



Damage Control Waterfront Seminar 2015



Surface Ship Safety Seminar 2015



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DC Safety Checklist Areas

- Fixed CO2 Flooding
- AFFF Stations/Systems
- HALON/HFP Systems
- Fresh Water Firefighting System
- General Workshop
- Compressed Gas Cylinders
- Gas Free Engineering
- General Safety (Air Flow Alarms, Safety Nets, Explosion Proof Lighting)
- Damage Control Petty Officer (Fire Stations, Portable Extinguishers)
- Water Mist System
- SCBA
- SCBA Charging
- SAR/SCBA
- Portable Firefighting Pump/Generator/Jettison Racks
- Pollution Abatement
- Galley Fire Protection
- CHT / H2S Alarm Systems
- Countermeasure Washdown System
- Fire Marshal (Housekeeping / Stowage, Zone Inspections)
- Underway Operations

CY14 Top 10 DC Discrepancies

1. **85.7%** Airflow Alarms were not maintained, alarm set points were not 70% of normal, or alarm sounders were inoperative or showed evidence of tampering.
2. **76.4%** CHT Spill Kits were not maintained IAW AEL 2-360044010/11.
3. **71.1%** Portable CO2 and PKP extinguishers were not maintained in periodicity IAW 6641/004 Scheduling Aid #10.
4. **69.6%** Compressed Gas Cylinders were not secured in Grade B Shock Mounts IAW GSO 671c and NAVSEA DWG 5184287 Rev A.
5. **65.5%** of wash-up facilities in sewage spaces were not stocked or operational IAW NSTM 593-4.3.2.G

CY14 Top 10 DC Discrepancies (Cont'd)

6. 65.0% of SCBA were not stowed with mask, second stage regulator on holster, dust cover on quick-charge connection, cylinder pressure greater than 4000psi, and/or securing strap fastened.
7. 63.6% of explosion-proof lighting fixtures were missing the aluminum or plastic anti-pilferage seal.
8. 63.3% of explosive-proof lighting fixtures had loose globes or loose retaining rings.
9. 60.0% of H2S detection system maintenance logs did not have dates of calibration or sensor installation recorded IAW 4361/015 and Tech Manual.
10. 56.7% of SOPVs had loose or missing cover fasteners, were missing a non-ferrous threaded plug, or had exposed wiring from the base plate.

Daily Fire Marshal Report

Ref: NTTP 3-20.31, 2.1.20 (Fire Marshal)

1. Housekeeping

- a. Trash receptacles (covered)
- b. Storeroom stowage
- c. Safe stowage of accumulated flammable materials
- d. Safe stowage of HM/HW.

2. Firefighting equipment, aqueous film-forming foam (AFFF) stations, halon stations, fixed carbon dioxide(CO₂), and aqueous potassium carbonate systems

- a. Missing items
- b. Completeness of stations
- c. Condition of hoses, wrenches, and nozzles.

3. Safety precautions

- a. Properly posted and up-to-date
- b. Complete.

4. Flammable liquids

- a. Proper stowage
- b. Adequate protection (CO₂, dry chemical (purple K powder (PKP))).

Daily Fire Marshal Report (cont'd)

5. Smoking regulations posted and enforced

6. Welding and burning

- a. Gas free and/or hot-work certificate issued (date/time)
- b. Fire watches qualified, properly indoctrinated
- c. Assignments made and posted
- d. Welding and burning leads or hoses properly run and protected
- e. Adequate ventilation.

7. Stowage of compressed gas

- a. Tight connections/proper cap and covers in place
- b. Properly secured.

8. Fume-tight/explosive-proof light covers

- a. Installed with proper gasket
- b. Properly situated and adequate.

9. Grease filters/traps, Gaylord hoods

- a. Installed (in use)
- b. Clean, with cleaning schedules posted.

Daily Fire Marshal Report (cont'd)

10. Ventilation/air conditioning ducts/flammable storage ventilation

- a. Ducts clean
- b. Inspection covers in place
- c. Airflow indicators operative.

11. Material condition properly set to resist fire spread.

Fire Marshal Reports should be treated as a daily status of fire protection systems and fire prevention enforcement. It should not be used as a tool to call out personnel for non-compliance. It should be used similarly to the purposes of the Departmental Eight O'clock Reports. If items can be corrected within 24 hours then the cognizant department/division should be taking mitigating action. If the item requires a longer period of time to correct, then it should be addressed in a JSN or by an annotation scheduling the accomplishment of PMS. Although ER09 is responsible for the maintenance of items, the division for which the item is located is also responsible for ensuring the equipment within their space is properly maintained. Some discrepancies may require personnel to issue a Safety Hazard Report (CNSF 3502.1) and/or publish a TSO to address the mitigation of the hazard.

Most Dangerous



USS CARR (FFG-52)

Responsible for 256 reported
injuries in FY14



2nd Most Dangerous



Responsible for 176 reported injuries in
FY2014

Afloat Operational Safety Assessment (AOSA)

- Plan (What is the objective and how are we going to meet it?)
- Brief (What is the procedure? Who are the players? Go/No-Go Criteria? When is it going to occur?)
- Execute
- Debrief (Did it go as briefed? How did we adjust? What do we need to do better the next time?)

AOSA

- Halon Demonstration

- Plan

- What procedures are we using (18M-1R)?
 - Tag out?
 - Time frame (SOE)

- Brief

- Who is where? Are they properly trained and equipped?
 - Is all PPE available and with the individual?
 - Does everyone understand the procedure?
 - Who is conducting and confirming required tag out?
 - What is the GO/NO-GO criteria?
 - Who is in-charge? Who has permission granting authority?

