

TECHNICAL SPECIFICATION

TITLE: SHIP ALTERATION RECORD (SAR) PREPARATION

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SHIP ALTERATION RECORD PREPARATION

1. SCOPE. This specification provides criteria for the uniform development, processing and maintenance of a Ship Alteration Record.

1.1 GENERAL. The SAR is the official record defining the approved changes to be made to a ship. The SAR is based upon the Justification/Cost Form (JCF) providing greater detail, a more complete Alteration Material List (AML), Integrated Logistic Support (ILS) documentation impacts and equipment removals. The SAR is composed of the data defined in sections 3.4.1 through 3.4.23 below. This record requires approval by the organization designated as the SAR Approver in the JCF (See Tech Spec 9090-210B section 2.27). In accordance with the FMP milestones, the SAR shall be completed no later than A-12 for the availability of the first intended install and the SAR Approver shall approve the SAR no later than A-11. The SAR shall be completed in Microsoft Word © using the Template found on the FMP Website (www.FMP.NAVY.MIL).

1.2 APPLICABILITY. This specification is applicable to surface ships, surface craft, and submarine SARs and shall be utilized by all Planning Yards/Design Agents (hereafter referred to as "Planning Yards") and NAVSEA/SPAWAR/NAVAIR etc. personnel for preparing, processing and maintaining Ship Alteration Data except as noted herein (see Section 1.3).

1.3 EXCEPTIONS. This specification shall not be used for preparation of the following:

- a. SARs under the cognizance of the Deputy Commander of Nuclear Propulsion, NAVSEA 08.
- b. Strategic Systems Program Alterations (SPALTS) issued for the Director, Strategic System Programs (DIRSSP).
- c. Aircraft launch and recovery equipment changes under the cognizance of the Commander, Naval Air Systems Command.
- d. Changes to the internals of equipments that do not impact the equipment interface with the ship. These include Machinery Alterations (MACHALTs), Ordnance Alterations (ORDALTs), Field Changes, Equipment Engineering Changes (ECs), Technical Directives (TDs), and Engineering Change Proposals (ECPs).
- e. Alterations affecting configuration of hardware, software, and support equipment of the TRIDENT System under the cognizance of PMS 392. The TRIDENT System comprises OHIO Class Submarines; dedicated maintenance, training and logistic facilities; and replacement equipment pools.

2. APPLICABLE DOCUMENTS

2.1 ISSUE OF DOCUMENT. The following documents, of the issue in effect on the date of the tasking documentation, form a part of this specification to the extent specified herein.

PUBLICATIONS

MILITARY

MIL-STD-1680 - Installation Criteria for Shipboard Secure Electrical Processing Systems

DEPARTMENT OF DEFENSE

H4/H8 - Commercial and Government Entity (CAGE) Cataloging Handbook.

CHIEF OF NAVAL OPERATIONS

OPNAVINST 4790.4 - Ship's Maintenance and Material Management (3-M) Manual

OPNAVINST 5510.1 - Department of the Navy, Information Security Program

NAVAL SEA SYSTEMS COMMAND

S0924-062-0010 - SUBSAFE Manual

S9040-AA-IDX-010/SWBS 5D - Expanded Ship Work Breakdown Structure (ESWBS) for all Ships and Ship/Combat Systems

NAVSEAINST 5000.39 - Acquisition and Management of Integrated Logistic Support for Ships, Systems, and Equipment

NAVSEAINST 5510.1 – Command Headquarters Security Program Regulation

NAVSEAINST 9210.14 – Changes to Submarine Tenders and Destroyer Tenders with Nuclear Support Facilities

NAVSEAINST C9210.4 - Changes, Repairs and Maintenance to Nuclear Powered Ships

NAVSEAINST C5511.32 - Naval Nuclear Propulsion Information; Safeguarding of

NAVSEAINST 5720.3 - Review and Release of Unclassified Technical Information and Assignment and Distribution Statements for "For Official Use Only" Markings to Technical Documents

TECHNICAL SPECIFICATIONS

NAVSEA TS-9090-210B – Justification/Cost Form (JCF)

3. REQUIREMENTS

3.1 GENERAL. The Ship Alteration Record (SAR) is a collection of elements required to further define an alteration from the data used to approve the concept in the JCF (See Tech Spec 9090-210B).

