	This standard must be used when piping system cleanliness is lost. When practical, shipboard cleaning must be minimized or eliminated by component and subassembly cleaning after fabrication and before installation aboard ship. Planner must identify which system requires cleaning. Use 009-09 phraseology if a Process Control Procedure (PCP) is required for this work item. A107b must be a subparagraph to A107a. Planner must specify cleanliness level II or level III as identified in Section 505j2 of GSO for piping system being cleaned.
	A107b	Ensure General Cleaning must be Level __.	
009-112	A112a	Accomplish the requirements of 009-112 of 2.1 for __.	Invoke for availabilities when work involves radiographic inspection.
	A112b	Accomplish the requirements of 009-112 of 2.1.	

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NAVSEA Standard Item #	Code	Text	Notes
009-113	A113	Accomplish the requirements of 009-113 of 2.1 for the equipment listed in 1.3.__, using 2.__ for guidance.	Use 009-015 phraseology if balancing of the rotating assembly for rotating electrical equipment is required for this work item. Use 009-032 phraseology if cleaning and painting for rotating electrical equipment is required for this work item. Use 009-058 phraseology if shaft alignment for rotating electrical equipment is required for this work item.
009-114	A114	Accomplish the requirements of 009-114 of 2.1.	
009-115	A115	Accomplish the requirements of 009-115 of 2.1 for each bearing listed in __.	Use 009-009 phraseology if a Process Control Procedure (PCP) for Rebabbitting each bearing is required for this work item.
009-116	A116	Accomplish the requirements of 009-116 of 2.1 for __.	
009-121	A121a	Accomplish the requirements of 009-121 of 2.1 for __.	Support must be provided by the SUPERVISOR. The technical representative must only be requested when: 1. Technical documentation is not available to the SUPERVISIOR (i.e. SUPERVISOR does not have the proprietary data). 2. The SUPERVISIOR does not have sufficient personnel to support oversight of the assessment/inspection. 3. Special tools or equipment are required. 4. The SUPERVISOR does not have personnel with the knowledge or expertise to support the assessment/inspection.
	A121b	Accomplish the requirements of 009-121 of 2.1.	
009-123	A123	Accomplish the requirements of 009-123 of 2.1 for __.	
009-124	A124a	Accomplish the requirements of 009-124 of 2.1 for __.	
	A124b	Accomplish the requirements of 009-124 of 2.1.	
	A124c	Accomplish the requirements of 009-124 of 2.1, including Table __, Line(s) __, for.	
	A124d	Accomplish the requirements of 009-124 of 2.1, including Table __, Line(s) __, Column(s) for __.	

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SECTION B This section of ***NAVSEA*** Standard Phraseology is for general use in all disciplines.

Code	Text	Notes
B1	Remove and reinstall each __ as an interference where required.	Must be used when the exceptions listed in 3.1 of 009-023 are to be removed/installed as interferences.
B2	Accomplish a static load test of the __. A test load of __ pounds must be applied for 10 minutes. Remove the test load and inspect __ and surrounding structure for evidence of damage or permanent deformation. Allowable damage: None.	
B3	Systems and Specifications, SSPC Painting Manual, Volume 2	
B4a	Solvent clean __. Accomplish each requirement of Surface Preparation Specification SSPC-SP 1 of 2.__.	Use B3 for reference for phrases B4a-B4h. Solvent cleaning specification covers the procedure required for the removal of oil, grease, dirt, soil, salts, and contaminants by cleaning with solvent, vapor alkali, emulsion, or steam.
B4b	Hand tool clean __. Accomplish each requirement of Surface Preparation Specification SSPC-SP 2 of 2.__.	Hand Tool Cleaning specification covers the procedure and degree of cleanliness required for the removal of loose rust, loose mill scale, and loose paint by hand chipping, hand scraping, hand sanding, hand brushing, or by a combination of these methods.
B4c	Power tool clean __. Accomplish each requirement of Surface Preparation Specification SSPC-SP 3 of 2.__.	Power tool cleaning specification covers the procedure and degree of cleanliness required for the removal of loose rust, loose mill scale, and loose paint with power wire brushes, power impact tools, power grinders, power sanders or by a combination of these methods.
B4d	White blast clean __. Accomplish each requirement of Surface Preparation Specification SSPC-SP 5 of 2.__.	White blast cleaning specification covers the procedure and degree of cleanliness required for the removal of mill scale, rust scale, paint, and foreign matter by the use of abrasives propelled through nozzles or by centrifugal wheels.
B4e	Commercial blast clean __. Accomplish each requirement of Surface Preparation Specification SSPC-SP 6 of 2.__.	Commercial blast cleaning specification cover the procedure and degree of cleanliness required for the removal of mill scale, rust, rust scale, paint, and foreign matter by the use of abrasives through nozzles or by centrifugal wheels to the extent that two thirds of each square inch of surface area must be free of visible residues and the remainder must be limited to light discoloration, slight staining or tight residues.

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Code	Text	Notes
B4f	Brush-off blast clean __. Accomplish each requirement of Surface Preparation Specification SSPC-SP 7 of 2.__.	Brush-off blast cleaning specification covers the procedure and degree of cleanliness required for the removal of loose mill scale, loose rust, loose paint or coatings by the use of abrasives propelled through nozzles or by centrifugal wheels to the extent that tight mill scale, tightly adhered rust, tightly adhered paint, and tightly adhered coatings are permitted to remain.
B4g	Near-white blast clean __. Accomplish each requirement of Surface Preparation Specification SSPC-SP 10 of 2.__.	Near-White Blast Cleaning specification covers the procedure and degree of cleanliness for the removal of mill scale, rust, corrosion products, oxides, paint,, or other foreign matter by the use of abrasives propelled through nozzles or by centrifugal wheels to the extent at least 95 percent of each square inch of surface area must be free of visible residues and the remainder must be limited to very light shadows, very light streaks, or slight discolorations caused by rust stain, mill scale oxides, or slight, tight residues of paint or coating that remain.
B4h	Power tool clean to bare metal __. Accomplish each requirement of Surface Preparation Specification SSPC-SP 11 of 2.__.	Power Tool cleaning specifications covers the procedure and degree of cleanliness required for the removal of rust, mill scale, and paint with power wire brushes, power impact tools, power grinders, power sanders or by combination of these methods.
B4i	Spot and sweep blast clean __. Accomplish each requirement of Surface Preparation Specification SSPC-SP 18 of 2._.	Thorough Spot and Sweep blast clean specifications covers the procedure and degree of cleanliness required for previously coated steel surfaces using dry abrasive blast cleaning.
B5	Clean each exposed part free of __, leaving no residue or injurious effects.	
B6a	Install each new label plate in accordance with 2.__, using 2.__ for guidance.	
B6b	Ensure each label plate must conform to MIL-DTL-15024, Type __, Material __, Color __, and Size __.	
B7	Reference 2.__ is available from __. For a copy of this reference, contact __.	Planner is required to research and provide pertinent data in notes section of work item.
B8a	Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of __ to the SUPERVISOR.	
B8b	Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of __ to the SUPERVISOR within __ days of __.	Use B8b when report is required by a certain date for effective availability management.
B8c	Submit one legible copy, in hard copy or approved transferrable media, of a report listing __ to the SUPERVISOR.	