AOSA

- HALON Cont'd

- Execute

- All personnel on station
 - Tag out verified
 - Permission granted
 - Sat/Unsat
 - System restored / Tags removed

- Debrief

- Is there input from ALL team members?
 - What went well?
 - What didn't go as planned/briefed?
 - Did we have any "close calls"?
 - How do we adapt the plan based on lessons learned?

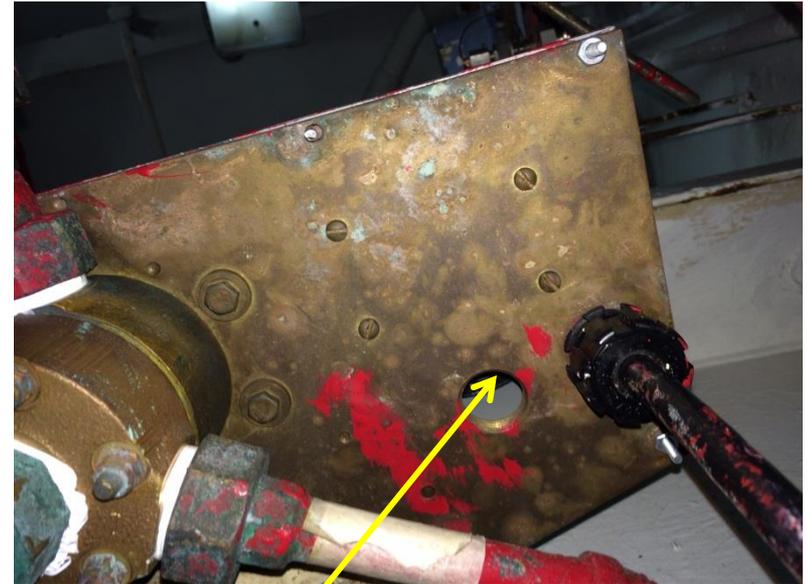
AOSA Criteria

- Was the event adequately Planned, Briefed, Executed and Debriefed?
- Were there any safety items violated?
 - PPE
 - Tag Out
 - Material
 - Procedural Compliance
- Was leadership involved all facets of the process?
- Were all personnel trained to the level required for their assignment?
- Were there any changes made during the event that should be lessons learned and immediately implemented in the process?
- Was Command and Control (C2) effective in the safe execution of the event?