3.1.1 RESTRICTIVE DATA. Individual SARs shall not reference the following:

- a. Planning Yard or other local procedures, standards or specifications.
- b. Any specific availability or overhaul.
- c. The shipyard assignment for any ship.
- d. Any miscellaneous information relating to operations or procedures peculiar to a specific shipyard or activity.
- e. Material specifications based on the material's availability in the Planning Yard's shipyard stock. Material shall be selected on the basis of its general availability, according to the best information held by the Planning Yard, to all installing activities.
- f. Specifications of commercial proprietary material unless there is no generic

equivalent. If proprietary material is required, complete identification of the product shall be provided on the Alteration Material List (AML).

g. Proprietary vendor drawings unless required as part of product identification.

h. Material part numbers or stock numbers which are peculiar to the Planning Yards stock system or other Government agencies stock system other than the National Stock System.

3.2 RESPONSIBILITIES. Any organization may prepare Ship Alteration Records as determined, tasked, and funded by the cognizant Ship Program Manager (SPM). The Data elements listed in Section 3.3 and 3.4 below list the organization intended to input the required data. The description of these organizations is listed below.

3.2.1 SAR Preparer. The SAR Preparer is the organization designated by the SPM in the JCF (See Tech Spec 9090-210B) to develop the SAR document. The SAR Preparer will normally be the Planning Yard or the PARM.

3.2.2 SAR Approver. The SAR Approver is the organization designated by the SPM in the JCF (See Tech Spec 9090-210B) to approve the SAR.

3.2.3 Participating Managers (PARMs). The PARM is responsible to program, budget and procure all Headquarters Centrally Provided Material. In addition they are responsible to maintain the Navy Data Environment-Navy Modernization (NDE-NM) Material Dictionary and coordinate with the SPM to insure the material requirements match the installation requirements.

3.2.4 PLANNING YARDS (PY). The Planning Yard for each ship class, as designated by NAVSEA SL720-AA-MAN-010/FMP, is the Engineering Design Agent for assigned specific classes of ships. Responsibilities assigned to the Planning Yard include accuracy and completeness of the SAR. Planning Yards may be tasked to approve the SARs as tasked and funded by the SPM.

3.2.5 SHIP PROGRAM MANAGER (SPM). SPMs are responsible for final NAVSEA approval of a SAR unless the approval is delegated. The SPM is also responsible for obtaining appropriate concurrence from any other activity prior to their approval.

3.3 SAR PREPARATION REQUIREMENTS

3.3.1 SECURITY CLASSIFICATION AND SPECIAL HANDLING. Security classifications and special handling marking of SARs shall be limited to "UNCLASSIFIED", "FOR OFFICIAL USE ONLY" or "NOFORN". This will be determined by the SAR preparer and if the classification is other than UNCLASSIFIED the classification will be placed in the upper right and lower left corner of all copies of the SAR.

3.4 SAR CONTENT. The SAR content shall be as specified herein. Figure 3 lists all of the fields and the activity that is designated to provide the information in each field.

3.4.1 SHIPALT IDENTIFICATION. This field is for the approved SHIPALT Identification Number. The SHIPALT Number will include the ship class, the number and the title (e.g. K, D, F). This field will be copied from the approved JCF (See Tech Spec 9090-210B Section 2.4) by the SAR Preparer.

3.4.2 REV. This field is used to show the revision of the SAR. The initial issue of the SAR shall show 00 in the revision field. Subsequent revisions shall be 01, 02 etc.