Code	Text	Notes
B8d	Submit one legible copy, in hard copy or approved transferrable media, of completed __ to the SUPERVISOR.	
B8e	Submit one legible copy, in hard copy or approved transferrable media, of completed 2.__ for each __ and a report listing results of the requirements of 3.__ to the SUPERVISOR.	
B8f	Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of __ to the SUPERVISOR within one day after recording the data but no later than 96 hours prior to undocking.	Use B8f when a work item requires the submission of a report and the work has to be completed and the data in the hands of the NSA for review and approval prior to the undocking of the vessel.
B9a	Crate and secure __ removed in 3.__. Packaging must conform to 2.__.	B9b must be a subparagraph to B9a. For packing, crating, and shipping of propulsion equipment, either turnaround or replacement, use MIL-DTL-2845, Propulsion Systems, Boat and Ship; Main Shafting, Propellers, Bearings, Gauges, Special Tools, and Associated Repair Parts; Preservation Packaging, Packing and Storage of, as a reference.
B9b	Ship crated material prepaid to and from: __	
B9c	Crate and secure __ removed in 3.__. Packaging must conform to 2.__.	B9d must be a subparagraph to B9c. On equipment which is (GFM) APA material, either turnaround or replacement, use SL460-AA-HBK-010, Handbook for Inspection, Packaging, Handling, Storage and Transportation as a reference when B9c is invoked, for packing, crating, and shipping equipment.
B9d	Ship crated material prepaid to and from: __	
B9e	Ship the equipment to ensure arrival at the repair facility within __ days after availability start date.	
B9f	Submit one legible copy, in hard copy or approved transferrable media, of the shipping document to the SUPERVISOR.	
B10a	Crate and secure __ removed in 3.__. Packaging must conform to 2.__.	B10b must be a subparagraph to B10a. On equipment which is not APA or turnaround, use NAVSUP PUB. 484, Packaging Procedures, as a reference when B10 is invoked for packing, crating, and shipping of equipment that has a known Navy value.
B10b	Ship crated material to: __.	
B10c	Crate and secure __ removed in 3.__, conforming to ASTM D 6039/D 6039M.	B10d must be a subparagraph to B10c. ASTM D6039/D6039M applies only to open wood crates for loads not exceeding 4,000 Lbs.
B10d	Ship crated material to __.	
B10e	Ship the equipment within __ days after the availability start date.	
B10f	Crate and secure the equipment listed in 1.3. Packing must be equal to that used for the equipment provided by the Government. Crated equipment must be turned in to the SUPERVISOR within 10 days after removal.	Use B10g for material to be turned over to the SUPERVISOR.
B10g	Crate and ship __ prepaid to and from the following __ for __:	

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Code	Text	Notes
B11	Remove and dispose of existing insulation and lagging from each system and component listed in 1.3.__, using 2.__ for guidance.	Use when main item is removal of insulation and lagging. For reference use S9086-VH-STM-010/CH-635, Thermal, Fire, and Acoustic Insulation.
B12	Accomplish a joint visual inspection with the SUPERVISOR of each __ listed in __ for structural integrity, deterioration, pitting, each crack, and area of damage or distortion, and to determine required repair.	B8a or ***B8b*** must be a subparagraph to B12.
B13a	Accomplish each __ test on __ in accordance with 2.__. The accept or reject criteria must be in accordance with 2.__.	B13b must be a subparagraph to B13a. Use B13a for ultrasonic or radiographic tests. For reference, use T9074-AS-GIB-010/271, Requirements for Nondestructive Testing Methods and MIL-STD-2035, Nondestructive Testing Acceptance Criteria.
B13b	Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of 3.__ to the SUPERVISOR.	
B14a	Accomplish each __ test on __ in accordance with 2.__. The accept or reject criteria must be in accordance with Class __ of 2.__.	B14b must be a subparagraph to B14a. Use B14a – B14b for liquid penetrant or magnetic particle tests. For reference, use T9074-AS-GIB-010/271, Requirements for Nondestructive Testing Methods and MIL-STD-2035, Nondestructive Testing Acceptance Criteria.
B14b	Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of 3.__ to the SUPERVISOR.	
B15	Remove and dispose of __ from the __.	
B16a	Remove existing and install new __.	
B16b	Remove existing and install new material provided in 5.__.	
B17	Remove existing, fit, and install new the following parts: TOTAL QUANTITY REQUIRED NAME OF PART PIECE NO. REF. NO. FIGURE/DRAWING NO. PART NO.	B17 will be used when listing multiple repair parts, such as those identified in drawings and technical manuals. B17 will not be used when listing raw material.
B18	Energize with ship's power and accomplish operational testing of the equipment installed in 3.__ to ensure equipment functions to designed sequence of operation, in accordance with each manufacturer's instruction supplied with equipment.	
B19a	Accomplish an operational test of __ in accordance with 2.__.	
B19b	Accomplish the requirements of 2.__ for each __.	
B19c	Accomplish an operational test of the new equipment installed in 3.__ through each phase of operation for __ continuous hours, using each manufacturer's instruction for guidance, and the following:	B19d must be a subparagraph to B19c.
B19d	Verify conformance and operational capability in accordance with manufacturer specification.	

