Southeast Regional Maintenance Center

Product Families

Capabilities Manual

20 NOV 2021
Code 900 Capabilities Manual Change Page

**Code 910**
- C911 now has certified low profile steel plate stackable weights for LCS Davit W/T
- C911 removed MK109 slings from DDG capability list
- C911 conducting flight deck net services (lashing nets) for LCS Class ships
- C926 added note about No servicing of LCS RIB’s at SERMC

**Code 920**
- C925 Added capability to weld high yield steel (HY80) / stainless steel
- C928 AFFF Bottle Inspection / Hydrostatically test & fill (fill LCS only)
- C924 Added new pipe bender (up to 6” pipe – material and schedule dependent)

**Code 930**
- C931 deleted being able to overhaul Fuel Injectors. Updated the list of applicable OEM’s in Notes.
- C932 added basic MT30 capabilities
- C946 removed Hot Flushing Water for hoses. No longer required
- C931 added SSDG turbo, s/w & jacket water pump, and high pressure fuel line replacement
- C946 added capability to fabricate thermoplastic hose assemblies for LCS Steerable waterjet systems

**Code 940**
- C943 Added rebuild of LCS SSDG seawater and jacket water pumps
- C943 Added Line shaft bearing lube oil service pump rebuild
- C945 Added a note identifying responsibilities for movement and storage of refrigerant on A/C&R systems and components

**Code 950**
- C951 Added MK110 to capabilities list

**Code 970**
- None

**Code 980**
- Removed WTDMAT capability on LCS class ships
Southeast Regional Maintenance Center

Production Department Code 900

Department Head C900
Office: (904) 270-5126 ext 3352
Cell Phone: (904) 813-4639

Deputy Dept. Head C900
Office: (904) 270-5126 ext 3031
Cell Phone: (619) 947-1448

Repair Officer C900
Office: (904) 270-5126 ext 3315
Cell Phone: (904) 219-8024

Product Family Supervisors (PFS)

Services PF C910
Office: (904) 270-5126 ext: 3211
Cell Phone: (904) 300-4107

Hull PF C920
Office: (904) 270-5126 ext: 5824
Cell Phone: (904) 755-6957

Engine PF C930
Office: (904) 270-5126 ext :3356
Cell Phone: (904) 434-1301

Machine PF C940
Office: (904) 270-5126 ext: 3349
Cell Phone: (904) 307-0493

Combat Systems PF C950
Office: (904) 270-5126 ext: 3115
Cell Phone: (904) 400-3039

Production Control PF C960
Office: (904) 270-5126 ext: 3133
Cell Phone: (904) 654-3211

Diving PF C970
Office: (904) 270-5126 ext : 3076
Cell Phone: (904) 610-4419

LCS & MAT Group PF C980
Office: (904)2780-5126 ext. 5040
SHIPBOARD MAINTENANCE ACTION FORM (2-KILO)

THE 4790/2K DOCUMENTS A DEFERRED MAINTENANCE ACTION. WITHOUT IT, WORK WILL NOT BE ENTERED IN THE CURRENT SHIP’S MAINTENANCE PROJECT (CSMP). ALL DECISIONS ABOUT WHERE AND WHEN TO PLACE THE JOB AT A MAINTENANCE ACTIVITY ARE BASED ON THE 2K.

**CLARITY, ACCURACY, AND COMPLETENESS ARE ESSENTIAL.**

ADD ALL INFORMATION YOU BELIEVE HELPFUL TO PLAN OR EXECUTE THE JOB IN BLOCK 35 OR ON A 4790/2L.

A Ship’s Maintenance Action Form (SMAF) is submitted to document jobs for your CSMP. When filled out properly this form will determine how quickly the work can be placed at a maintenance activity and how easily it can be planned and executed. It may be filled out by hand. The form is submitted through your chain of command to ensure accuracy and completeness.

This section of the SERMC Capabilities and Assessments Manual discusses proper documentation of your work. It contains some tips on accuracy and details required to interpret the request. The reference used in preparing this section is the 3-M Manual, OPNAV 4790.4(series) and the sample SMAF, below.

Use the tips as guidance when completing a SMAF. There are always exceptions to the rules but, in general, proper documentation guarantees the job will reach a successful conclusion. As you go through the steps of filling out an effective SMAF, ask yourself two simple questions:

What information would someone outside my work center need to check out the job on the ship and plan it for a maintenance activity to execute?

Did I provide all this information?

**NOTE:** Additional required shop-specific information may be needed. Refer to the individual shop sections for requirements. We will be working with Sections I, II, IV, & V of the SMAF.

**Section I – IDENTIFICATION**

**Blocks 1-3** these blocks form the **JOB CONTROL NUMBER (JCN).** From day one the job will always be identified by this combination.

**Block 4** is the **ALLOWANCE PARTS LIST (APL)** or **ALLOWANCE EQUIPMENT LIST (AEL)** number. It is critical that this be accurate so the correct repair parts can be ordered. The APL number should be taken from the COSAL or SCLSIS (itemized parts list for component to be repaired) held on the ship and must identify the specific item requiring action. Unless the component and system are one and the same, this number must be for a component of the system, not for the system itself. Compare nameplate information with the ship’s records.

**Blocks A & B** identifies the **SHIP’S NAME** and **HULL TYPE/NUMBER.**
SHIPBOARD MAINTENANCE ACTION FORM (2-KILO)

**Block 5** is the **EQUIPMENT NOUN NAME**. Electronic equipment with A/N designators will use the A/N identifiers vice noun name (A/N SQR-5 for example).

**Blocks 6-9** are for diagnostic data analysis gathering. The blocks’ choices of contents are listed in the 3-M Manual. Select the choice that best fits the circumstances for each.

**Block 13** should list exact **SERIAL** or **IDENTIFIER NUMBER** of item. For example, use B54545 (the serial number of equipment) or FM 3-151-2 (the valve number).

**Block 14** is the **EQUIPMENT IDENTIFICATION CODE** (EIC), an alphanumeric identifier of the component, equipment, subsystem or system for which the maintenance is being reported. EICs are found in the EIC manual.

**Block 15** is the **SAFETY HAZARD** identification. Enter an “X” or the appropriate code located in the 3-M Manual. All jobs identified as a safety hazard must include a review by the ship’s Safety Officer in command routing.

**Block 16** is the **EXACT LOCATION** of the component identified by deck, frame, or compartment number. Fantail or open bridge is acceptable. This is a must have!

**Block 17** is the **WHEN DISCOVERED DATE**. Enter the Julian date when the malfunction was discovered.

**Section II - DEFERRAL ACTION:**

**Block 25** is the total number of **MAN-HOURS EXPENDED** by all personnel up to the time of deferral. It includes one hour for documentation purposes.