3.4.3 BRIEF. This field is a brief description of the SHIPALT. This field will be copied from the JCF (See Tech Spec 9090-210B Section 2.3) by the SAR Preparer unless otherwise directed by the SPM (Note: changes in the shipalt Brief after JCF development may make Battle Group Interoperability confirmation more difficult). This field shall be no more than 30 Characters in length in order to comply with the FMPMIS (NDE-NM) Database requirements.

3.4.4 NAVSEA/PEO LEAD TECH CODE CONCURRENCE. This field is to be filled in by the SAR Approver after obtaining the required concurrences or NA will be entered if this approval is not required.

3.4.5 ENGINEERING AGENT CONCURRENCE. This field is to be filled in by the SAR Approver after obtaining the appropriate engineering agent concurrence or NA will be entered if this approval is not required.

3.4.6 OTHER CONCURRENCE. This field is provided to enter the Name and Phone number of any other organization and POC whose concurrence is required. The field is to be filled in by the SAR Approver after obtaining the required concurrence. The activity (SPAWAR, NAVAIR, NAVSEA 08) and the POCs name with the (S) to indicate the signature is on file is required for this field. This field has two columns; the first is for the Activity of the TPOC; the second is for the Name and Phone number of the TPOC.

3.4.7 LEAD LCM (LOGISTICS). This field is to be used for entering the logistics Life-Cycle Manager for the system or equipment being installed. This field will consist of two parts: the first is for the activity of the Lead LCM (Logistics); the second is for the Name and Phone number of the POC to be entered. This field shall be copied from the JCF (See Tech Spec 9090-210B) by the SAR Preparer.

3.4.8 SAR APPROVER. The SAR Approver as designated in Tech Spec 9090-210B is the approving authority for the SAR. This field will consist of three parts; the first is for the Activity of the SAR Approver; the second is for the Name and Phone number of the TPOC ; the third is the date the SAR was approved.

3.4.9 PLANNING YARD TECHNICAL POINT OF CONTACT. The Planning Yard TPOC is the name of the person at the planning Yard with intimate knowledge of the alteration. This field is to be completed by the Planning Yard.

3.4.10 ESWBS (EXPANDED SHIP WORK BREAKDOWN STRUCTURE) NUMBER. The ESWBS fields shall indicate the ESWBS number selected from NAVSEA

S9040-AA-IDX-010/SWBS 5D, which is most closely associated with the system, component or structure being impacted by the alteration. This field is to be completed by the SAR Preparer.

3.4.11 3-M NOUN NAME. The 3-M Noun Name field shall indicate the 3-M equipment/system noun name. The equipment/system nomenclature/description shall be the same as that identified by the ESWBS number in NAVSEA S9040-AA-IDX-010/SWBS 5D. In cases where the equipment being installed or modified has a specific nomenclature (AN/SSQ-80, R-1051(F)/URR, etc.), the nomenclature shall be utilized as the 3-M Noun Name. The 3-M Noun Name is utilized by the Type Commanders (TYCOMs) as a data element entry in the TYCOM Alteration Management System (TAMS)(Applicable to SUBLANT and SUBPAC ships only) and on OPNAV Form 4790/CK (Configuration Change Notification) as required by OPNAVINST 4790.4. This field is to be completed by the SAR Preparer.

3.4.12 EIC (EQUIPMENT IDENTIFICATION CODE). The EIC field shall indicate the Equipment Identification Code of the equipment or system being installed by the SHIPALT. The number should be selected from the EIC Master Index S9040-AC-IDX-010/SHIPS, the 3-M Reference CD, the EIC Master File tape from NAVSEALOGCEN or the NAVSEALOGCEN website. The EIC is a seven-digit alpha/numeric field that is left justified and zero filled. This field is to be completed by the SAR Preparer.