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Code	Text	Notes
B20	Ensure the estimated dockside delivery date of the __ is __ days after start of availability.	This segment must always be used on programmed turnaround work items. Calendar days are derived by comparison between equipment turnaround schedule and ROH date set by TYCOM.
B21a	Accomplish the requirements of 2.__.	
B21b	Accomplish the requirements of 2.__ through 2.__, using 2.__ for guidance.	Phrase B21b is intended for, but not limited to, use when accomplishing ShipAlts.
B21c	Accomplish the requirements of Test Note __ of 2.__.	An (I), (V), (Q), (IG), (VG), or (QG) is required for testing requirements.
B22a	Remove equipment listed in 1.3, using 2.__ for guidance.	
B22b	Remove equipment listed in 1.3 in accordance with 2.__.	
B22c	Remove equipment listed in 1.3.__ through 1.3.__, using 2.__ for guidance.	
B22d	Remove equipment listed in 1.3.__ through 1.3.__ in accordance with 2.__.	
B22e	Remove equipment listed in 1.3.__, using 2.__ for guidance.	
B22f	Remove equipment listed in 1.3.__ in accordance with 2.__.	
B22g	Install equipment listed in 1.3.__ in accordance with 2.__.	
B23	Remove and dispose of each system fluid from the equipment listed in __.	
B24	Obtain the services of a __ engineer to provide engineering assistance to __.	
B25	Scrape and spot-in each sealing surface to obtain a 360-degree continuous __ percent evenly distributed contact with no leakage path extending from the pressure boundary to the atmospheric boundary.	
B26a	Remove existing and install ***each*** new flexible hose assembly.	B26b – B26e must be subparagraphs to B26a. For reference use S6340-AE-TED-010, Technical Manual for Piping Devices and Flexible Hose Assemblies.
B26b	Template exact size, configuration, and location from each existing shipboard condition.	
B26c	Ensure each new hose assembly is in accordance with 2.__.	An (I)(G) is required for testing flex hoses.
B26d	Accomplish the requirements of Chapter __ of 2.__.	
B26e	Install a new CRES identification tag on each flexible hose assembly engraved in accordance with Chapter __ of 2.__.	
B26f	Install each new hose assembly in accordance with Chapter __ of 2.__.	B26g must be a subparagraph to B26f. Use when new fittings are unavailable.
B26g	Use each existing flexible hose end fitting where identified acceptable after inspection in accordance with 2.__.	B26h must be a subparagraph to B26g. Use when new fittings are unavailable.
B26h	Submit one legible copy, in approved transferrable media, of a report listing the identification tag test data for each hose assembly tested to the SUPERVISOR.	

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Code	Text	Notes
B27	Install each new bulkhead and deck sleeve in accordance with 2.__.	For reference, use 803-1385866, Penetration Bulkhead and Deck
B28a	Provide __ mandays of labor and __ dollars of material to accomplish work not previously identified in the Work Item, as directed by the SUPERVISOR. If the total costs are less than the authorized manday and dollar amounts, remaining funds will be subject to recoupment. The contractor is not authorized to exceed these limits.	Dollar amounts must be written with a comma, e.g., 5,000.
B28b	Provide __ mandays of labor and __ dollars of material to accomplish certifications ("Safe for Workers" and/or "Safe for Hot Work") of adjacent tanks, spaces, and piping systems when directed by the SUPERVISOR. If the total costs are less than the authorized manday and dollar amounts, remaining funds will be subject to recoupment. The contractor is not authorized to exceed these limits.	Use for Gas Free Certifications of adjacent tanks or spaces when location of requires hot work cannot be determined until completion of preliminary air test and visual inspection. Do not use if adjacent tanks or spaces or piping systems are identified in 1.2.
B29	Install each flush insert in way of each removal, using new material of same type and thickness as adjacent structure.	
B30a	Provide __ dollars of material for the cost of each new part, as directed by the SUPERVISOR. If the total cost is less than the authorized dollar amount, each remaining fund will be subject to recoupment. The contractor is not authorized to exceed these limits.	B30a and B30b is intended for, but not limited to, use as a subparagraph to A13a, A16, A36, and A75.
B30b	Submit one legible copy, in hard copy or approved transferrable media, of a list of each new part installed, excluding each part specifically listed to be removed in this work item or invoked ***NAVSEA*** Standard Item, in place of those identified to be missing or defective, with each documenting invoice or other substantiating data, to the SUPERVISOR.	
B31	Accomplish additional repair to each tank ***located*** in 1.2, using the unused balance of each tank repair listed in __ through __ when authorized by the SUPERVISOR.	
B32a	Accomplish the requirements of Contract Line Item Number (CLIN) __ (__EA) for the equipment listed in 1.3.__.	Fill in number of times CLIN is needed. Use B33a for equipment. Use B33b when location and identification are both needed.
B32b	Accomplish the requirements of Contract Line Item Number (CLIN) __ (__ EA) for the __ listed in 1.3.__, ***located*** in 1.2.__.	
B32c	Accomplish the requirements of Contract Line Item Number (CLIN) __ (__ EA) for __.	
B32d	Accomplish the requirements of Contract Line Item Number (CLIN) __ (__ EA).	

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Code	Text	Notes
B33a	Submit one legible copy, in hard copy or approved transferrable media, of a report listing each result of each requirement of __ to the SURFMEPP Systems Engineer listed in __ via the SUPERVISOR.	For SURFMEPP use, provide engineering data to update required CMP task records.
B33b	SURFMEPP Systems Engineering address:	
B33c	SURFMEPP Systems Engineering C230 Norfolk Naval Ship Yard, Building M-22 Portsmouth, VA 23709-5000 (757) 967-3454 Email: SURFMEPP.systemsengineering@navy.mil	
B34a	Accomplish a pre-repair unobstructed flow test for each deck drain located in 1.2, ***using 2._ for guidance.***	B8a must be a subparagraph to B34a. Pre-repair unobstructed flow test.
B34b	Accomplish a post-repair unobstructed flow test for each deck drain located in 1.2, ***using 2._ for guidance.*** Allowable obstruction: None.	Post-repair unobstructed flow test.
B35a	Provide the service of an authorized original equipment manufacturer (OEM) service provider for removal, inspection, ***repair***, installation, testing and provide each special tool and drawing for each equipment listed in 1.3, and located in 1.2.	Care must be taken when deciding to use this ***NAVSEA*** standard phraseology. Project Teams must take into consideration the complexity of systems being worked on, the extent of the repairs to that system and severity or impact of poor maintenance outcomes, before electing to use this ***NAVSEA*** standard phraseology. It is desirable to place the responsibility for bringing the right talent and tools together for work completion on the Lead Maintenance Activity (LMA). Project Teams must make a mindful decision to direct the use of an authorized original equipment manufacturer (OEM) service provider.
B35b	***Provide OEM (technical documentation, special tools and/or equipment) to the government for the duration of the maintenance availability.***	
B35c	***Submit one legible copy, in approved transferrable media, of the name and each qualification of the Technical Representative to the SUPERVISOR for approval a minimum of 15 days prior to commencement of work.***	***Planners determine which item(s) inside parenthesis are included in the phrase, based on RMC needs. This phrase is invoked when the government does not have the technical documentation, special tools and/or equipment to provide proper oversight of the production work. This is not used to hire the OEM to provide government oversight, only for the OEM to provide the necessary materials to the government. Use B35c when B35a or B35b is invoked.***

SECTION C This section of ***NAVSEA*** Standard Phraseology is for use in piping disciplines.