**Block 26** is the **DEFERRAL DATE**. Enter the Julian date the job was deferred (written).

**Block 27** is an estimate of how many **SHIP’S FORCE MAN-HOURS** are **REMAINING** to complete the job.

**Block 28** is the **DEADLINE DATE**. **This must be the most accurate Julian date on the document**. This tells the chain of command and the maintenance activity how much time they have to complete the job. Much time is spent between brokers and ship personnel negotiating a valid deadline date because unrealistic dates are initially provided. This is time the job could be progressing through channels on the way to the shop. Make it as accurate as possible.
SHIPBOARD MAINTENANCE ACTION FORM (2-KILO)

Section III – REMARKS / DESCRIPTION

**Block 35** is the heart of the document and is in two parts: the first states in detail **what is wrong with the component and, if known, what caused the failure.** The second part details **what must be done to correct the problem.** Separate the two statements with “XXX.” This two-part description applies to all 2Ks. If a 2L is used to illustrate some aspect of the job, mention it in this block and make sure it is available to the maintenance activity when requested. Also state if ship’s force personnel will deliver anything to the maintenance activity. If the job is written to document a casualty report (CASREP), include the CASREP date-time group. Everything up to this point has been generic. Other mandatory information is included in the individual shop sections. Planners who use your 2K to ship-check the job developed these requirements. Choose the heading and requirements that fit your job and use it to guide **Block 35.**

**Block 37** is the **CSMP SUMMARY** which is a condensed description of the problem stated in Block 35. This one line problem statement will appear on management reports. Be brief but accurate.

**Block 38** is the **FIRST CONTACT / MAINT. MAN** who is ideally the person filling out the 2K or an immediate supervisor knowledgeable in the specifics of the 2K.

**Block 39** is the **RATE** of first contact/maintenance person who is familiar with the scope of requested work.

**Block 40** is a **SECOND CONTACT** or **SUPERVISOR.** This person must be familiar with the scope of the requested work.

**Block 41** Choose and enter the appropriate **PRIORITY CODE.** (1 - Mandatory; 2 - Essential; 3 - Highly Desirable; 4 - Desirable) based on latest TYCOM guidance.

**Block 42** Select and enter the appropriate **TYPE AVAILABILITY (TA)** code. (1 - Depot; 2 - IMA; 3 - Fleet Technical Support (TYCOM or NAVSEA); 4 - S/F).

Section V – SUPPLEMENTARY INFORMATION

**Block 47** is the place to list **Technical Manuals, Blueprints, Electronic Information Bulletins (EIBs), or other documents** that may be useful to the activity providing assistance. They should be listed by title/number and indicate under “on board” if they are available on board or not. **Ensure the document matches any completed machinery alterations (MACHALT) or other changes to the equipment.**

**NOTE:** The importance of the need for accuracy and completeness of the completed SMAF cannot be over-emphasized. It should mean the same to anyone who reads it. Readiness, time, and money are casualties of a poorly written job. If you follow the guidelines listed success is guaranteed.

Additional work center-specific information may be needed. Refer to the individual work center sections for requirements.
CODE 910 – SERVICES PRODUCT FAMILY

CODE 911 – WEIGHT TEST AND RIGGING

CODE 912 – CORROSION CONTROL

CODE 926 – RIB REPAIR
STANDARD SERVICES

<table>
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<th>WEIGHT TEST AND RIGGING SHOP - BASIC FUNCTIONS</th>
<th>SERVICES</th>
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<th>WEIGHT TEST</th>
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<td>Conduct weight test (OHE and WHE)</td>
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<td>Provided rigging support</td>
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<td>Lash Nets (LCS Only)</td>
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<td>Manufacture Weight Test Tags</td>
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<td>WEIGHT TEST ITEMS</td>
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<td>Accommodation Ladders</td>
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<td>Antenna Lifting Strong backs</td>
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<td>Small Boat Slings</td>
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<td>Portable Chain Falls &amp; Hoists</td>
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<td>Single Arm Span wire Davits</td>
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<td>Vest Davit</td>
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<td>Deck Edge Safety Nets</td>
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<td>Shipboard Installed Chain Falls &amp; Hoists</td>
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<td>Weapons Handling Equipment</td>
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<td>Weight Test SAR Equipment</td>
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<tr>
<td>Life Raft Harness</td>
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</tbody>
</table>

Notes:
1. All rigging support required 72 HRS advanced notice.
2. 911 does not conduct any personnel lifting.
3. 911 does not provide scaffolding for ships force.
4. Rigging through Ellison doors is not permitted by SERMC unless a waiver is signed by an E-7 or above from ship’s force and documented in the package as so.
5. Minimum rigging requirements is 150 lbs.
<table>
<thead>
<tr>
<th>LHD</th>
<th>LSD</th>
<th>LPD</th>
<th>CG</th>
<th>DDG</th>
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<tr>
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<td>MK-105</td>
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<td>MK-105 GREEN</td>
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<td>MK-105 PEND</td>
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## STANDARD SERVICES

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<td>Burn-off Operations (Prior to blast ops)</td>
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<td>Protective Coatings Application</td>
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<td>&gt; Electrostatic Powder Coating 009-32</td>
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<td>&gt; Paint Application</td>
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<td>Doors (Excludes Joiner or Non-Watertight doors)</td>
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<td>Davit Covers</td>
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<td>Deck Plates (blast only)</td>
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<td></td>
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</tr>
<tr>
<td>Various Cages</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Vent Screens</td>
<td>X</td>
<td>X</td>
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</tr>
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<td>Turn Buckles</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Chain Pipe Covers</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Hawse Pipe Covers</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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</tr>
<tr>
<td>Chock Covers</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
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<td>Tripod (.50 CAL)</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>Life Rails (Excluding GRP)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>Harpoon Clamps</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Fuel Receivers Covers</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Notes:

1) SERMC CODE 962 (PLANNING) will conduct a ship check of each item requested for Corrosion Control. Shop representatives will escort the ship checker to the items that need to be preserved. Items that require repair will be identified during the ship check and alternative recommendations will be provided. The ship check will also identify the degree of disassembly required for successful corrosion control during the ship check.

2) Items will only be accepted for corrosion protection and not beautification, i.e. lockers, mess deck chairs, table stands from mess decks, parking signs, fire extinguisher brackets and chains (All including anchor chains). Color must be identified during ship check or will result in default color of haze gray.

3) Size/Weight Constraints: Less than 10 feet in length and weight of 300lbs or less. Powder coat approximately 4FT X 6FT and weight of 300lbs or less. Items must have holes or attachments for hanging.

4) Restrictions: Engineering deck plate, plastic and rubber surfaces, weapons handling equipment that is subject to weight test cannot be blasted and painted. Glass, small or light weight or thin metal hand wheels, deck wrenches, accommodation ladder, joiner or non-watertight doors will not be accepted.

5) All PCMS, Caulking and glue are required to be removed prior to delivery of equipment.

6) When submitting multiple items under one JSN, all items under that JSN must be receiving, the same processes and delivered at the same time.

7) A metal ID tag will be attached to each item along with a ship-to-shop tag with the following information

(example):

Ship’s Name (DIXIE), Item Description (WTD), Work Center (EA02), Metal Tag Number (#001, matching the ship checker manifest list), which process (BL: Blast, PC: Powder Coat, HG: Color HAZE GRAY) and number of pieces 003

[ON WTD’S THE TAC NUMBER WILL BE ON TAG AS WELL]

METAL ID TAG EXAMPLE

DIXIE
HOSE REEL
EA02 # 001
FJ/HG
003
# RIB REPAIR
WORK CENTER # - 926

## STANDARD SERVICES

<table>
<thead>
<tr>
<th>RIB Repair Shop - Basic Functions</th>
<th>Services</th>
<th>Repair</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RIB Services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintain RIB Loaner Pool</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Conduct Hull and Structural Surveys</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct RIB Maintenance Training</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Provide Transportation and Stowage Services</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trouble Shooting Assistance With RIB</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-deployment Inspections</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>RIB Repairs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair and Install Sponson</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Replace Non-skid</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Replace Electronic Equipment (VHF Radio, GPS and Whelan Unit)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inspect and Repair Auxiliary Electrical Equipment</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inspect and Repair Steering System</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Conduct Fiberglass Repairs</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct Preservation</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Small Boat Engine and Propulsion System Repairs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct Engine Tune Up</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Inspect and Repair Shafts and Propellers</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inspect and Repair Diesel Engine</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Inspect and Repair Diesel Cooling System</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Inspect and Repair Shafts and Propellers</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