3.4.13 AIT CAPABLE. This field is an indication (Y/N) of whether or not accomplishment of this alteration is within the capability of an Alteration Installation Team (AIT). If this field is marked as Yes, then the mandays shown on the cost estimate sheet (see 3.4.37) should be the installation mandays required by the AIT. This field shall be copied from the JCF (See Tech Spec 9090-210B Section 2.27) by the SAR Preparer.

3.4.14 SAFETY ALT. This checkbox is an indication (Y/N) of whether or not the change or alteration is specifically intended to correct a pre-existing safety problem or provide a safety operating or living environment. If this box is checked the Category Code (Paragraph 3.4.18) must be a 1 or 2. This field shall be copied from the JCF (See Tech Spec 9090-210B Section 2.11) by the SAR Preparer.

3.4.15 SUBSAFE IMPACT. This field is an indication (Y/N) of whether or not accomplishment of the change or alteration impacts a SUBSAFE boundary. This field shall be copied from the JCF (See Tech Spec 9090-210B Section 2.17) by the SAR Preparer.

3.4.16 ILS AFFECTED. This field is an indication (Y/N) whether or not installation of this alteration will affect Integrated Logistics Support (ILS). This will include but not be limited to any update/changes to any existing Technical Manuals, new Technical Manuals, Supply Support (e.g., INCO's, MAMs, Onboard Spares, etc.), Maintenance Index Pages (MIPs), Maintenance Requirements Cards (MRCs), Technical Repair Standards (TRSs), Class Maintenance Plans (CMPs), Intermediate Repair Standards (IRSs), any changes or additions to any existing training plan, new training plan, special tools, alignment jigs, test equipment, any changes or additions to any existing SRD's or development of new SRD's for equipment installation and certification of this alteration. This field shall be copied from the JCF (See Tech Spec 9090-210B Section 2.20) by the SAR Preparer.

3.4.17 SHIPBOARD STOWAGE AFFECTED. This field is an indication (Y/N) whether or not installation of this alteration will require any use of shipboard Stowages. This field shall be copied from the JCF (See Tech Spec 9090-210B) by the SAR Preparer.

3.4.18 CATEGORY CODE. This field lists the NDE category code for the alteration as shown below. This field shall be copied from the JCF (See Tech Spec 9090-210B Section 2.12) by the SAR Preparer.

<u>CODE</u>	<u>DESCRIPTION</u>
0	PRIORITY LEVEL NOT ESTABLISHED
1	MANDATORY AND SAFETY
2	RELIABILITY AND MAINTAINABILITY (PRIMARY)
3	PRIMARY MISSION SYSTEM MODERNIZATION
4	RELIABILITY AND MAINTAINABILITY (SEC) MISSION AREA
5	SECONDARY MISSION AREA MODERNIZATION
6	MISSION SUPPORT

3.4.19 INDUSTRIAL STOWAGE AFFECTED. This field is an indication (Y/N) whether or not installation of this alteration will require any use of industrial Stowages. This field shall be copied from the JCF (See Tech Spec 9090-210B) by the SAR Preparer.

3.4.20 TOC. This field is used to list the estimated Total Ownership Costs (TOC) for the change or alteration. This cost should be expressed in manhours and can be either positive or negative. This field shall be copied from the JCF (See Tech Spec 9090-210B Section 2.11) by the SAR Preparer.

3.4.21 TMA/TMI. This field is used to indicate (Y/N) whether or not this change or alteration is a Top Management Attention (TMA) or Top Management Issue (TMI) item. This field shall be copied from the JCF (See Tech Spec 9090-210B Section 2.11) by the SAR Preparer.