Code	Text	Notes
C1	Hydrostatically test __, using __ at __ PSIG for a minimum of __ minutes. Allowable leakage: None.	***Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
C2	Install new each locking device on each valve listed in __ in accordance with 2.__.	Use ASTM F993, or 810-5596087, SUPSHIP Portsmouth Standard Drawing Valve Locking Device (For Cable Locking Devices, Butterfly Valves, and Locked Position Indicators).
C3	Restore each piping flange mating surface exposed by disassembly of piping system. Repair by removing each high spot, burr, abrasion, and foreign matter, where removal can be accomplished by a hand tool. Maintain phonographic finish on each flange that has it.	
C4a	Ensure copper-nickel piping is MIL-T-16420, Type __, Class __, __-inch wall thickness.	
C4b	Ensure the carbon steel piping is MIL-P-24691.	
C4c	Ensure the copper piping is MIL-T-24107, __-inch wall thickness.	
C5	Purge, evacuate, and dehydrate __ in accordance with 2.__. Charge with refrigerant in accordance with 2.__.	
C6	NNSY Standard Drawing, Std Pipe Hangers Fabrication Dets & Instl Instr (Non-Nuc Constr)	For use with 810-4714432, for piping hangers.
C7	Empty and clean __, including piping associated with this Work Item.	
C8a	Align the piping to each __. Piping must be supported independently and must not impose a strain. Accomplishment of alignment by adjustment of the first adjacent hanger is to be considered within the scope of the work.	
C8b	Align the piping to each __. Piping must be supported independently and must not impose a strain on the equipment. Accomplishment of alignment by adjustment of the first adjacent hanger is to be considered within the scope of the work.	
C9a	Install each new hanger on new piping in accordance with 2.__.	For reference use 804-1385781, Hangers, Pipe, for Surface Ships temperature to 425 degrees F.
C9b	Install each new hanger to support the piping and prevent vibration in accordance with 2.__.	
C10	Accomplish each test in accordance with General Notes __ of 2.__.	
C11a	MIL-STD-777 __, Change __, Schedule of Piping, Valves, Fittings, and Associated Piping Components for Naval Surface Ships	Insert applicable revision and change designators.
C11b	802-5959353 Rev __, Military Standard 777D Modified for DDG 51 Class Schedule of Piping, Valves, Fittings, and Associated Piping Components	Insert applicable revision and change designators.

Code	Text	Notes
C12	Each new material must conform to 2.__, including Category and Group __.	For reference, use MIL-STD-777, Schedule of Piping, Valves, Fittings, and Associated Piping Components (C11a). For reference use 802-5959353, MIL-STD 777D Modified for DDG-51 Class, Schedule of Piping, Valves, Fittings, and Associated Piping Components (C11b).
C13	Install each valve, installing new each gasket conforming to __.	Allows the planner use of other NAVSEA-Approved gaskets and fasteners not covered in MIL-STD-777. For Butterfly valves installed in Firemain and Saltwater systems, use gasket material conforming to MIL-DTL-24696, TYPE II (For DDG-51 Class Only).
C14	Install each valve, installing new each gasket conforming to 2.__, including Category and Group __.	For reference, use MIL-STD-777, Schedule of Piping, Valves, Fittings, and Associated Piping Components (C11a). For reference use 802-5959353, MIL-STD 777D Modified for DDG-51 Class, Schedule of Piping, Valves, Fittings, and Associated Piping Components (C11b).
C15	Accomplish an operational test of the new and disturbed piping at __ PSIG. Allowable external leakage: None.	***Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
C16a	Accomplish an operational test on each newly installed valve at __ PSIG. Allowable sticking, binding or leakage: None.	***Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
C16b	Cycle each valve from full closed to full open to full close 4 times. Allowable sticking, binding or leakage: None.	
C17a	Measure and record alignment of each expansion joint piping flange in accordance with Paragraphs 505-3.3.1 through 3.3.6.5 of 2.__.	For reference, use S9086-RK-STM-010/CH-505, Piping Systems.
C17b	Submit one legible copy, in hard copy or approved transferrable media, of a report listing each measurement taken to the SUPERVISOR.	
C18a	Nitrogen pressure test each brazed and mechanical joint at __ PSIG for a minimum of 15 minutes. Allowable leakage: None.	***Planner to insert appropriate unit of measurement, i.e., psig, BAR, etc.***
C18b	Inspect each brazed and mechanical joint, using a soap bubble method. Allowable leakage: None.	
C19a	Machine each seat and disc to remove hardfacing.	
C19b	Weld build-up each seat and disc.	
C19c	Accomplish the requirements of 009-012 of 2.1, including Table One, Column C, Lines One through 9.	
C19d	Machine each seat and disc to __.	
C19e	Accomplish nondestructive testing in accordance with Line __.	
C20a	Machine each seal ring seating area to remove stainless steel inlay.	
C20b	Weld build-up each seal ring seating area.	

Code	Text	Notes
C20c	Accomplish the requirements of 009-012 of 2.1, including Table One, Column H, Lines One through 9.	
C20d	Machine each seal ring seating area to __.	
C20e	Accomplish nondestructive testing in accordance with Line __.	
C21a	Install each new __ valve in place of those removed in 3.__. Each new material must conform to 2.__, including Category and Group __.	For reference, use MIL-STD-777, Schedule of Piping, Valves, Fittings, and Associated Piping Components (C11a). For reference use 802-5959353, MIL-STD 777D Modified for DDG-51 Class, Schedule of Piping, Valves, Fittings, and Associated Piping Components (C11b).
C21b	Shop test and set each relief valve prior to installation.	
C21c	Ensure the test medium is __.	
C21d	Ensure the seat tightness is __.	
C21e	Ensure lifting pressure is __.	
C21f	Install each wire and leadlock seal and attach a metal tag to each valve stamped with the following information after setting each relief valve: Ship name and hull number Valve number or identification Date valve tested and set Name of repair facility	

***NAVSEA* STANDARD PHRASEOLOGY**

SECTION DThis section of ***NAVSEA*** Standard Phraseology is for use in structural disciplines.