**A: 2 KILO REQUIREMENTS**

1. THE BOAT REPAIR FACILITY REQUIRES ONE JOB PER CRAFT; IDENTIFY THE WORK AS HULL, MECHANICAL, OR ELECTRICAL.
2. IDENTIFY THE EXTENT OF EACH TYPE OF WORK
3. JOB SHOULD INCLUDE HULL NUMBER FOR TRACKING PURPOSES IN BLOCK 35 OF THE 2K.
4. DETAIL ALL KNOWN MECHANICAL PROBLEMS AND ELECTRICAL PROBLEMS.
5. LOANER RIBS WILL BE ISSUED IAW WFMN 1.
EXAMPLE OF BLOCK 35 FOR ROUTINE WORK:

REQUEST SERMC BOAT REPAIR ASSESS AND REPAIR HULL, MECHANICAL AND ELECTRICAL SYSTEMS ON 7-METER RIB, HULL # 7M0000X. ENGINE HAS FAULTY WATER PUMP AND REQUIRES COMPLETE OVERHAUL. ELECTRICAL SYSTEM REQUIRES MINOR GROOM AND IDENTIFICATION OF CHARGING SYSTEM PROBLEM. HULL REQUIRES COMPLETE PRESERVATION AND PAINT. SHIP’S FORCE UNABLE TO IDENTIFY SOURCE OF SLOW LEAK IN SPONSON XXX CONDUCT ASSESSMENT AND/OR OVERHAUL. INSTALL SECURITY PACKAGE ALT 7MRB002C. LOUD GRINDING NOISE IN THE OUT DRIVE UNIT OF RIB HULL #7M0000X XXX REPAIR OR REPLACE OUT DRIVE AND COMPONENTS.

Notes:

1: ALL BOATS WILL BE ASSESSED FOR TOUCH-UP OR FULL PAINT AS NEEDED AFTER REPAIR.
2: PAINTING IS CONDUCTED BY SHOP 912.
3: WE REQUIRE REMOVAL OF SLINGS, CO2 BOTTLES, LIFE PRESERVERS, FLOTATION DEVICES, TOOL BAGS, MEDICAL KITS, BATTLE LANTERNS, MOORING LINES, ANCHORS, SAR EQUIPMENT, AND ANY OTHER SHIPS FORCE GEAR PRIOR TO DELIVERY OF CRAFT.
4: DD 1149 WILL BE UTILIZED FOR TEMPORARY CUSTODY TRANSFER. E-7 OR ABOVE REQUIRED FOR SIGNATURE.
5: WHEN SUBMITTING JOB IDENTIFY ANY KNOWN MECHANICAL PROBLEMS REQUIRING ATTENTION.
6: IN THE EVENT ENGINE BECOMES SALT WATER CONTAMINATED (FLOODING) SHIP’S FORCE MUST REFER TO NSTM 233 CHAPTER 233-6.17-18 (TREATMENT AFTER IMMERSION IN SEAWATER) AND FOLLOW PROCEDURE IN ORDER TO MINIMIZE ENGINE DAMAGE. IT IS IMPERATIVE TO FLUSH ENGINE WITHIN 24 HOURS.
7: WHEN DELIVERING THE RIB, SHIPS FORCE PERSONNEL ARE TO ENSURE THE SECURITY ARCH, EMERGENCY TILLER, MOBI, AND GPS ARE ONBOARD FOR INSPECTION AND REPAIR.

B: ADDITIONAL INFORMATION

1: LOANER RIB IS AVAILABLE ON A CASE-BY-CASE BASIS TO SUPPORT SHIPS UNDER WAY AND TRAINING REQUIREMENTS IAW WFMN 1.
2: WHEN DELIVERING THE RIB IT IS REQUIRED THAT SHIPS’ FORCE REPRESENTATIVE IS PRESENT TO ANSWER QUESTIONS AND PROVIDE A P.O.C. (E-7 OR ABOVE)
3: BOAT REPAIR FACILITY WILL CONDUCT A PRE-DEPLOYMENT INSPECTION A MINIMUM OF 30 DAYS PRIOR TO DEPLOYMENT BUT WILL NOT CONDUCT GROOMS (TUNE-UP, OIL AND FILTER CHANGE).
4: ACTUAL SCOPE OF WORK AND COMPLETION DATES WILL DEPEND ON FINAL ASSESSMENT. ANY CHANGES WILL BE DISCUSSED AT THE WORK DEFINITION CONFERENCE (WDC).

C: SHOP LIMITATIONS

1: NO TURBOCHARGER, MARINE GEAR/TRANSMISSION OR FUEL INJECTION PUMP OVERHAUL CAPABILITY
2: NO OUT DRIVE OVERHAUL CAPABILITY (REMOVE AND REPLACE ONLY).
3: SHOP IS NOT CAPABLE OF REPAIRING ELECTRONIC EQUIPMENT SUCH AS GPS AND DEPTH SOUNDER UNITS
4: SERMC HAS LIMITED REPAIR CAPABILITY OF LCS RIB’S.
CODE 920 – CORROSION AND HULL PRODUCT FAMILY

CODE 922 - WATERTIGHT DOOR AND CLOSURE

CODE 924 – PIPE

CODE 925 – WELD / BRAZE

CODE 928 – SCBA SERVICES
**WATERTIGHT CLOSURES SHOP**  
**WORK CENTER # - 922**

## STANDARD SERVICES

### WATERTIGHT CLOSURES SHOP - BASIC FUNCTIONS

<table>
<thead>
<tr>
<th>SERVICES</th>
<th>TRAINING</th>
<th>REPAIRS</th>
<th>OVERHAUL</th>
</tr>
</thead>
</table>

**DOOR SERVICES**

- Conduct structural surveys of closure  
- Conduct watertight door training  
- Conduct basic PMS training with DCPOs

**WATER TIGHT CLOSURES REPAIRS**

- Weld repair doors (ship to shop)
- Cut out and replace watertight door and frame assembly
- Manufacture hinges for ship’s force
- Doors (All Decks)
- Hatches (All Decks)
- Scuttles (All Decks)
- Conduct repairs to Ellison doors (See Shop Limitations)
- Repair deck drains (unless hot work is required)
- Fire zone doors
- Conduct preservation on closures

### SHOP LIMITATIONS:

- Some closures have special weld requirements and are required to be ship checked prior to work induction.
- Limited repairs to Counter balance and ballistic doors.
- Door services for MAFO doors is limited to inspection and testing IAW NSTM 600 Volume 1
- Door services for Ellison Doors is limited to inspection and timing adjustment IAW NSTM 600 Volume 1

### SHIP’S FORCE REQUIREMENTS:

- Removal of all PCMS.
- Removal of label plates and ensure ship to shop tag is installed
### PIPE SHOP

**WORK CENTER # - 924**  
**STANDARD SERVICES**

#### PIPE SHOP - BASIC FUNCTIONS

<table>
<thead>
<tr>
<th>SERVICES</th>
<th>TRAINING</th>
<th>REPAIRS</th>
</tr>
</thead>
</table>