AFFF System

Missing Tamper Seal

Access Lid does not sit flush



Missing bolts on cover

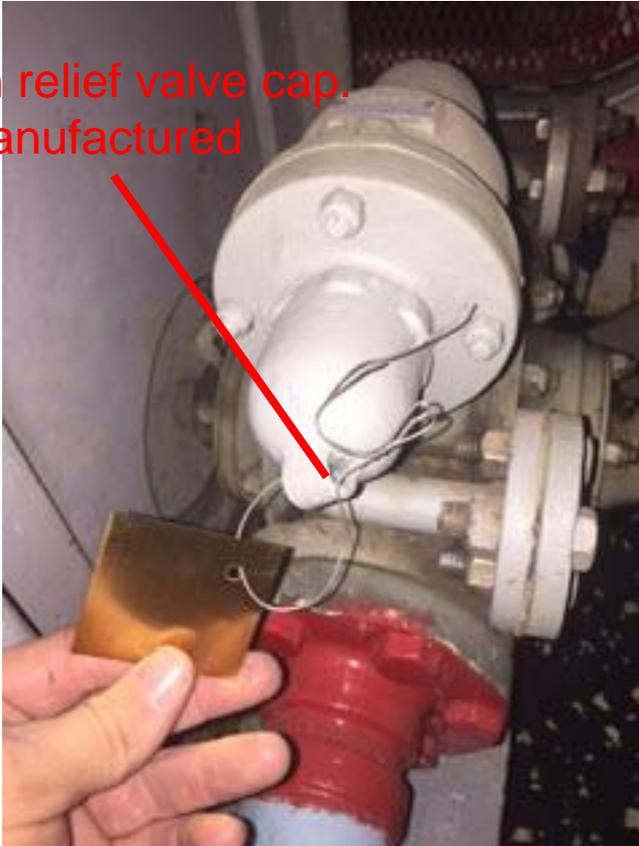
Missing non-ferrous plug

AFFF System



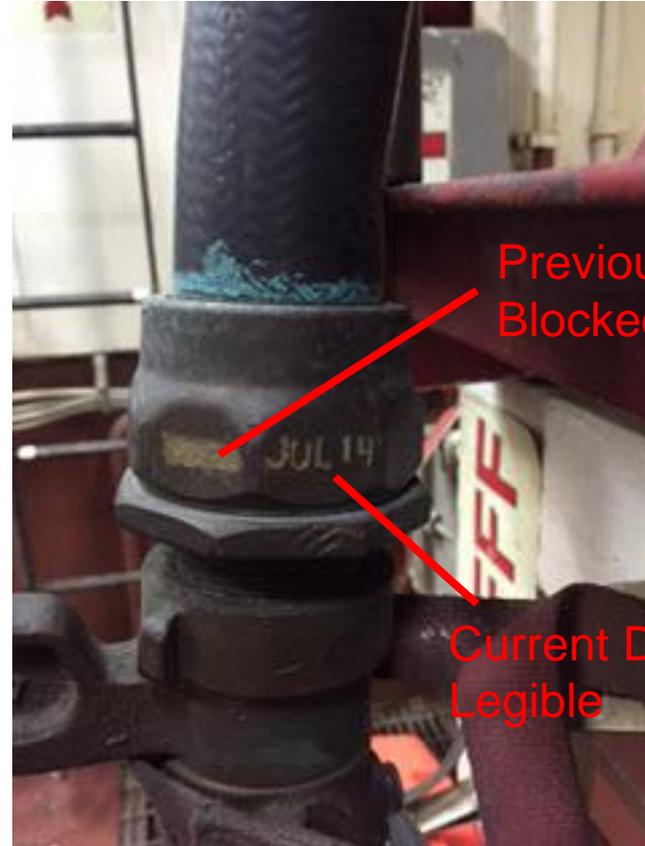
AFFF System

Tag on relief valve cap.
S/F manufactured



Previous Date
Blocked Out

Current Date
Legible



AFFF Solenoids

Discrepancies

- Wire/cable hole in base plate is not secured with a non-ferrous plug (plastic FME plug still installed) or not plugged at all.
- Signs of leakage from stem o-ring tell-tale hole or drain lines
- Stem o-ring tell-tale hole painted over or clogged up with lubricant/verdigris
- Cover missing screws, warning and label placards

Ref: PMS MIP 5551/029 Q-1

Solution

- Conduct PMS IAW MIP 5551/029 Q-1

HALON Actuation Cylinders



HALON Cylinder Room (poor housekeeping)



HALON Cylinder Room (good housekeeping)



USS HUE CITY (CG-66)

General Workshop



USS ASHLAND (LSD-48)

General Workshop



USS HIGGINS (DDG-79)

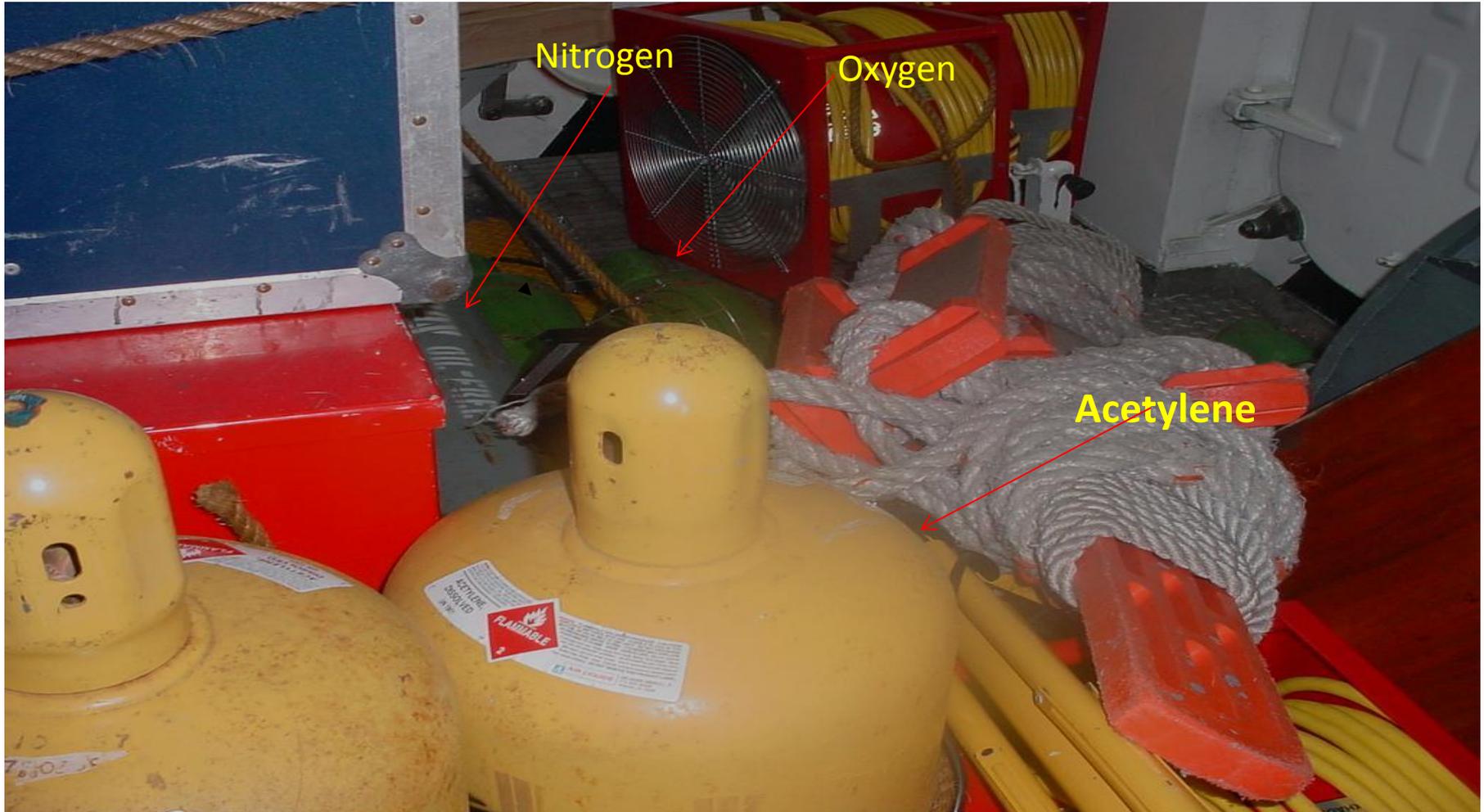
Pedestal Grinder with warning and PMS requirement posted



USS Ronald Reagan (CVN-76)

Compressed Gas Cylinders Stowage/Segregation

69.6% had compressed gas cylinders that were not Grade "B" shock mounted and not segregated.