3.4.22 DESCRIPTION. The Description field shall provide a brief description of the alteration to the extent necessary to begin detailed design. The description of the alteration shall indicate the spaces, systems and equipment impacted by the alteration and the extent of the impact. The description shall specifically address equipment to be added (Government or installing activity furnished) and/or deleted and the impact (increase or decrease) on power (steam generation, electrical generation and/or distribution systems), fluids (water, hydraulic, dry air, lubricating oil, fuel oil, etc.), compressed gasses (oxygen, nitrogen, etc.), firemain, ship's structure, interior communications circuits, habitability/accommodations, stowage, heating, ventilation and air conditioning. The description shall also specifically address, by space name and compartment number, any impact (increase or decrease) in weight and heat dissipation. Alterations impacting SUBSAFE systems or equipment as defined in NAVSEA 0924-062-0010 (SUBSAFE Manual) shall include in the description field a statement identifying the systems and equipment as SUBSAFE. An explanation of how the SUBSAFE boundaries are impacted and how the SUBSAFE integrity will be maintained shall also be included in this field. Mandatory

locations and interface requirements shall be supported by sketches and/or referenced documentation. This field is to be completed by the SAR Preparer.

The description shall be detailed enough to be used as a starting point for detailed design but need not be to the specific pipe/duct/cable level except in instances where this information is critical to the installation. Also, information as to equipment installation location should be detailed to an area of a compartment, not to a specific frame number or distance from the centerline, unless this level of detail is critical to the accomplishment of the SHIPALT. If required, a separate SHIPALT Guidance Document shall be referenced which provides a detailed description of the SHIPALT. In such cases, the referenced guidance document must be submitted to the SPM prior to the SAR approval.

For those ships indicated as scheduled to receive the intent of a SHIPALT during construction add the following to the description:

"NOTE: For those ships listed as applicable which have an asterisk (*) next to the hull number, the intent of this alteration has been or is planned to be accomplished during new construction as part of Headquarters Modification Request (HMR) (or Field Modification Request (FMR). If the applicable HMR (or FMR) is verified to be completed in any of these ships, this SHIPALT is to be considered complete on the applicable ship and the hull number listed for record purposes only. If HMR (or FMR) cannot be verified as complete in any of these ships after construction, this SHIPALT can then be considered for accomplishment in these hulls.

3.4.23 APPLICABLE SHIPS. This field is a list of all of the ships in the ship class that the SAR is applicable to. This field is to be completed by the SAR Preparer.

3.4.24 REFERENCES. This field is a list of all of the documents referred to in the description (See Section 3.4.22). The documents shall be entered in the order of their occurrence in the description and designated with a numerical reference number. This field is to be completed by the SAR Preparer.

3.4.25 ESTIMATED WEIGHT AND MOMENT IMPACT (WT & MOM). The Weight and Moment Impact field shall provide an estimate of any weight and moment change caused by the SHIPALT (increase or decrease), including loads (ammunitions, provisions, stores, fuel oil, water, etc.). Weight shall be estimated to the nearest +/- 0.1 ton (the term "Negligible" shall not be used for the weight estimate); Vertical Center of Gravity (VCG) to the nearest foot, Longitudinal Center of Gravity (LCG) to the nearest foot forward or aft of the mid perpendicular of the ship, and the Transverse Center of Gravity (TCG) to the nearest foot port or starboard of the centerline. If the SHIPALT includes modification to a hull form or an appendage (bilge keel, sonar dome, etc.), a buoyancy impact of the weight of the displaced water volume shall also be estimated to the nearest +/- 0.1 ton. This field is to be completed by the SAR Preparer.

3.4.26 ALTERATION MATERIAL LIST (AML). This field shall be used for entering all logistically significant material required for the execution on the SHIPALT. This field is to be completed by the SAR Preparer.

3.4.27 QUALITY ASSURANCE (Q/A CERTIFICATION REQUIREMENTS). The Quality Assurance field shall identify any special quality assurance certification requirements, which must be used to assure successful accomplishment of the SHIPALT including requirements for technical documentation (technical manual verification/certification, etc.). Applicable testing and safety certification that is required shall be specifically addressed (e.g., requirement to adjust firing cams, conduct Structural Test Firings (STF), etc.). This field is to be completed by the SAR Preparer.