Code	Text	Notes
D1a	Chip and grind each surface flush in way of repair.	
D1b	Chip and grind each surface flush in way of __.	
D2	Remove existing and install new each watertight door and hatch listed in __.	
D3a	Clean each tank listed in __ free of debris and foreign matter.	
D3b	Inspect each tank for cleanliness prior to final closing. Allowable foreign matter or debris: None.	
D4	Remove existing and install new each watertight hatch and coaming listed in __.	
D5	Apply each marking using each applicable color from the following list: Miscellaneous, Gloss, Bone White, Color No. 17886 of 2.__, MIL-PRF-24635 Brilliant Yellow, Color of 2.__, MIL-PRF-24635 Red, Gloss, OSHA Safety Red/DoT Highway Red, Color No. 11105 of 2.__, MIL-PRF-24635 Green, Gloss, Deep Green, Color No. 14062 of 2.__, MIL-PRF-24635 Miscellaneous, Gloss, OHSA Black, ANA 515, 622, Color No. 17038 of 2.__, MIL-PRF-24635 Blue, Gloss, Light Blue, Color No. 15200 of 2.__, MIL-PRF-24635	Utilize for compartment markings. For reference use SAE-AMS-STD-595, Colors.
D6	Slush each new wire rope with new grease conforming to MIL-PRF-18458.	
D7a	Contact the SUPERVISOR to determine color, style, and pattern of each habitability item.	
D7b	Provide each sample for color, style, and pattern selection.	
D8	Apply 2 layers of insulation tape, to a total minimum thickness of 17 mils, conforming to MIL-I-24391 to each faying surface of dissimilar metal.	
D9	Remove each unused clip, hanger, electrical button, and stud from overhead, deck and each bulkhead.	
D10	Adjust each hinge, latch, and safety release, installing each CRES shim to ensure an airtight seal for each door.	
D11a	Accomplish a visual inspection of each __ listed in 1.3.__ for structural integrity, deterioration, pitting, each crack, and area of damage or distortion in each location ***located*** in 1.2.__.	
D11b	Accomplish a visual inspection of each tank ***located*** in 1.2 for existing preservation coating, structural integrity, deterioration, pitting, each crack, and area of damage or distortion, including each sounding tube, tank vent, overflow, piping, structural member, and manhole cover.	

***NAVSEA* STANDARD PHRASEOLOGY**

Code	Text	Notes
D12	Shop test each new wire rope, including attached end fitting, to 40 percent of the breaking strength of the wire rope.	
D13	Remove existing and install each new decorative sheathing system on each inside boundary bulkhead in accordance with 2.__, and details in 2.__, conforming to MIL-L-24518.	
D14a	Install a temporary wooden closure over each opening caused by each removal.	
D14b	Remove each temporary closure upon completion of work.	
D15	Adjust each dogging mechanism for unobstructed operation and to obtain 100 percent centered contact with the imprint of chalk in the center three-fifths of the gasket.	
D16	Vee-out and weld a total of __ of deteriorated and damaged weld. Each area of repair may include deck, bulkhead, shell plating, and overhead of each space located in 1.2	Planner to insert appropriate unit of measurement, i.e. feet, foot, millimeters and etc.
D17	Preserve each interior surface of each __ with rust preventative compound conforming to MIL-PRF-16173, Class I or II, Grade 1 or 3, by completely filling and draining. Ventilate to remove solvent vapor.	
D18	Fair-in existing plating adjoining each new insert in accordance with 2.__.	For reference use MIL-STD-1689, Fabrication, Welding, and Inspection of Ship's Structure.
D19a	Ensure each change and alternate route is made to enable ventilation run to be completed and to suit each existing shipboard condition when each dimension used on 2.__ cannot be complied with.	
D19b	Relocate each light, fixture, equipment, pipe, cable, and wire in way of new ventilation installation.	D19b is optional for those activities who can establish that the contractor can shipcheck the ship being repaired prior to bid.
D19c	Template new ventilation to suit existing shipboard condition and offset around each interference not feasible to relocate.	
D20	Accomplish testing and balancing for each new system installed, modified, and disturbed portion of each existing system, to ensure minimum delivery of each designed air quantity in accordance with 2.__.	D20 is intended for, but not limited to, use when accomplishing ShipAlts. For reference use 512-7624117, Instructions for Ventilation Testing and Balancing
D21	Template exact size, configuration, and location from ***each*** existing shipboard ***condition***.	
D22	Accomplish a total of __ EA G67 sample in way of plating being removed as designated by the SUPERVISOR. Turnover each prepared sample to the SUPERVISOR for testing.	

***NAVSEA* STANDARD PHRASEOLOGY**

SECTION E This section of ***NAVSEA*** Standard Phraseology is for use in mechanical disciplines.

Code	Text	Notes
E1a	Disassemble each __, using 2.__ for guidance.	
E1b	Disassemble each __ in accordance with 2.__.	
E2	Protect, blank, wrap, cover, or mask equipment and each opening to preclude damage and prevent entry of contaminants into each gas turbine engine to include foreign object debris (FOD) screen, uptake space, engine room, machinery, equipment, valve, vent system, and opening prior to cleaning operation.	
E3a	Measure and record each serial number, size and clearance of each __, using 2.__ for guidance.	Use as a subparagraph when disassembly is invoked.
E3b	Measure and record each serial number, size and clearance of each __ in accordance with 2.__.	
E3c	Include each size, clearance, fit and finish for each wearing part, bearing surface, thrust and journal bearing, seal and packing area, and physical condition of each part not specified for renewal.	Use for noncritical equipment (General use).
E3d	Include each size, clearance, fit, and finish for each wearing part, bearing surface, thrust and journal bearing, seal and packing area, and physical condition of each part not specified for renewal.	Use for mission critical equipment, especially Forced Draft Blowers, Main Feed Pumps, Main Propulsion Turbines, etc.
E4a	Inspect each part for wear and defect, in accordance with 2.__.	Use E4a as a subparagraph when disassembly is invoked.
E4b	Inspect each part for wear and defect, using 2.__ for guidance.	***Use E4b as a subparagraph when disassembly is invoked.***
E5	Remove test fluid and dry the __ interior and exterior surface. Allowable residual fluid: None.	
E6	Straighten each __ to within __ inch total indicator reading.	
E7	Straighten each shaft to within __ inch total indicator reading.	
E8	Straighten each operating lever, linkage, and eccentric to provide freedom of operation.	
E9	Chrome-plate each __ journal in accordance with 2.__.	For reference use DOD-STD-2182, Engineering Chromium Plating (Electrodeposited) for Repair of Shafting (Metric). For NDT Testing, use B14a-B14b.
E10a	Machine each __, using 2.__ for guidance.	
E10b	Machine each __ in accordance with 2.__.	
E11a	Machine each new undersize casing wearing ring and each new oversize impeller wearing ring to size specified in 2.__.	
E11b	Machine each new impeller wearing ring area concentric to the impeller bore within 0.001 inch total indicator reading, removing only material required to correct each out-of-round and eccentric conditions.	Use E11b-E11c for impellers without wearing rings.