Compressed Gas Cylinders Cont...



Grade B Shock Mounts

Ship's Force manufactured
"correct" Grade B Shock Mount



Manufactured "incorrect" Grade B
Shock Mount (Cylinders cannot be
removed independently of one another)



Acetylene Cylinder Explosion



Compressed Gas Cylinders Cont...

Discrepancies:

- Cylinders were not properly stowed (restrained by brackets to prevent both vertical and horizontal movement – Grade “B” shock mounting). Ref: GSO 671 C
- Cylinders were not segregated (oxidizers, inert and flammables were stored together). Ref: OPNAVINST 5100.19 (series) C1102 D(3), NSTM 074-10.1.2-3, ANSI/ASC 49.1

Solutions:

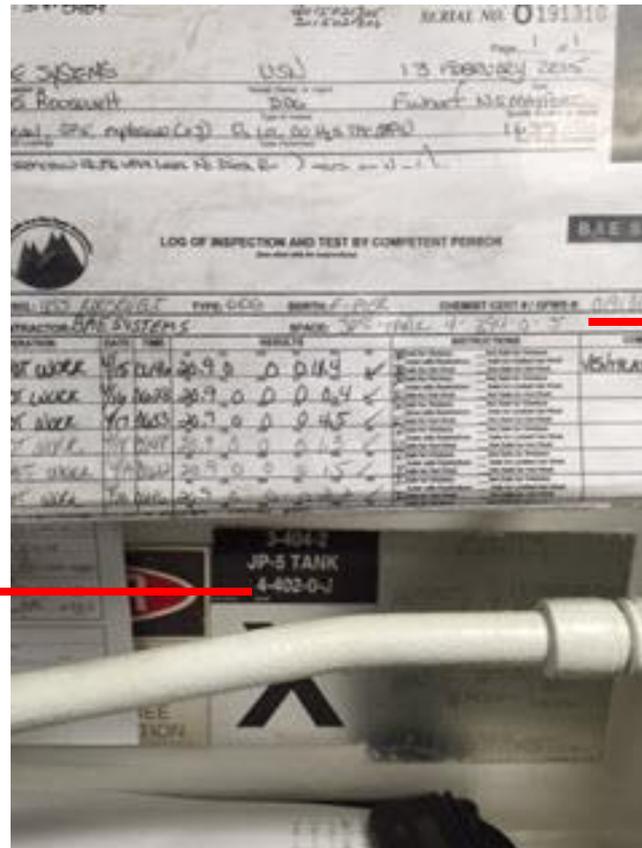
- Retaining brackets can be manufactured by S/F HTs (NAVSEA DWG 5184287 REV A) or ordered based on bottle size.
- Separate bottles and utilize designed cylinder storerooms and weather deck storage areas.

Gas Free Engineering

Of the Ships Surveyed:

- 54% had issues with the proper administration and issuance of Gas Free Certificates.
Ref: NSTM 074 Vol 3 para. 074-20.5
- 32% lacked annual audit of the Gas Free Program by the Ships Safety Officer. **Ref: NSTM 074 Vol 3 para. 074-18.10**
- 25% had problems with the Gas Free Personnel designation letters. **Ref: NSTM 074 Vol 3 para. 074-18.8.a**
- 45% did not conduct the required Gas Free familiarization training to ships force personnel.
Ref: NSTM 074 Vol 3 para. 074-18.9
- 22% did not complete all recertification requirements for GFE personnel.
Ref: NSTM 074 Vol 3 para. 074-18.10 a through e

Shipyards Gas Free “Log of inspection and test by Competent Person”



4-394-0-J

4-402-0-J

SCBA

Of the ships surveyed:

- 65% had issues with proper stowage which can contribute to 2nd – stage regulator gasket damage, contamination via the quick-charge port, damage/scratches to mask, or damage to the unit.

Ref: PMS MIP 5519/016 M-1R

- 42% had bottles that were either not maintained above 4000 psi or were out of hydrostatic test periodicity.

Ref PMS MIP 5519/016 M-2

Ref PMS MIP 5519/016 S-1

- 28% had issues with SCBA Air Quality Test logs and tubes.

Ref PMS MIP 5519 Q-1R

- 20% lacked documentation of the required functional tests on the SCBA's.

Ref: PMS MIP 5519/016 36M-1

SCBA Stowage IAW MRC & TM



SCBA Stowage

ALL SCBA'S
SHOULD BE
STOWED AS
PICTURED.



Explosion-Proof Lighting

63.6% had material issues associated with explosion proof lighting.



Correct Bulb



Incorrect Bulb



Lead Ring Gaskets

NOTE: VERIFY THAT THE FIXTURE IS AN EXPLOSION PROOF FIXTURE (SYM 48.2 OR SYM 68.2) AND NOT THE NON-EXPLOSION PROOF VARIANT (SYM 112) BY SEARCHING FOR AN IDENTIFICATION LABEL. REF: PMS MIP 3301/008 18M-1

Explosion-Proof Lighting

Discrepancies:

- Loose globes due to missing/damaged lead gaskets
- Incorrect bulb/inoperable fixture
- Missing lead-wire or anti-pilferage seal

Ref: PMS MIP 3301/008 S-1; 3301/008 18M-1

Solution:

- Ensure your ship has ownership of the MIP 3301/008.
- S/F electricians, at a minimum, should carry this MIP.
- The S-1 (visual inspection) can be accomplished by any PO3.
- Recommend any corrective actions required by the 18M-1 (inspect/repair) be accomplished by a qualified electrician.