3.4.28 SSR (SHIP SELECTED RECORD DOCUMENTATION). The Ship Selected Records (SSR) field shall identify the types of Ships Selected Records (data and drawings) (TABS, DCB, CSTOM, SIB/SSM, SDI, CSAM, SSCB, SRD'S, COSAL, COSS, EOSS, SEPM) which are impacted by the accomplishment of this SHIPALT. This field is to be completed by the SAR Preparer.

3.4.29 ILS CERTIFICATION FORM (Y/N). This field indicates if the ILS Certification Form is required. This field is to be completed by the SAR Preparer.

3.4.30 SPECIAL DISPOSITION REQUIREMENTS FOR REMOVED MATERIAL. This field will contain a list of all removed material requiring special disposition and the disposition required. This field is to be completed by the SAR Preparer.

3.4.31 INSTALLATION SUPPORT AND TEST EQUIPMENT. This field will list all the Support and Test Equipment (S&TE) that is required to support the installation of the alteration (Jigs, Alignment, I/D level TE) (The S&TE required for ships force to trouble-shoot and maintain the equipment is listed in the ILS Cert). This field is to be completed by the SAR Preparer.

3.4.32 SHIPBOARD STOWAGE DETAILS. This field will list all general shipboard stowage requirements for the alteration. If there are any special requirements they should be listed in the Description (See Section 3.4.22). This data field is to be filled in by the SAR Preparer.

3.4.33 SPECIAL INDUSTRIAL STOWAGE REQUIREMENTS. This field will list all special stowage requirements at the industrial activity installing the alteration. This section should include but not be limited to requirements such as environmental or security stowage. This field is to be completed by the SAR Preparer.

3.4.34 PROOFING REQUIREMENTS. The purpose of proofing is to ascertain that the intended purpose of the alteration is satisfied and to identify any deficiencies so that immediate corrective action can be initiated for the first time installation to preclude a repeat of the same problems on subsequent installations. If Proofing is required then the SAR Approver must enter the activity assigned to do the proofing in this field.

3.4.35 REQUIRED PRIOR OR CONCURRENT ALTS. This data field is to be used by the JCF submitter to list any prior or concurrent alts required by this proposal. This section should include but not be limited to SHIPALTs (both approved and pending), MACHALTs,

ORDALTs, Engineering Changes, Field Changes, SPALTs and Technical Directives. This field shall be copied from the JCF (See Tech Spec 9090-210B Section 2.24) by the SAR Preparer.

3.4.36 OTHER SYSTEMS INTERFACE. This field is for the JCF submitter to list any other interface to ships systems other than those covered in the Y/N check boxes above. This includes impacts such as Weapons storage (either temporary or permanent) or Fuel offload. This field shall be copied from the JCF (See Tech Spec 9090-210B) by the SAR Preparer.

3.4.37 SHIPALT COST ESTIMATE RECORD SHEET. Use this table to provide a per ship estimated cost for installation of the SHIPALT on the applicable hulls. Estimates should be broken down to segment pre-fabrication/installation/removal mandays and interference mandays for each of the production, service, and material cost categories shown in Figure 2. There is a field for explanation of the cost estimate if required and a field for entering the estimator's name and phone number. This field is to be completed by the Shipalt Preparer or other activity as designated by the SPM.

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QUALITY ASSURANCE (3.4.27)	
SSRs (3.4.28)	
ILS CERT FORM (Y/N): (3.4.29)	
SPCL DISPOSITION REQUIREMENTS FOR REMOVED MATERIAL (3.4.30)	
MATERIAL	DISPOSITION
(CONTINUE ON ADDITIONAL SHEETS AS REQUIRED)	
INSTALLATION SUPPORT AND TEST EQUIPMENT (3.4.31)	
SHIPBOARD STOWAGE DETAILS (3.4.32)	
SPECIAL INDUSTRIAL STOWAGE REQUIREMENTS (3.4.33)	