Code	Text	Notes
E11c	Machine each new undersize casing wearing ring bore concentric to each casing wearing ring area to size specified in 2.__ for the each mating impeller wearing surface.	
E11d	Machine each new impeller wearing ring concentric to the impeller bore within 0.001 inch total indicator reading, removing only material required to correct each out-of-round and eccentric condition.	Use E11d-E11e for impellers with oversized wearing rings.
E11e	Machine each new casing wearing ring bore concentric to each casing wearing ring area to size specified in 2.__ for each mating impeller wearing ring surface.	
E12a	Machine each new impeller wearing ring, using 2.__ for guidance.	
E12b	Machine each new impeller wearing ring in accordance with 2.__.	
E13a	Machine each new casing wearing ring, using 2.__ for guidance.	
E13b	Machine each new casing wearing ring in accordance with 2.__.	
E14	Fit each wearing ring to each corresponding groove in upper and lower casing.	
E15	Inspect wearing ring fit. Each ring must not bind and clearance must be in accordance with 2.__.	
E16	Stone each face of each thrust collar to remove each high spot.	
E17	Stone each__ journal to remove each high spot.	
E18	Stone each pinion and gear tooth to remove each high spot.	
E19a	Scrape, lap, and fit each metal-to-metal joint of each turbine packing box, turbine case, turbine case cover, nozzle, steam chest, steam strainer, and steam strainer cover.	When E19 a-e are used, E21 a-c must always be a subparagraph. Specify labyrinth or carbon packing.
E19b	Lap and fit each metal-to-metal joint of each __.	
E19c	Hand fit and restore the contact between each exposed metal-to-metal, steamtight joint.	
E19d	Machine, hand fit, and restore the contact between each exposed metal-to-metal, steamtight joint.	
E19e	Machine, hand fit, and restore the contact between each exposed metal-to-metal and gasket seating surface, using 2.__ for guidance.	
E20a	Inspect contact using blueing transfer method. Contact must be percent, with a continuous band of contact __ wide between each inner bolting perimeter and each sealing surface pressure source.	
E20b	Inspect contact using blueing transfer method. Contact must be a minimum of percent of total surface area, including a minimum of __ percent continuous contact across each pressure sealing surface.	
E20c	Inspect contact using blueing transfer method. Contact must be a minimum of percent of total surface area, including a continuous band with a minimum width of __ percent of the distance from the pressure source to the inner bolting perimeter.	

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Code	Text	Notes
E21	Inspect each assembled pump rotating assembly for concentricity to the shaft axis. Eccentricity at each bearing shaft sleeve and wearing ring mating area must not exceed __ inch total indicator reading.	For pumps with impeller wearing rings.
E22a	Restore each mating surface exposed by __ removal. Repair by removing each high spot, burr, abrasion, and foreign matter, where removal can be accomplished by hand tool.	Use for minor repairs.
E22b	Remove each high spot, burr, abrasion, nick, corrosion, gasket material, and foreign matter from each exposed flange and mating surface.	
E22c	Remove each burr and high spot from each exposed sliding surface, screw thread, key, and keyway.	
E23a	Assemble each __, using 2.__ for guidance.	
E23b	Assemble each __ in accordance with 2.__.	
E23c	Assemble, install, align, adjust, and connect __, fit and install each new __and each new part in accordance with 2.__:	
E24a	Measure and record each final size and clearance, using 2.__ for guidance.	
E24b	Measure and record each final size and clearance in accordance with 2.__.	
E25a	Adjust and set the height of each worm gear, using 2.__ for guidance.	
E25b	Adjust and set the height of each worm gear in accordance with 2.__.	
E25c	Verify mesh alignment and contact, using blueing method.	
E26	Ensure each thrust face is square with shaft axis to within __ inch total indicator reading.	
E27	Remove each existing and install new gasket, o-ring, pin, key, stud, bolt, and nut. Material must conform to specifications in __ of 2.__.	For use of pre-established parts list from a technical manual or other reference.
E28a	Manually rotate each shaft prior to installation of pump shaft packing. Rubbing or binding of the rotating assembly not allowed.	
E28b	Rotate shaft by hand one complete revolution. Rubbing or binding of the rotating assembly is not allowed.	
E29	Apply anti-seize compound conforming to MIL-PRF-907 on each high temperature fastener.	Use E29 as a subparagraph when securing details are invoked.
E30a	Apply triple boiled linseed oil conforming to __, with a viscosity of Z-8 or Z-9 on each metal-to-metal steam joint.	For turbine sealing surfaces.
E30b	Apply high temperature sealing compound conforming to MIL-S-15204, Type C, on each __.	For turbine sealing surfaces.
E31	Apply sealant conforming to MIL-S-45180, Type 2, on each metal-to-metal joint of each __.	For reduction gear, bearing and coupling covers.
E32	Remove existing and install new each steam piping joint gasket, conforming to Graph Lock 3125SS/Graftech sheet gasket.	For steam and steam drains (50-100 PSIG - 425 Degrees Fahrenheit).
E33	Remove existing and install each new steam piping joint gasket, conforming to MIL-G-24716.	For steam and steam drains 600-1500 PSIG, 1000 Degrees Fahrenheit (Maximum).