Air Flow Monitors

85.7% did not use and maintain their Airflow Alarms correctly.



Air Flow Monitors

Alarm Set Point must be at 70% of the calculated Normal FPM IAW A-11R. This example is set at 48.6%.



PMS Label not IAW MRC A-11R and not properly filled out.

Flow Rate calculated IAW A-11R

Air Flow Monitors



Tape on "Silence" button



Tape over sounder



Ear Muffs over sounder.

Ventilation Exhaust



Air Flow Monitors

Discrepancies:

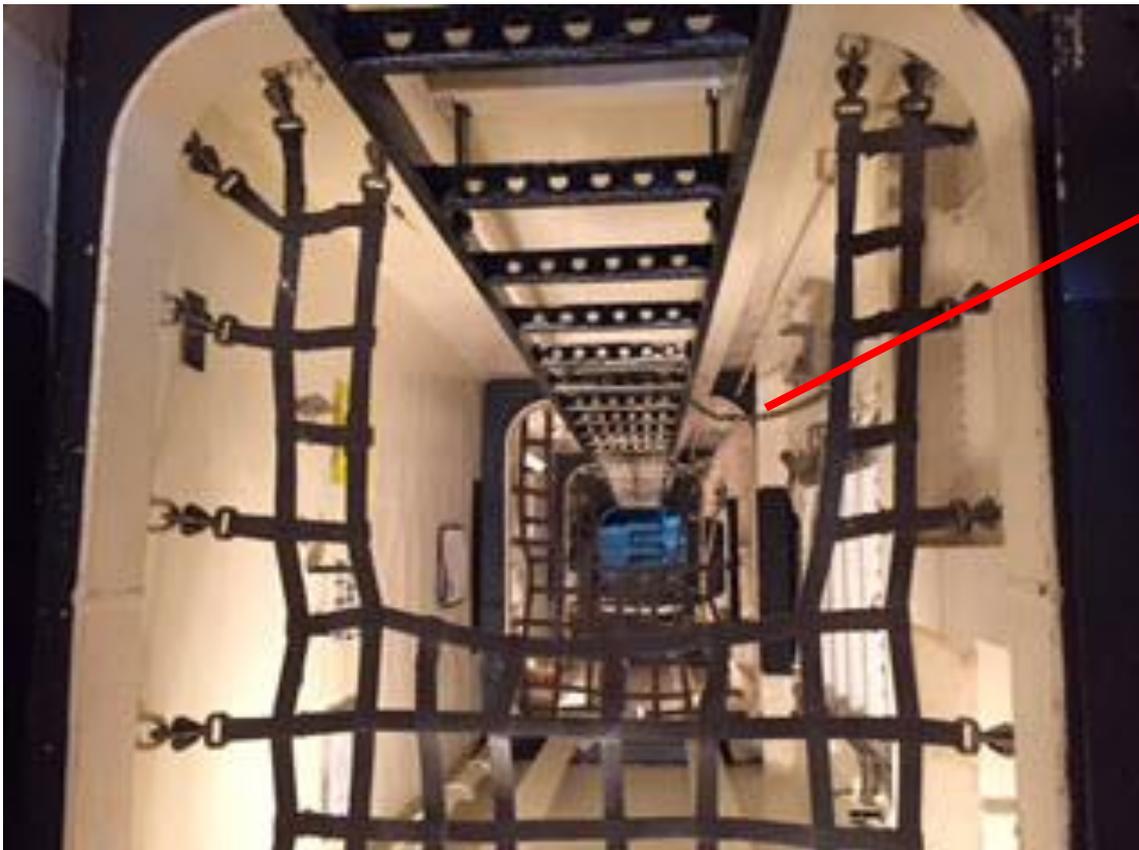
- Alarm setpoints (zeroed out, set too low)
- Silenced alarm or sounders taped over or removed
- Alarms in cut-out
- No power available
- Sensors painted, missing, tampered with or inoperative
- PMS coverage/ownership

Ref: PMS MIP 4361/051

Solution:

- Accomplish PMS IAW MIP 4361/002.
 - PMS requires maintaining a log for all airflow alarms (70% of ships either do not have a log, not being properly maintained or are not notifying supervisors when the alarms fail PMS).
- Verify that ventilation is operational