#### PIPE/TUBING FABRICATION

<table>
<thead>
<tr>
<th></th>
<th>SERVICES</th>
<th>TRAINING</th>
<th>REPAIRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube Bending</td>
<td>✗</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>Tube/pipe Brazing and Manufacturing</td>
<td>✗</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>Lock-Ring Pipe up to 2 ¼ inch</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pipe Bending (* - see list below)</td>
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<td></td>
</tr>
<tr>
<td>Tube/pipe Welding and Manufacturing</td>
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#### PIPE BENDER CAPABILITY

<table>
<thead>
<tr>
<th>SIZE</th>
<th>WALL</th>
<th>CUNI</th>
<th>CARBON STEEL</th>
<th>STAINLESS STEEL</th>
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<tr>
<td>1.25&quot;</td>
<td>CLASS 200</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1.5&quot;</td>
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<td></td>
</tr>
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<td>2.5&quot;</td>
<td>CLASS 200</td>
<td>X</td>
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<td>CLASS 200</td>
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<td></td>
<td></td>
</tr>
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<td></td>
</tr>
<tr>
<td>6.625&quot;</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>2&quot;</td>
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<tr>
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</tr>
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<td></td>
</tr>
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<td>SCHEDULE 80</td>
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</tbody>
</table>

* *
# WELD/BRAZE SHOP

## WORK CENTER # - 925

## STANDARD SERVICES

<table>
<thead>
<tr>
<th>WELD/BRAZE SHOP - BASIC FUNCTIONS</th>
<th>SERVICES</th>
<th>TRAINING</th>
<th>REPAIRS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WELD/BRAZE SERVICES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas Metal Arc (MIG) Welding (Greater Than 3/16 In) Alumn.</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Gas Tungsten Arc (TIG) Welding</td>
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<td></td>
</tr>
<tr>
<td>High Yield Steel (HY80) and Stainless Steel Plate Welding</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Shielded Metal Arc (SMA) Welding(Greater Than 3/16 In)</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Portable MIG Welding (Non Ferrous) Alumn. Shipcheck dependent</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Portable SMA Welding (Ferrous/Non Ferrous). Shipcheck dependent</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Portable TIG Welding (Ferrous/Non Ferrous). Shipcheck dependent</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Weld / Braze qualification program</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td><strong>METAL FABRICATION AND REPAIRS</strong></td>
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<td></td>
</tr>
<tr>
<td>Shear and form metal</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Bending various metal</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Notching, rolling, punching various metal</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Sheetmetal fabrication (limited capability - safety related items i.e. drip pans, funnels etc. C925 does not fabricate lockers and shelves etc.)</td>
<td>×</td>
<td>×</td>
<td></td>
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</table>
## STANDARD SERVICES

<table>
<thead>
<tr>
<th>SCBA SHOP- BASIC FUNCTIONS</th>
<th>Inspect</th>
<th>Test</th>
<th>Repair</th>
<th>Train</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PMS MIP 5519/016</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMS CHECK 5519/016 M-1-R INSPECT, TEST AND CLEAN BREATHING APPARATUS</td>
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<td>✗</td>
<td></td>
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<tr>
<td>PMS CHECK 5519/016 M-2 INSPECT AIR CYLINDER PRESSURE</td>
<td>✗</td>
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</tr>
<tr>
<td>PMS CHECK 5519/016 S-1 REVIEW HYDROSTATIC DATE AND EXPIRATION DATE</td>
<td>✗</td>
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<tr>
<td>PMS CHECK 5519/016 36M-1 PERFORM SCBA FUNCTIONAL FLOW TEST</td>
<td>✗</td>
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</tr>
<tr>
<td>PMS CHECK 5519/016 R-2 VISUALLY INSPECT AND REFILL AIR CYLINDER</td>
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<tr>
<td>PMS CHECK 5519/016 U-1 PREPARE AIR CYLINDER FOR HYDROSTATIC TEST</td>
<td>✗</td>
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</tr>
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<td>CONDUCT HYDROSTATIC TESTING OF SCBA CYLINDERS</td>
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</tr>
<tr>
<td>CONDUCT MINOR EPOXY RESIN REPAIRS TO CYLINDER GEL COATING IAW CGA PAMPHLET C-6.1</td>
<td>✗</td>
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</tr>
<tr>
<td>INSPECT, REPAIR AND REPLACE CYLINDER VALVE SEATS IAW MFG. TECH MAN</td>
<td>✗</td>
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<td></td>
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</tr>
<tr>
<td>INSPECT, TEST, REPAIR REDUCER IAW MFG. TECH MAN</td>
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</tr>
<tr>
<td>INSPECT, TEST, REPAIR REGULATOR IAW MFG. TECH MAN</td>
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<td>✗</td>
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<td>✗</td>
</tr>
<tr>
<td>PERFORM SCBA PACK AND CYLINDER INSPECTION AND REPAIR IAW ASA CHECK SHEET</td>
<td>✗</td>
<td></td>
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</tr>
<tr>
<td>PERFORM AFFF BOTTLE HYDROSTATIC TEST AND FILL</td>
<td>✗</td>
<td></td>
<td></td>
<td>✗</td>
</tr>
</tbody>
</table>

**Note:** Maximum number of items are limited per each 2-Kilo.

1. Hydrostatic testing of SCBA bottles - Write 2-Kilo for bottles to be bundled as per Repair Locker (i.e. Repair 2 or Repair 5)
2. Testing of masks/breathing apparatus are limited to 25 per 2-Kilo.
3. AFFF bottle hydrostatic test and fill is applicable to LCS only. Other platforms C928 will hydrostatically test but S/F is responsible to re-fill.
CODE 930 – ENGINE PRODUCT FAMILY

CODE 931 – DIESEL ENGINE SERVICES

CODE 932 – GAS TURBINE REPAIR

CODE 946 – FLEX HOSE SERVICES

CODE 947 – HEAT EXCHANGER SERVICES

CODE 958 – OUTSIDE ELECTRICAL

CODE 958A – MOTOR REPAIR SERVICES
# DIESEL ENGINE SERVICES
## WORK CENTER # - 931

## STANDARD SERVICES

<table>
<thead>
<tr>
<th>DIESEL ENGINE - BASIC FUNCTIONS</th>
<th>Overhaul</th>
<th>Repair/Replace</th>
<th>Testing</th>
<th>Inspections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspect and Repair Lube Oil Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect Lube Oil Systems (General)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Lube Oil Systems.</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set Simple Regulating/Relief Valves</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Set backlash and Change New/Rebuilt Attached pumps</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Test and Repair:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Governors</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Fuel Injectors (Pop Test)</td>
<td>X (1,2)</td>
<td>X (1,2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Pumps</td>
<td>X (1,2,3)</td>
<td>X (1,2,3)</td>
<td>X (1,2,3)</td>
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<tr>
<td><strong>Repair or Replace Engine Components</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>CYLINDER HEAD</td>
<td>X(1, 6)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>CYLINDER LINER</td>
<td>X(1)</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>PEDESTAL BEARING</td>
<td>X(2)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>VIBRATION DAMPER</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Miscellaneous:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-100 Engine</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>EBAC Air Compressors/Engine</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Emergency Power Portable Generators</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Notes:** (X# denotes only specific engine currently capable due to special tools availability, and/or personnel skillset presently onboard. No # denoted means Code 900 should be able to accomplish engines 1-6 in specific area listed)

1. COLT PIELSTIC 2.5V STC (LCS)
2. FAIRBANKS MORSE 8 1/8
3. ALCO *
4. CATERPILLARS *
5. PAXMAN *
6. ISOTTA-FRASCHINI *

* Case-by-cases repair request for following engine being developed: FAIRBANKS MORSE 8 1/8 ALCO, CATERPILLARS, PAXMAN & ISOTTA-FRASCHINI.