Code	Text	Notes
E34	Remove existing and install each new steam piping joint gasket, conforming to MIL-G-24716.	For steam and steam drains 150-1500 PSIG, 775 Degrees Fahrenheit (Maximum).
E35	Remove existing and install each new feedwater piping joint gasket, conforming to MIL-G-24716.	For propulsion plant saturated feed system 600-2050 PSIG, 300 Degrees Fahrenheit (Maximum).
E36	Remove existing and install each new fresh water piping joint gasket, conforming to__, __, __.	For Fresh Water, Chilled Water, Feedwater, and Condensate 100 PSIG, 250 Degrees Fahrenheit (Maximum) i.e., HH-P-151, CLASS I, Cloth Inserted Rubber, MIL-PRF-1149, TYPE II, CLASS I, Synthetic Rubber
E37	Remove existing and install each new salt water piping joint gasket, conforming to HH-P-151, Class I, cloth inserted rubber, or MIL-PRF-1149, Type II, Class I, synthetic rubber.	For Salt Water, Including suction sea chest steam out connections, 50-250 PSIG, 150 Degrees Fahrenheit (Maximum).
E38	Remove existing and install each new salt water piping joint gasket, conforming to MIL-PRF-1149, Type I, Class I, synthetic rubber.	For Salt Water, 50-250 PSIG, 150 Degrees Fahrenheit (Maximum).
E39	Remove existing and install each new fuel oil piping joint gasket, conforming to MIL-G-24716.	For Fuel Oil 600-1200 PSIG, 775 Degrees Fahrenheit (Maximum).
E40a	Remove existing and install each new fuel oil piping joint gasket, conforming to MIL-G-24716.	For Diesel Fuel Oil 200 PSIG.
E40b	Remove each existing and install each new fuel oil piping joint gasket, conforming to MIL-G-24716.	For Gas Turbine Powered Ships Fuel Oil 200 PSIG, 150 Degrees Fahrenheit (Maximum).
E41	Remove existing and install each new lubricating oil piping joint gasket, conforming to __, __, __.	For Lubricating Oil, 50 PSIG, 180 Degrees Fahrenheit (Maximum) i.e., HH P 151, CLASS I, Cloth Inserted Rubber, MIL PRF 1149, TYPE II, CLASS I, Synthetic Rubber.
E42	Remove existing and install each new lubricating oil piping joint gasket, conforming to MIL-G-24716.	For Lubricating Oil 150 PSIG, 250 Degrees Fahrenheit (Maximum).
E43	Deleted	
E44	Deleted	
E45	Install each new aluminized cloth spray shield on pipe and valve flange and component in accordance with ASTM F 1138.	
E46	Fill each __ to the full mark with new __ conforming to __.	
E47	Allowable leakage at each new and disturbed joint: None.	
E48	Remove existing and install each new gasket, conforming to __, __, __.	Nickel Copper Aluminum (K-MONEL) bolting of sea valves and pipe joints - must be used on Inboard and Outboard flanges and Bonnet joints where integrity of the hull against the sea is concerned; Also where valves are not readily accessible for inspection or maintenance, i.e., MIL-DTL-24696, Compressed Asbestos. MIL-G-24716, Gasket, Metallic-Flexible Graphite, Spiral Wound or ASME B16.20. Self-locking nuts must not be used on boiler blowdown and discharge piping.

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Code	Text	Notes
E49	Weld build-up each cracked, worn, and eroded area of __ and machine to each dimension and contour in accordance with 2.__.	Invoke applicable 009-012 requirements.
E50	Handwork and skim cut each machined, sealing, aligning, mating, and gasket surface.	
E51a	Install and fit each new chock and shim conforming to __ to accomplish alignment.	Specify type of material and MIL-SPEC.
E51b	Install and fit each new shim conforming to __ to accomplish alignment.	For pumps and turbines, shims must conform to SAE-AMS- QQ-S-763, CRES, Grade 304.
E52a	Drill and ream each equipment support foot and foundation. Fit and install each new tapered dowel.	
E52b	Drill and ream each equipment support foot and foundations. Fit and install new __ each tapered dowel in each unit to retain unit alignment.	Specify type of material.
E53a	Install new nylon filter bags in each strainer. Filter bags must be of continuous filament nylon cloth, scoured finish, 80 by 80 thread, 75 to 100 micron fiber thickness, 125 to 200 micron holes in cloth.	To minimize the possibility of strainer bag rupture the use of nylon vice muslin filter bags (because of their greater strength) is recommended.
E53b	Install new each cotton muslin filter bag with material conforming to CCC-C-432, Type 7, Class One, in each strainer.	For use in lube oil systems where rupture of filter bag is not probable.
E54	Chase and tap each exposed threaded area.	
E55a	Install new each coupling assembly and key on each __.	
E55b	Bore each coupling hub concentric and to size of shaft diameter within 0.001 inch total indicator reading and perpendicular to the face within 0.001 inch.	
E55c	Cut and fit each new coupling, keyway to each mating shaft and coupling hub.	
E55d	Align each coupling concentric to within __ inch total indicator reading and parallel to within __ inch gaged at the major diameter of the coupling face.	
E56	Inspect each bearing stave prior to installation aboard ship by probing with a pen knife or similar device at the rubber-metal interface around the total periphery of the stave to locate any unbonding of rubber from metal. A total cumulative length of unbonding greater than one inch, or any unbonding allowing the knife blade to be inserted deeper than one-fourth inch, must be cause for rejecting the stave.	
E57	Measure crankshaft deflection in accordance with 2.__.	
E58	Machine each brake drum a minimum amount to remove scoring, pitting, and eccentricity. Each drum must be concentric to the drum bore within inch total indicator reading.	
E59	Clean each sump free of foreign material.	
E60	Hone each __ to remove glazing, scoring, and ridging.	
E61a	Blast clean each __ with non-erosive cleaning agent.	Use the following when cleaning steam turbine internals i.e., Rotors, Blading, Casing internal surfaces.