FIGURE 1

**SHIPALT COST ESTIMATE RECORD SHEET
(3.4.37)**

Class of Estimate _____

	Pre-Fab/Install /Removal	Interferences
Production M/D's		
Structural	_____	_____
Mechanical	_____	_____
Piping	_____	_____
Electrical/Electronics	_____	_____
Paint/Instl/Etc.	_____	_____
Testing	_____	
Total M/D's	_____	_____
 Services M/D's	_____	
Total Production M/D's	_____	_____
 Material (Dollars)		
LLT Material	_____	_____
Remaining Material	_____	_____
 Total Material Cost	_____	_____

DSA Costs (Mandays) _____
 Total SHIPALT Costs M/D's (Dollars) _____

Explanation:

This estimate is based as a stand alone work item. As such, neither interferences from competing work items nor benefits from packaging with other items are considered. Changes in the scope of work required can significantly change the SHIPALT estimate.

Estimator _____ (name) _____ (phone)

FIGURE 2

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FIELD AUTHORITY TABLE

FIELD	TITLE	RESPONSIBILITY
3.4.1	SHIPALT IDENTIFICATION	SAR PREPARER
3.4.2	REV	SAR PREPARER
3.4.3	BRIEF	SAR PREPARER
3.4.4	NAVSEA/PEO LEAD TECH CODE CONCURRENCE	SAR APPROVER
3.4.5	ENGINEERING DIRECTORATE CONCURRENCE	SAR APPROVER
3.4.6	OTHER CONCURRENCES	SAR APPROVER
3.4.7	LEAD LCM (LOGISTICS)	SAR PREPARER
3.4.8	SAR APPROVER TPOC	SAR APPROVER
3.4.9	PLANNING YARD TPOC	PLANNING YARD
3.4.10	ESWBS	SAR PREPARER
3.4.11	3-M NOUN NAME	SAR PREPARER
3.4.12	EIC	SAR PREPARER
3.4.13	AIT CAPABLE	SAR PREPARER
3.4.14	SAFETY ALT	SAR PREPARER
3.4.15	SUBSAFE IMPACT	SAR PREPARER
3.4.16	ILS AFFECTED	SAR PREPARER
3.4.17	SHIPBOARD STOWAGE	SAR PREPARER
3.4.18	CATEGORY CODE	SAR PREPARER
3.4.19	INDUSTRIAL STOWAGE AFFECTED	SAR PREPARER
3.4.20	TOC	SAR PREPARER
3.4.21	TMA/TMI	SAR PREPARER
3.4.22	DESCRIPTION	SAR PREPARER
3.4.23	APPLICABLE SHIPS	SAR PREPARER
3.4.24	REFERENCES	SAR PREPARER
3.4.25	ESTIMATED WEIGHT AND MOMENT IMPACT	SAR PREPARER
3.4.26	ALTERATION MATERIAL LIST (AML)	SAR PREPARER
3.4.27	QUALITY ASSURANCE (Q/A/CERTIFICATION REQUIREMENTS)	SAR PREPARER
3.4.28	SSR	SAR PREPARER
3.4.29	ILS CERTIFICATION FORM	SAR PREPARER
3.4.30	SPECIAL DISPOSITION REQUIREMENTS FOR REMOVED MATERIAL	SAR PREPARER
3.4.31	INSTALLATION SUPPORT AND TEST EQUIPMENT	SAR PREPARER
3.4.32	SHIPBOARD STOWAGE DETAILS	SAR PREPARER
3.4.33	SPECIAL INDUSTRIAL STOWAGE REQUIREMENTS	SAR PREPARER
3.4.34	PROOFING REQUIREMENTS	SAR PREPARER
3.4.35	REQUIRED PRIOR OR CONCURRENT ALTS	SAR PREPARER
3.4.36	OTHER SYSTEMS INTERFACE	SAR PREPARER
3.4.37	SHIPALT COST ESTIMATE RECORD SHEET	SAR PREPARER

FIGURE 3

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