* Internal engine inspections are in conjunction with Code 200 DEIs.
## STANDARD SERVICES

<table>
<thead>
<tr>
<th>GAS TURBINE- BASIC FUNCTIONS</th>
<th>Inspect/Assist</th>
<th>Remove</th>
<th>Repair</th>
<th>Replace</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rolls Royce/Allison 501 K17/K34 GTG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine Assembly</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine Compressor Front/Rear Bearing Seal Assembly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhaust Flexible Joint Assembly (AT Module)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gear High &amp; Low Speed Bearings</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open, Close Upper Compressor Casing</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Power Take-Off (PTO) Shaft Assembly</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace Turbine Combustion Liner</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Turbine Hot Sections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9130/ 9140 GTG RIMSS Engine</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9130/ 9140 GTG Engine Shock mounts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G/E LM2500 GTM</td>
<td>Inspect/Assist</td>
<td>Remove</td>
<td>Repair</td>
<td>Replace</td>
<td>Training</td>
</tr>
<tr>
<td>Compressor VSV’s Inner/Outer Bushing</td>
<td></td>
<td>X</td>
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<td></td>
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</tr>
<tr>
<td>Compressor Rotor Blades, Stage 3-16</td>
<td></td>
<td>X</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>C-Sump Lube Oil Nozzle</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Exhaust Flexible Joint Assembly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1ST Stage Power Turbine Nozzle Segments</td>
<td></td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>Gas Generator Assembly</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Pressure Turbine Rotor Assembly</td>
<td></td>
<td>X</td>
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</tbody>
</table>
# GAS TURBINE REPAIR
## WORK CENTER # - 932

### STANDARD SERVICES

<table>
<thead>
<tr>
<th>G/E LM2500 GTM (CON’T)</th>
<th>Inspect/Assist</th>
<th>Remove</th>
<th>Repair</th>
<th>Replace</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Pressure Turbine Stage 1 Nozzle Assembly</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Pressure Turbine Stage 1 Nozzle Assembly</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Speed Coupling Shafts</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
</tr>
<tr>
<td>HP Turbine Rotor 1st Stage Blades</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number 3/5/6 Bearing &amp; Stationary Seal Assembly</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Turbine Assembly</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Turbine Stator Cases</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separate Gas Generator at Power Turbine</td>
<td>X</td>
<td>X</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Separate the Gas Gen AT TMF/CRF Flanges</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1 Compressor Rotor Blade</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Stage 2 Compressor Rotor Blade</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Power Turbine Module Boot</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Provide Inspection/Assistance

- Conduct Power Turbine Inspection (IAW GT Bulletin) | X | | |
- Conduct Turbine Mid-Frame Anti-Rotation Inspection | X | | |

### Miscellaneous Services

- Balance & Trim G/E LM2500 (MGTI)

### Training Equipment Available (Static Displays)

- Allison 501-K17 Gas Turbine Engine | X |
- G/E First Stage Blade/Rotor Assembly | X |
- G/E LM2500 Gas Generator Assembly | X |
- G/E LM2500 Power Turbine Assembly | X |

### MT30 GTM

<table>
<thead>
<tr>
<th></th>
<th>Inspect/Assist</th>
<th>Remove</th>
<th>Repair</th>
<th>Replace</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessory Gearbox Speed Pick-up (1)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Nozzles (1)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starter Replacement</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1) MT30 repairs will be addressed on a case by case basis with FTA consultation. Initial repairs will be limited to external part replacement.
# FLEX HOSE SERVICES

**WORK CENTER # - 946**

## STANDARD SERVICES

<table>
<thead>
<tr>
<th>FLEX HOSE - BASIC FUNCTIONS</th>
<th>Cut &amp; Skive</th>
<th>Fabricate</th>
<th>Flush</th>
<th>Hydrostatic Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Purpose Hoses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel Engine Hoses</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Gas Turbine (LM 2500) Hoses</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Internally Reinforced Non-Collapsible Hoses</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Magazine Sprinkler Hoses (PRP)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Steel Braid Hoses From -4 Thru -24</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Rubber Hoses From -4 Thru -128</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoses Up To 3 In (Machine)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LCS Steering System Thermoplastic Hoses</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Hydrostatic Test (In Shop)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flex Hoses Up To 10,000 PSI</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Torpedo Tube Air Flasks To 2600 IAW PMS</td>
<td></td>
<td></td>
<td>✓</td>
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</tr>
<tr>
<td>High Pressure Air Compressor Coolers (air side)</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td><strong>Crimp Flexible Hoses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hoses Up To 2 In (Machine)</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

1. All hoses are ship to shop.
2. All hoses must be free of hazardous liquids prior to delivery to the shop.
3. All hoses needs to have proper FME prior to delivery to the shop.
4. All hoses must have ship to shop tags attached prior to delivery to the shop.
5. All hoses that fails hydro or visual inspection will not be returned to the ship and will be destroyed.
6. Shop does not manufacture the following types of hoses: Nitrogen service, Halon, Gas Service, and Metal with welded inserts.
HEAT EXCHANGER SERVICES
WORK CENTER # - 947

STANDARD SERVICES

<table>
<thead>
<tr>
<th>HEAT EXCHANGER - BASIC FUNCTIONS</th>
<th>Cleaning</th>
<th>Repair</th>
<th>Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform Miscellaneous Repairs on Heat Exchangers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coolers - Air</td>
<td>X (1,2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coolers - Oil</td>
<td>X (1,2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coolers - Water</td>
<td>X (1,2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lube Oil Heaters</td>
<td>X (1,2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace Cooler Zincs</td>
<td>X</td>
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</tr>
<tr>
<td>Provide Cleaning Services</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Chemical</td>
<td>X</td>
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<tr>
<td>Flushes - Water</td>
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</tr>
<tr>
<td>Lancing - Air</td>
<td>X</td>
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</tr>
<tr>
<td>Lancing - Water (In Shop)</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>Lancing - Water (On Ship, Pumping Services Provided by Maint. Team)</td>
<td>X</td>
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<tr>
<td>Troubleshoot, Repair and Test:</td>
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<tr>
<td>Plug Miscellaneous Heat Exchanger Tubes</td>
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</tr>
<tr>
<td>Apply Polymeric Coating</td>
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<tr>
<td>Hydrostatic Testing</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pressure Vessel and Components</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Notes:
1) Ship Force is responsible for removing all interferences prior to cooler removal and cleaning onboard.
2) Ship Force is responsible for coordinating pumping services prior to cooler cleaning onboard.
OUTSIDE ELECTRICAL
WORK CENTER # - 958