Code	Text	Notes
E61b	Ensure cleaning agent is aluminum oxide with a particle size no coarser than 220 grit. Other cleaning agents such as glass beads, ash, and walnut shells are acceptable provided that the resultant finish is equivalent to that provided by 220 grit or finer aluminum oxide. The use of sand is prohibited.	
E61c	Protect each machined surface against the action of the cleaning agent.	
E62	Measure runout of each __shaft using dial indicator.	
E63a	Assemble each pump rotating assembly, using 2.__ for guidance.	
E63b	Assemble each pump rotating assembly, in accordance with 2.__.	
E64	Clear each gage line and fitting free of foreign matter and obstructions.	
E65	Polish each __ to a __ root mean square average for roughness.	
E66	Align each motor and compressor pulley to within __ inch parallel alignment. Each belt must depress __ inch at a point midway between each pulley.	
E67a	Inert system with a positive pressure of 2 PSIG, using dry, oil-free nitrogen and a nitrogen regulator.	
E67b	Install relief valve downstream of nitrogen regulator and set at 5 PSIG.	
E68	Drill and ream each equipment support foot and foundation. Fit and install each new tapered dowel in each unit. Each dowel must be located in accessible location for ease of removal that will retain unit alignment.	Specify type of material.
E69	Clear and clean each pocket and passage free of obstruction and foreign matter.	
E70	Test each remote valve operator assembly for ease of operation and alignment by opening and closing each valve from its remote operating station through 3 complete cycles. Allowable binding: None.	
E71	Inspect contact between __ and __ using the blueing transfer method. Contact must be a minimum of __ percent, evenly distributed over the contact surfaces.	For use on non-pressure boundary applications such as coupling taper fits, spotting in foundation liners or other general applications where blueing is appropriate.

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SECTION F This section of ***NAVSEA*** Standard Phraseology is for use in electronic and electrical disciplines.

Code	Text	Notes
F1	Disconnect mechanically and remove equipment listed in 1.3.__.	
F2	Matchmark, identify, and retain __.	
F3	Accomplish an operational test of equipment and each circuit.	
F4a	Accomplish Swept Voltage Standing Wave Ratio (VSWR) test on __ in accordance with Paragraph 5-2.11 of 2.__. Test must be accomplished over the frequency range of equipment being tested.	For reference in F4a and F5, Use SE000-01-IMB-010, Navy Installation and Maintenance Book (NIMB), Section IX, Installation Standards (Source CD: N0002400003).
F4b	Use standard VSWR reference loads at several points (i.e., 1.1:1, 1.25:1, 1.5:1, 2:1 and 3:1) to establish reference lines from lower to upper frequency limits.	
F5	Accomplish Insertion Loss test on __ in accordance with Paragraph 5-2.11 of 2.__. Tests must be accomplished over frequency range of each piece of equipment being tested.	
F6	Accomplish Time Domain Reflectometer (TDR) test on __ in accordance with Paragraph 5-7 of 2.__. Terminate each coaxial cable within its characteristic impedance and coefficient (RHO) control at maximum sensitivity. Record results on an X-Y recorder.	For reference use paragraph 3.5 of 0967-LP-177-3040, Shipboard Antenna Systems; Vol 4 or latest ref.
F7	Visually inspect each component prior to cleaning to detect evidence of casualties or deteriorating conditions that may not be apparent after cleaning.	
F8	Inspect and test each component part and circuitry for shorts, opens, and grounds and determine missing and defective component parts and circuitry in accordance with 2.__.	
F9	Remove each existing and install each new wire and component part, using 2.__ for guidance.	
F10	Install Field Change __. Accomplish the requirements of 2.__.	
F11	Install equipment listed in 1.3.__, using hardware retained in 3.__, in accordance with 2.__.	Use for replace with new, install or install of removed equipment. Hook-up data covered by 009-073.

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Code	Text	Notes
F12a	Bond and ground equipment in accordance with 2.__. ***Each*** grounding strap must be CRES 316L for topside equipment.	For reference use MIL-STD-1310, Shipboard Bonding, Grounding, and Other Techniques for Electromagnetic Compatibility and Safety. Bond Strap Fabrication and Installation must be in accordance with sections 7 and 8 of SE000-01-IMB- 010, Navy Installation and Maintenance Book (NIMB), Section VII, Industrial Electromagnetic Compatibility (IEMC) Work Process Instructions (Source CD N0002400003), Industrial Electromagnetic Compatibility (IEMC) Work Process Instructions.
F12b	Bond and ground equipment in accordance with 2.__ and 2.__.	For reference use (10001) OD 32382, Grounding and Bonding, Equipment Encl. Chassis and Cases, Design and Installation.
F13	Ensure acceptable criteria for equipment to hull ground via bond or ground strap is one-tenth ohm maximum.	
F14	Remove existing and install new each lug conforming to MIL-T-16366	
F15	Remove existing and install new each conductor identification sleeving conforming to SAE AS23053, Class I, white, marked with indelible ink.	
F16	Maintain temporary pressurization of __ in accordance with Paragraph 5-2.7.1 of 2.__ upon completion of Insertion Loss Test.	For reference in F16-F18, Use SE000-01-IMB-010, Navy Installation and Maintenance Book (NIMB), Section IX, Installation Standards (Source CD: N0002400003).
F17	Purge and pressurize __ in accordance with Paragraph 5-1.14 of 2.__ upon completion of installation.	
F18	Blank __ during unattended periods and maintain pressurization in accordance with Paragraph 5-2.6.6 of 2.__.	
F19a	Accomplish each Performance Test of 2.__. Align and adjust within each tolerance specified therein.	Use F19a-F19c and F20a-F20b for post-repair test.
F19b	Record each reading on each performance summary sheet.	
F19c	Submit one legible copy, in hard copy or approved transferrable media, of completed summary sheets to the SUPERVISOR.	
F20a	Accomplish an operational test of ship's service dial telephone installation. Accomplish adjustments to verify operational performance in accordance with 2.__.	
F20b	Verify each circuit for audio output, clarity of voice transmission, and correct phone number.	
F21	Measure insulation resistance to ground for each stationary field winding and rotating field winding using a 500-volt direct current megger. Do not apply high voltages through solid state devices.	

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Code	Text	Notes
F22a	Accomplish each maintenance/reference standard test and record each measurement of each piece of equipment listed in 1.__ in accordance with 2.__. Calibrate, test, and adjust each piece of equipment and verify the performance of the equipment is within tolerance, using regulated power within the limits specified in 2.__.	
F22b	Install and connect equipment aboard ship prior to maintenance/reference standards test.	
F23	Remove each unused foundation, cable hanger, wireway, bracket, and stud.	Use D1a as a subparagraph to F23
F24	Install new each foundation and stud for __. Template from new equipment. Install equipment on new foundation.	
F25	Silver plate __ in accordance with ASTM B 700.	