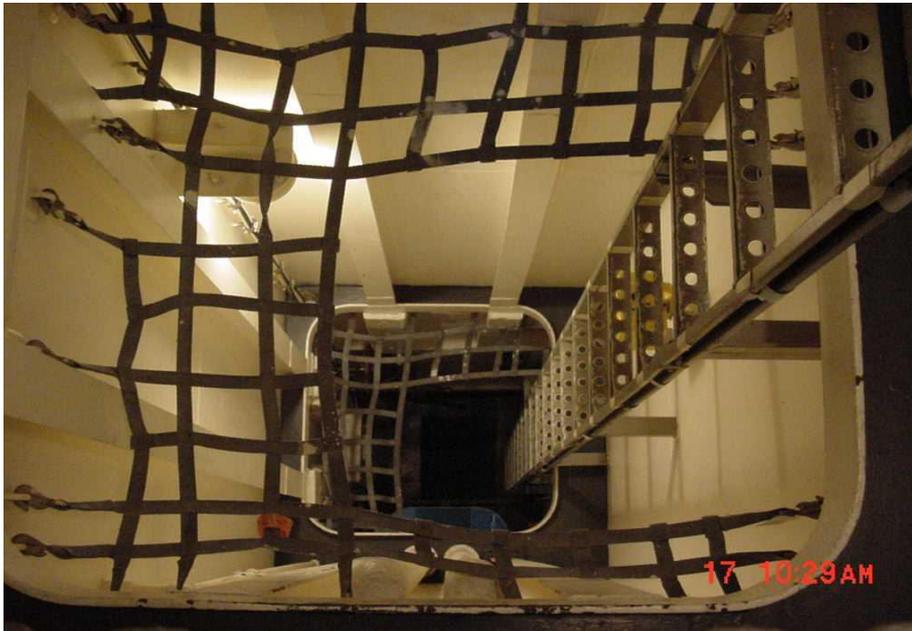
Safety Chains



Safety Chain
not in place
at trunk
access

Safety Nets

35% of safety nets in vertical trunks were not maintained in accordance with requirements.



Safety Nets

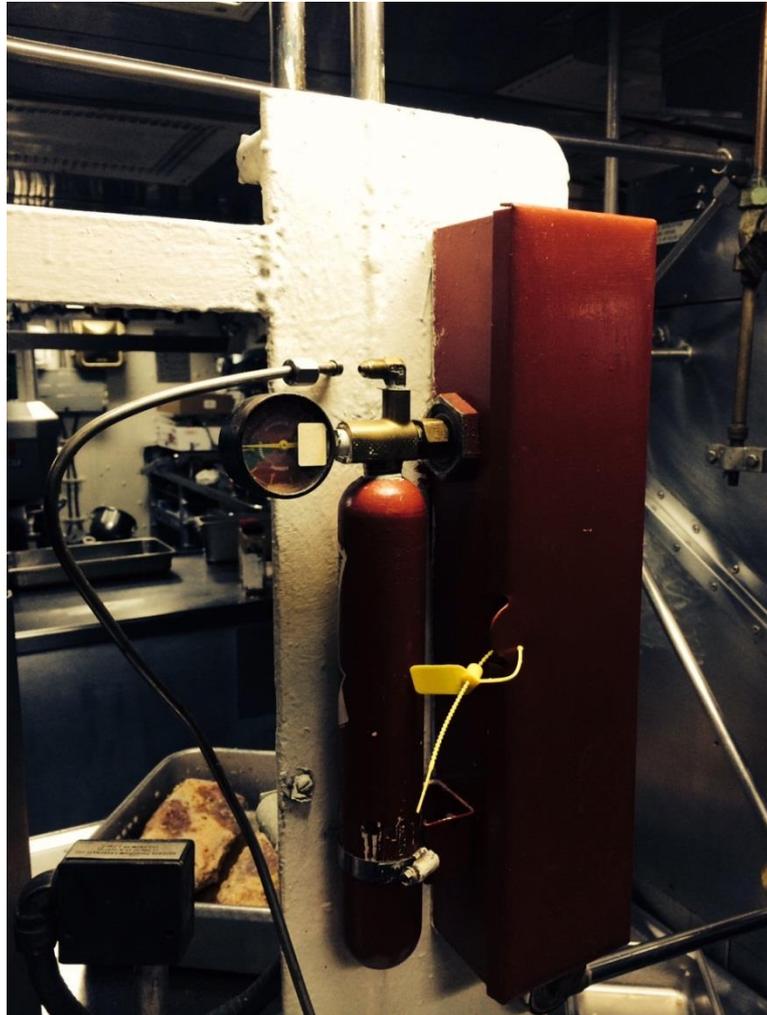
Discrepancies:

- Net access was too wide
 - Distance between ladder and net (length) greater than 16 to 21 inches
 - Width greater than 24 +/- 2.5 inches
- Excessive sag (must be 4 to 9 inches)
- Corroded snap hooks
- Missing weight test tag (nets made after 2004 are required to have them attached)
- Inadequate PMS coverage

Solution:

- Accomplish PMS IAW MIP 6122/001 S-2.
- Ensure that WC owning access trunks with nets carry MIP
- Additional information for inspecting and correcting deficiencies to nets can be found in MSG R030510Z JUN 04/NAVSEA DWG 804-5184163 REV (A).