*** Aloft work to be coordinated by Ship Force and Ships Superintendent (Aloft chit, man lift, scaffolding)***

STANDARD SERVICES - Applies to all applicable classes of US Navy surface ship

<table>
<thead>
<tr>
<th>ELECTRICAL- BASIC FUNCTIONS</th>
<th>Inspect</th>
<th>Fabricate</th>
<th>Repair</th>
<th>Replace</th>
<th>Install</th>
<th>Test</th>
<th>Training</th>
<th>Ship to Shop</th>
<th>Ship-Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Repairs</td>
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<td>Cable Banding Material</td>
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<td>x</td>
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<tr>
<td>Cabling Fabrication(up to THOF-400) see note 1</td>
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<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Cable tag fabrication</td>
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<tr>
<td>Cable Jacket</td>
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<tr>
<td>Cableway Inspection and Reporting</td>
<td>Inspect</td>
<td></td>
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<td>Ship- Board</td>
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<tr>
<td>Cableway Assessment</td>
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<td></td>
<td></td>
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<td>x</td>
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<tr>
<td>A/C Equip, Controllers &amp; Contactors</td>
<td>Inspect</td>
<td>Trouble shoot</td>
<td>Repair</td>
<td>Replace</td>
<td>Install</td>
<td>Test</td>
<td>Training</td>
<td>Ship to shop</td>
<td>Ship- Board</td>
</tr>
<tr>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Valve Actuators</td>
<td>Inspect</td>
<td>Trouble shoot</td>
<td>Repair</td>
<td>Replace</td>
<td>Set</td>
<td>Test</td>
<td>Training</td>
<td>Ship to shop</td>
<td>Ship- Board</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Remote electrical (Nu Torque, Limit torque, and MORPAC)</td>
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<td></td>
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<tr>
<td>Other Electrical Equipment</td>
<td>Inspect</td>
<td>Trouble shoot</td>
<td>Repair</td>
<td>Replace (Note 3)</td>
<td>Set</td>
<td>Test</td>
<td>Training</td>
<td>Ship to Shop</td>
<td>Ship-Board</td>
</tr>
<tr>
<td></td>
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<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
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</tr>
<tr>
<td>Battery Charging Stations (Yellow Gear, Forklifts, Etc.)</td>
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<td>Lights: Landing, Navigation, and Signaling (except where imbedded in deck)</td>
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<td>Impedance Testing (Note 1)</td>
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**Note:**
1. Impedance testing is required for all titanium piping seawater system components.
# MOTOR REPAIR SERVICES

**WORK CENTER # - 958A**

## STANDARD SERVICES

<table>
<thead>
<tr>
<th>MOTOR REPAIR - BASIC FUNCTIONS</th>
<th>Cleaning Preserve Drying</th>
<th>Testing</th>
<th>Assembly And Disassembly</th>
<th>Inspections</th>
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<tr>
<td>Prepare Motor for Reconditioning</td>
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<td>Abrasive Blasting and Preparation</td>
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<td>Drying</td>
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<td>Disconnect motor leads and inspect controller for overload relay specification</td>
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<tr>
<td>Check motor controller cable for insulation resistance and short</td>
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<tr>
<td><strong>Inspect, Repair and Test AC Motors</strong></td>
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<tr>
<td>Receipt Inspection</td>
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<tr>
<td>Electrical Test</td>
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<tr>
<td>Disassemble Motor</td>
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<td>Fresh Water Wash Motor Stator</td>
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<td>Dry Motor Stator</td>
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<tr>
<td>Install New Bearings</td>
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<tr>
<td>Test Motors up to 150 HP (In Shop)</td>
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<td>Balance and Spin Test Motors Up to 250 lbs</td>
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<td>Field balancing</td>
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<tr>
<td><strong>Test Run AC Motors (In Shop Unloaded)</strong></td>
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<td>Motors Up To 150 HP</td>
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**Notes:** THE FOLLOWING ARE SHOP RESTRICTIONS. THESE REQUIREMENTS MUST BE COORDINATED THROUGH THE APPLICABLE SHIPSUP:

1. SHOP 958A DOES NOT ROUTE TEMPORARY POWER TO ANY EQUIPMENT.
2. SHOP 958A DOES NOT RECEIVE MOTORS THAT REQUIRE AN OUTSIDE CONTRACTOR TO REWIND MOTOR.
CODE 940 – MACHINE PRODUCT FAMILY

CODE 941 – INSIDE MACHINE

CODE 942 – OUTSIDE MACHINE

CODE 943 – PUMP

CODE 944 – VALVE

CODE 945 – AIR CONDITIONING AND REFRIGERATION

CODE 948 – LOCKSMITH & ENGRAVING
<table>
<thead>
<tr>
<th>Inside Machine - Basic Functions</th>
<th>Inspect</th>
<th>Manufacture</th>
<th>Repair</th>
<th>Machine</th>
<th>Training</th>
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<tr>
<td><strong>Pump/Motor Repair:</strong></td>
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<td>Couplings (Straight &amp; Tapered)</td>
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<td>Wearing Rings</td>
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<td>Motor End-bells</td>
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<td>Valve Stems</td>
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<td>Phonographic Finishes</td>
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<td><strong>Gears Manufacture &amp; Repair:</strong></td>
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<td>Anneal Hardened Steel</td>
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<td>Case Harden Metals</td>
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<td>Harden Ferrous Metals</td>
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<td>High Speed Steel Cutters</td>
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<td>Drill Press</td>
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<td>Radial Arm Drill Press</td>
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<td>Lathe (Manual &amp; CNC)</td>
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<td>Vertical Turret Lathe</td>
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<td>Band Saw (Horizontal &amp; Vertical)</td>
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<td>Hydraulic Press (150 tons)</td>
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<td>(Disintegrator &amp; Wire)</td>
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# OUTSIDE MACHINE SERVICES

## WORK CENTER # - 942

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<thead>
<tr>
<th>Outside Machine - Basic Functions</th>
<th>Inspect</th>
<th>Install/Fit-up</th>
<th>Repair</th>
<th>Replace</th>
<th>Training</th>
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<td>Tri-Seals</td>
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<td>Sound Mounts</td>
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<td>Broken Bolt &amp; Studs</td>
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<td>Bridge window assembly</td>
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<td>Fan coil assembly</td>
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## Pump Shop - Basic Functions

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<th>Inspect</th>
<th>Repair</th>
<th>Overhaul</th>
<th>Training</th>
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<td>Chill Water</td>
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<td>Lube Oil Service (Electric &amp; Attached)</td>
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<tr>
<td>Line Shaft Bearing Lube Oil Service</td>
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<td>Brine</td>
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<td>Feed (Steam Plants)</td>
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<td>Condensate (Steam Plants)</td>
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<td>Main Feed Booster (Steam Plants)</td>
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<tr>
<td>Aegis Cooling</td>
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<td>Gas Turbine Generator Sea Water Cooling</td>
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<td>Bilge</td>
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<td>Condensate</td>
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<td>LCS SSDG Seawater Cooling</td>
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</table>
Leak test up to 6000psig (water) & 3500psig (air); Vacuum Breakers, Reducing Valves & Regulators (seat tightness only).

All systems except Hydraulic, Nuclear, Subsafe, O₂ & N₂.

Ship-to-Shop all valves weighing less than 150lbs; Cradle-to-Grave (R,R,R) for all valves weighing 150lbs or more, if at pier side NAVSTA Mayport (if at shipyards, ship & shipyard to make arrangements for removal, reinstallation & transportation.

Must be accomplished during normal operating conditions within the appropriate system in order to set high/low limits.

Pneumatic reducing, manifolds or regulating valves without an electrical input.

Notes:
1. Leak test up to 6000psig (water) & 3500psig (air); Vacuum Breakers, Reducing Valves & Regulators (seat tightness only).
2. All systems except Hydraulic, Nuclear, Subsafe, O₂ & N₂.
3. Ship-to-Shop all valves weighing less than 150lbs; Cradle-to-Grave (R,R,R) for all valves weighing 150lbs or more, if at pier side NAVSTA Mayport (if at shipyards, ship & shipyard to make arrangements for removal, reinstallation & transportation.
4. Must be accomplished during normal operating conditions within the appropriate system in order to set high/low limits.
5. Pneumatic reducing, manifolds or regulating valves without an electrical input.

Valve Shop - Basic Functions

<table>
<thead>
<tr>
<th>Remove / Install</th>
<th>Repair</th>
<th>Test (Note 1)</th>
<th>Set</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Butterfly:</strong></td>
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<td>10” and Below (except Bleed Air &amp; Ventilation valves)</td>
<td>X</td>
<td>Note 3</td>
<td>X</td>
<td>X</td>
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<tr>
<td><strong>Swing Check:</strong></td>
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<tr>
<td>10” and Below</td>
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<td>Note 3</td>
<td>X</td>
<td>X</td>
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<td><strong>Diaphragm Control Valves (CLAVAL/HYTROL):</strong></td>
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<td>10” and Below (except Diaphragm Control Valve Controllers)</td>
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<td>Note 3</td>
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<tr>
<td><strong>Gate:</strong></td>
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<tr>
<td>10” and Below</td>
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<td>Note 3</td>
<td>X</td>
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<tr>
<td><strong>Globe:</strong></td>
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<tr>
<td>10” and Below</td>
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<td>Note 3</td>
<td>X</td>
<td>X</td>
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<tr>
<td><strong>Ball:</strong></td>
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<td>6” and Below</td>
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<td><strong>Pneumatic Systems (except Nitrogen):</strong></td>
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<tr>
<td>Air Start Valves (only up to ambient temperature)</td>
<td>X</td>
<td>Note 3/5</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Air Control Valves (only up to ambient temperature)</td>
<td>X</td>
<td>Note 3/5</td>
<td>X</td>
<td>X</td>
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<tr>
<td>High Pressure Air Valves</td>
<td>X</td>
<td>Note 3/5</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Low Pressure Air Valves</td>
<td>X</td>
<td>Note 3</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Reducing Valves &amp; Manifolds</td>
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<td>Note 3/5</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Regulators</td>
<td>X</td>
<td>Note 3/5</td>
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<td><strong>Regulating Valves:</strong></td>
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<td>Air</td>
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<td>X</td>
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<tr>
<td>Water</td>
<td>X</td>
<td>Note 3</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Temperature (except testing of sensing element)</td>
<td>Note 3</td>
<td>Note 4</td>
<td>Note 4</td>
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<td><strong>Ballast Control Valves:</strong></td>
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<tr>
<td>10” and Below</td>
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<td><strong>Relief Valves:</strong></td>
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<tr>
<td>All (Note 2)</td>
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<td>Note 3</td>
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<td>Steam Kettle (electric only)</td>
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<td>Note 3</td>
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<td>X</td>
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<tr>
<td>Hot Water Heaters Safety (electric only)</td>
<td>X</td>
<td>Note 3</td>
<td>X</td>
<td>X</td>
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<tr>
<td><strong>Fleet Valve Repair Assist:</strong></td>
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<tr>
<td>Facilities available to assist ship’s force in the accomplishment of repairs, setting &amp; testing up to 6000psig.</td>
<td></td>
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<tr>
<td>Assistance for repairs if relief valve testing fails.</td>
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<tr>
<td><strong>Manifolds:</strong></td>
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<td></td>
</tr>
<tr>
<td>All (except Hydraulic)</td>
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<td>Note 3/5</td>
<td>X</td>
<td>X</td>
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<tr>
<td><strong>Boiler Propulsion Services:</strong></td>
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<td>Burner Barrel</td>
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<td>DFT Spray Nozzle</td>
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</table>

Notes:
1. Leak test up to 6000psig (water) & 3500psig (air); Vacuum Breakers, Reducing Valves & Regulators (seat tightness only).
2. All systems except Hydraulic, Nuclear, Subsafe, O₂ & N₂.
3. Ship-to-Shop all valves weighing less than 150lbs; Cradle-to-Grave (R,R,R) for all valves weighing 150lbs or more, if at pier side NAVSTA Mayport (if at shipyards, ship & shipyard to make arrangements for removal, reinstallation & transportation.
4. Must be accomplished during normal operating conditions within the appropriate system in order to set high/low limits.
5. Pneumatic reducing, manifolds or regulating valves without an electrical input.
# AIR CONDITIONING & REFRIGERATION SERVICES

**WORK CENTER # - 945**

<table>
<thead>
<tr>
<th>A/C &amp; R Shop - Basic Functions</th>
<th>Inspect</th>
<th>Install</th>
<th>Repair</th>
<th>Replace</th>
<th>Align</th>
<th>Overhaul</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/C &amp; R Systems:</td>
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<td>Centrifugal Compressor Mechanical Seal</td>
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<tr>
<td>Reciprocating Compressor (York &amp; Carrier)</td>
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<tr>
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<td>Discharge Valves</td>
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<td>Mechanical Capacity Control Systems</td>
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<td>Evaporator Pressure Regulators</td>
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<td>Henry Pack Less Valves</td>
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<td><strong>Dehydrators</strong></td>
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<tr>
<td>HP Dehydrators (Freon Type or Desiccant)</td>
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<td>LP Dehydrators (Freon Type or Desiccant)</td>
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<td><strong>HP Air Compressors</strong></td>
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<tr>
<td>Dresser-Rand HPAC Model 30NL30</td>
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<td>RIX HPAC Model 5R5 (air end only)</td>
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<td>Worthington/Dresser-Rand Model 20NL 13/20</td>
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<td><strong>MP Air Compressors</strong></td>
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<td>Sauer MPAC Model WP121L (LPD-17 and LCS Class)</td>
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<td><strong>LP Air Compressors</strong></td>
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<tr>
<td>Dresser-Rand LPAC NAXI 100-3 thru 4A/B (air end only)</td>
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<td>RIX LPAC 2JS2B-150</td>
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<td>RIX LPAC STAR 200</td>
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<td><strong>Hydraulic Systems:</strong></td>
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<td>Actuators</td>
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<td>Control Valves</td>
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<td>Steering Gear Pumps</td>
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<td><strong>Weight Handling Systems (SOT III):</strong></td>
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<td>Cargo Elevators</td>
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<td>Vertical Package Stores Conveyors</td>
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<td>Dumbwaiter</td>
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<td>Torpedo Strike Down and Lift System</td>
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<td>Weapons Elevators</td>
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<td><strong>Material Assessments:</strong></td>
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</tbody>
</table>

**NOTE:**

*C900 does not have the capability, resources or licenses to handle, store, or provide any type of refrigerant or compressed gas.* The capabilities listed above refer to system hardware, any and all movement of refrigerant or compressed gas is considered interference and the responsibility of Ship’s Force (i.e. evacuating, storage, transfer, pressurizing, and or charging).
1. Fiscal Year engraving work is routed and authorized through the Ship Superintendent on a FY Engraving Request.
2. Fiscal Year locksmith work is considered non-intrusive, and requested through the Ship Superintendent. Some examples of non-intrusive work include; combination changes (combination is known), manipulation (combination is not known), simplex door combination changes (mechanical, if combination is known), cipher door combination changes (electronic, if combination is known), and key duplication.
CODE 950 – COMBAT SYSTEMS PRODUCT FAMILY

CODE 951 – CIWS / 25MM
  *CIWS GAHS
  *MK38 25MM CHAIN GUNS

CODE 952 – ORDNANCE
  *SURFACE VESSEL TORPEDO TUBES
  *VERTICAL LAUNCH SYSTEM
    CELL HATCH / DELUGE VALVE / DELUGE FLUSH/WATER TREATMENT