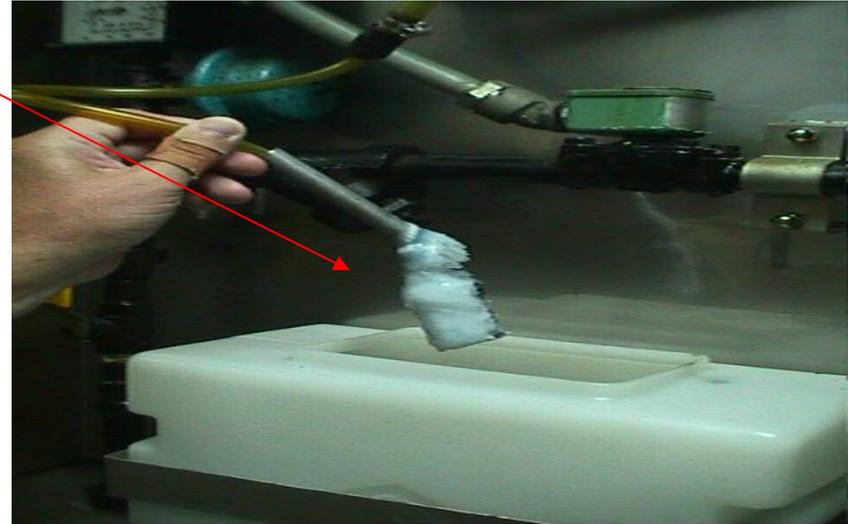
APC, Range Guard & Gaylord Hood



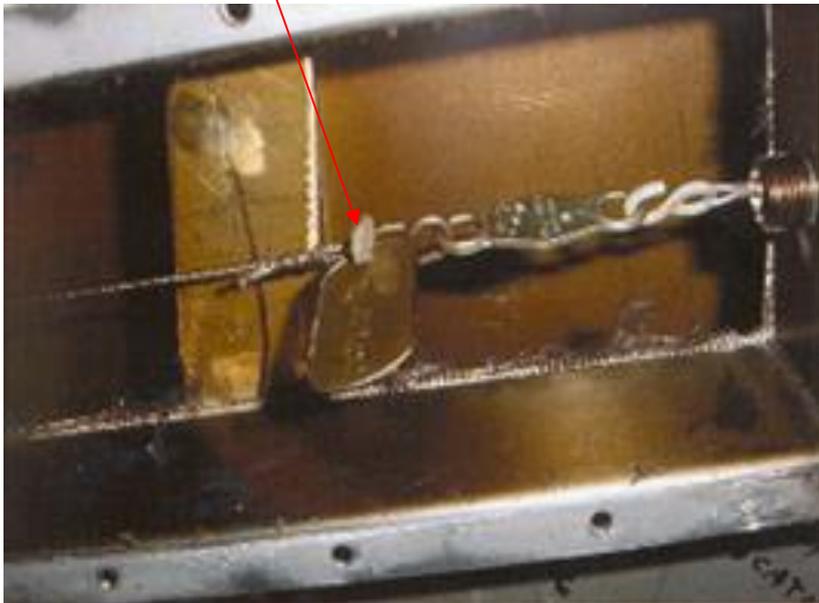
APC, Range Guard & Gaylord cont...

46% did not demonstrate accomplishment of daily PMS on Gaylord Hoods.

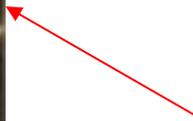
Detergent tank empty or had congealed soap



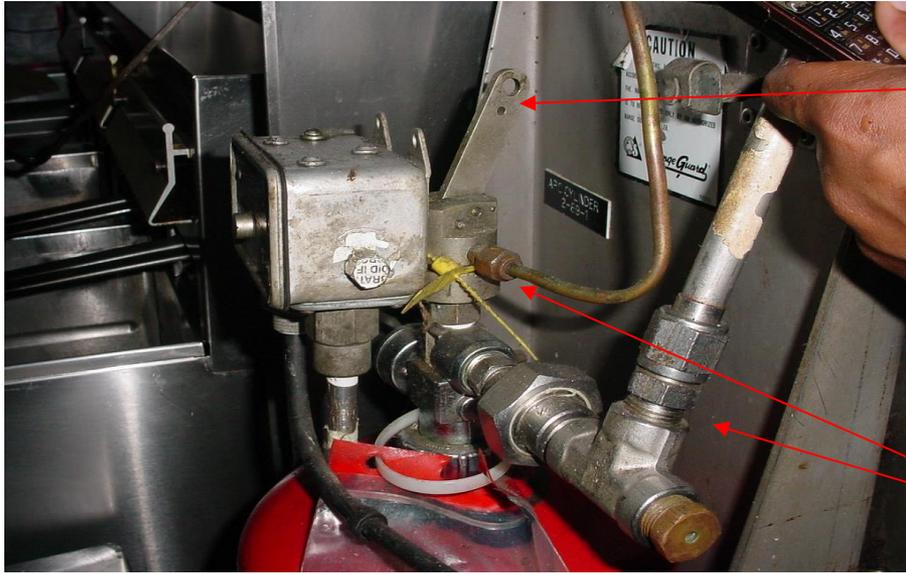
Fusible link PMS tag not affixed



Appliance detector assemblies not cleaned

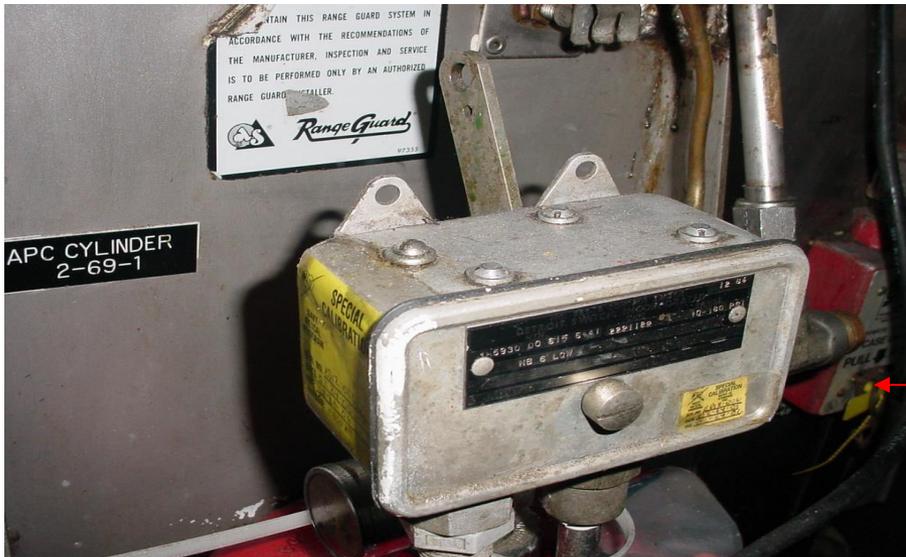


APC, Range Guard & Gaylord Hood



APC Actuator Head obstructed

APC Actuation and Discharge Piping have loose fittings



Detroit switch out of calibration

APC, RANGE GUARD, & GAYLORD

Solution:

- Accomplish MIP 5556 series (ship specific) PMS completely
- Verify APC release pressure switch calibration periodicity with FCA1 workcenter.
- Ensure S-2 division conducts MIP 5121 series (ship specific) R-2D (daily when in use)!!! Recommend duty fire marshal inspects daily.