CODE 953 – 2M / GOLD DISK / FIBER
  *MINIATURE/MICRO-MINIATURE (2M) MODULE TEST & REPAIR (MTR)
  *GOLD DISK DEVELOPMENT
  *FIBER OPTIC REPAIR

CODE 954 – SRBOC REPAIR

CODE 957 – ANTENNA REPAIR

CODE 959C - LEVEL 1 GAUGE CALIBRATION
CLOSE-IN WEAPONS SYSTEM AND MK38 25MM
WORK CENTER # - 951

STANDARD SERVICES - Applies to all applicable classes of US Navy surface ships

<table>
<thead>
<tr>
<th>Basic Functions</th>
<th>Inspect</th>
<th>Removal / Replace</th>
<th>Trouble Shoot</th>
<th>Repair / Refurbish</th>
<th>Overhaul</th>
<th>Preserves / Paint</th>
<th>Test</th>
<th>Ship to Shop</th>
<th>Training</th>
</tr>
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<tbody>
<tr>
<td>CODE 951 CIWS GAHS / 25MM CHAIN GUN</td>
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<td>25MM CHAIN GUN MK-38 MOD 1 (See Note 2)</td>
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<td>25MM CHAIN GUN MK-38 MOD 2 (M242 Cannon only)</td>
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<td>LCS MK-110</td>
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Notes:
1. CIWS GAHS Repair: See SERMC Waterfront Maint. Note 12
2. MK38 25MM Chain Gun Repair: See Waterfront Maint. Note 9
STANDARD SERVICES - Applies to all applicable classes of US Navy surface ships

<table>
<thead>
<tr>
<th>Basic Functions</th>
<th>Inspect</th>
<th>Removal / Replace</th>
<th>Trouble shoot</th>
<th>Repair / Refurbish</th>
<th>Overhaul</th>
<th>Preserve / Paint</th>
<th>Test</th>
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**Notes:**
3. SVTT Repair: See SERMC Waterfront Maint. Note 14
4. VLS Cell Hatch Repair: Hatches are rotatable pool coordinated via FTA
5. VLS Deluge Valve OVHL; Flush/Water Treatment: See SERMC Waterfront Maint. Note 18
STANDARD SERVICES - Applies to all applicable classes of US Navy surface ships

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<thead>
<tr>
<th>Basic Functions</th>
<th>Inspect</th>
<th>Removal/Replace</th>
<th>Trouble Shoot</th>
<th>Repair/Refurbish</th>
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**Notes:**
## SRBOC REPAIR
WORK CENTER # - 954

STANDARD SERVICES - Applies to all applicable classes of US Navy surface ships

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<th>Removal / Replace</th>
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**Notes:**
7. SRBOC Repair: See SERMC Waterfront Maint. Note 13
# ANTENNA REPAIR
WORK CENTER # - 957

## STANDARD SERVICES - Applies to all applicable classes of US Navy surface ships

<table>
<thead>
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<th>Basic Functions</th>
<th>Trouble Shoot</th>
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<th>Overhaul</th>
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<td>(all see Note 8)</td>
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**Notes:**
STANDARD SERVICES - Only applies to Cyclone Class Patrol Craft (PC's) and Littoral Combat Ships (LCS)

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<td>Level 1 Instrument Calibration (Note 1 &amp; 2)</td>
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**Notes:**
1. Calibration will only be done on Shipboard Installed instruments.
2. Primary purpose of Code 959C is to support LCS ships due to the fact that they do not have a Level 1 FCA onboard. Support to other platforms that do have a Level 1 FCA onboard will be done on a case by case basis at the discretion of the Production Controller.
CODE 970 – DIVERS PRODUCT FAMILY

CODE 970 – DIVING SERVICES

* STANDARD DIVING SERVICES
* SUBMARINE DIVING SERVICES
* HYPERBARIC AND NON-DIVING SERVICES
## STANDARD DIVING SERVICES

<table>
<thead>
<tr>
<th></th>
<th>INSPECTION/PHOTOGRAPHY</th>
<th>INSTALL/REMOVE</th>
<th>SECURITY INSPECTIONS</th>
<th>POLISHING</th>
<th>REPLACEMENT/REPAIR</th>
<th>LIGHT RECOVERY</th>
<th>HUB SEAL REPAIR</th>
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Note 1: NAVSEA Support

## SUBMARINE DIVING SERVICES - DIVING AUTHORIZED ONLY OUTSIDE RADIATION EXCLUSION AREAS

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<th>INSPECTION/PHOTOGRAPHY</th>
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<th>SECURITY INSPECTIONS</th>
<th>POLISHING</th>
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## NONDIVING SERVICES

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<th>INVIEW</th>
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### STANDARD HYPERBARIC SERVICES

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CODE 980 – LCS & MAT GROUP PRODUCT FAMILY

CODE 980 – LCS TEAM
  * LCS-1 CLASS PREVENTIVE MAINTENANCE SERVICES

CODE 916 – MAINTENANCE ASSIST TEAMS
  * SURFACE SHIP MAINTENANCE ASSIST TEAMS (MAT)
**PMS SERVICES**

**WORK CENTER # 980**

**STANDARD SERVICES – APPLIES TO LCS-1 CLASS SHIPS ONLY.**

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**Notes:**
1. Preventive maintenance are performed only on scheduled maintenance requirements, accepted by SERMC, denoted by a “+” sign in the applicable Maintenance Index Pages (MIPs).
2. A 2-kilo is required for each MIP included in a PMAV.
### SURFACE SHIPS MAINTENANCE ASSIST TEAMS (MAT)

**WORK CENTER # 916**

**STANDARD SERVICES – APPLIES TO ALL SHIPS WITH EXCEPTION OF LCS-1 CLASS, (See notes).**

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<th>REPAIR</th>
<th>PMS</th>
<th>TRAINING</th>
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<td><strong>DECK MAT (DMAT)</strong></td>
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<tr>
<td>Boat davits, sliding pad eyes, J-bar davits, life lines.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td><strong>VALVE MAT (VMAT)</strong></td>
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<tr>
<td>Main and secondary drainage components and remote operators.</td>
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<td><strong>AUXILIARY MAT (AMAT)</strong></td>
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<tr>
<td>Air-Conditioning and Refrigeration (AC&amp;R), steering systems and anchor windlass.</td>
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<td>X</td>
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<tr>
<td>Standard Navy watertight doors and fittings.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>ELECTRICAL MAT (ELMAT)</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Circuit breakers and motor controllers.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>GALLEY AND LAUNDRY MAT (GLMAT)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laundry and galley equipment.</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td><strong>RIGID INFLATABLE BOAT MAT (RIBMAT)</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Rigid inflatable boat and their support equipment.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>COMPRESSED AIR SYSTEMS MAT (AIRMAT)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low pressure air systems, flasks and supporting components.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>GAS TURBINE MAT (GTMAT)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas Turbine systems</td>
<td>X</td>
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</table>
Notes:
1. MAT concept is to bring Regional Maintenance Center (RMC) assessment, repair and training capability and capacity on shipboard systems to establish a “Shop to Ship, Find-Fix Document” support effort at the shipboard level by employing RMC expertise in critical systems.
2. Conduct of all MAT visits will be governed by a Memorandum of Agreement (MOA) between SERMC and the ship CO. The MOA specifies SERMC and Ship responsibilities, assist visit schedule and required reports.