CHT Pump Rooms and Spill Kits

76.4% had incomplete CHT Spill Kits

60.0% did not have accurate H2S Detector System Log Books.

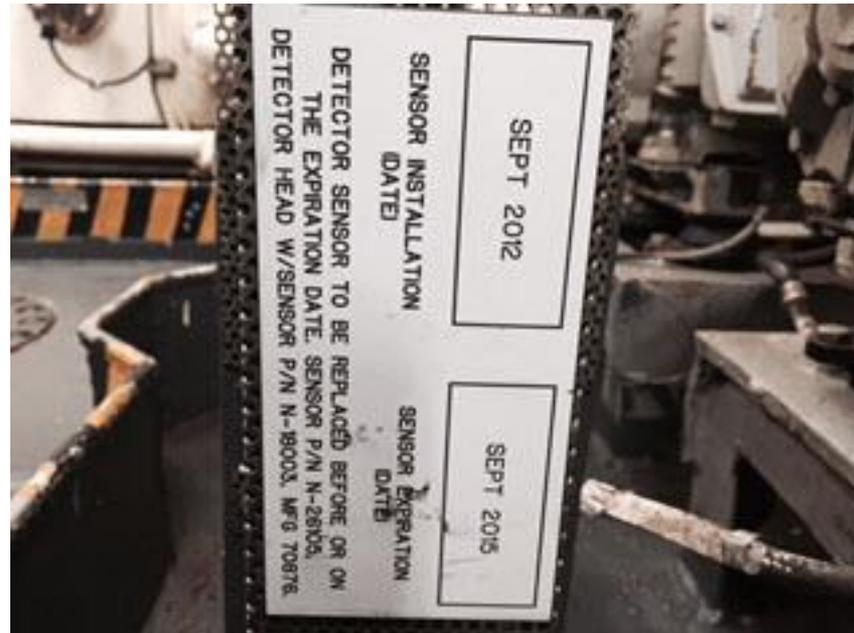
Discrepancies:

- Missing Health Warning Placards and Discharge Connection Station Placards
Ref: NSTM 593 para. 593-4.3.5.2
- Personnel Protective Gear (Spill Kits) are missing items
Ref: NSTM 593 para. 593-4.3.2.j
- Calibration Gas for conducting H2S Detection Alarm PMS is expired
Ref: PMS MIP 4361/015 4M-1
- H2S Detector System log book is missing sensor installation dates
Ref: PMS MIP 4361/015 36M-1

Solution:

- Ensure spill kits are maintained IAW AEL 2-360044010 and AEL 2-360044011.
- Ensure H2S alarm PMS is being accomplished and review logs periodically .

CHT/VCHT Pumproom H2S Sensors



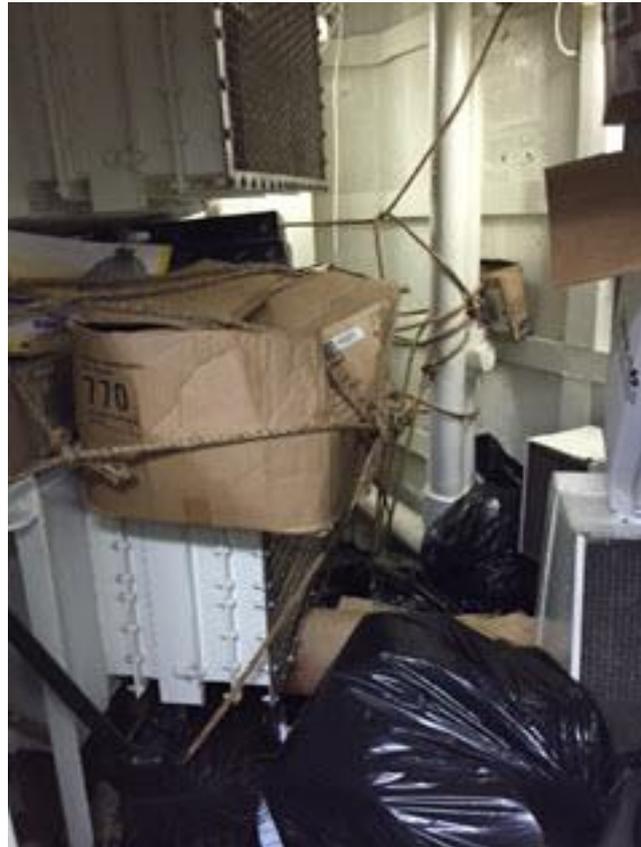
Fire Prevention

Improper storage of flammable materials



Fire Prevention

Improper storage of combustible materials in a Fan Room



???????

IN THE EVENT OF A VISIBLE AND/OR
AUDIBLE REFRIGERANT LEAK
(A CLOUD CAUSED BY REFRIGERANT)
(SOUND OF GAS ESCAPING)
**HOLD YOUR BREATH
AND
IMMEDIATELY EVACUATE**



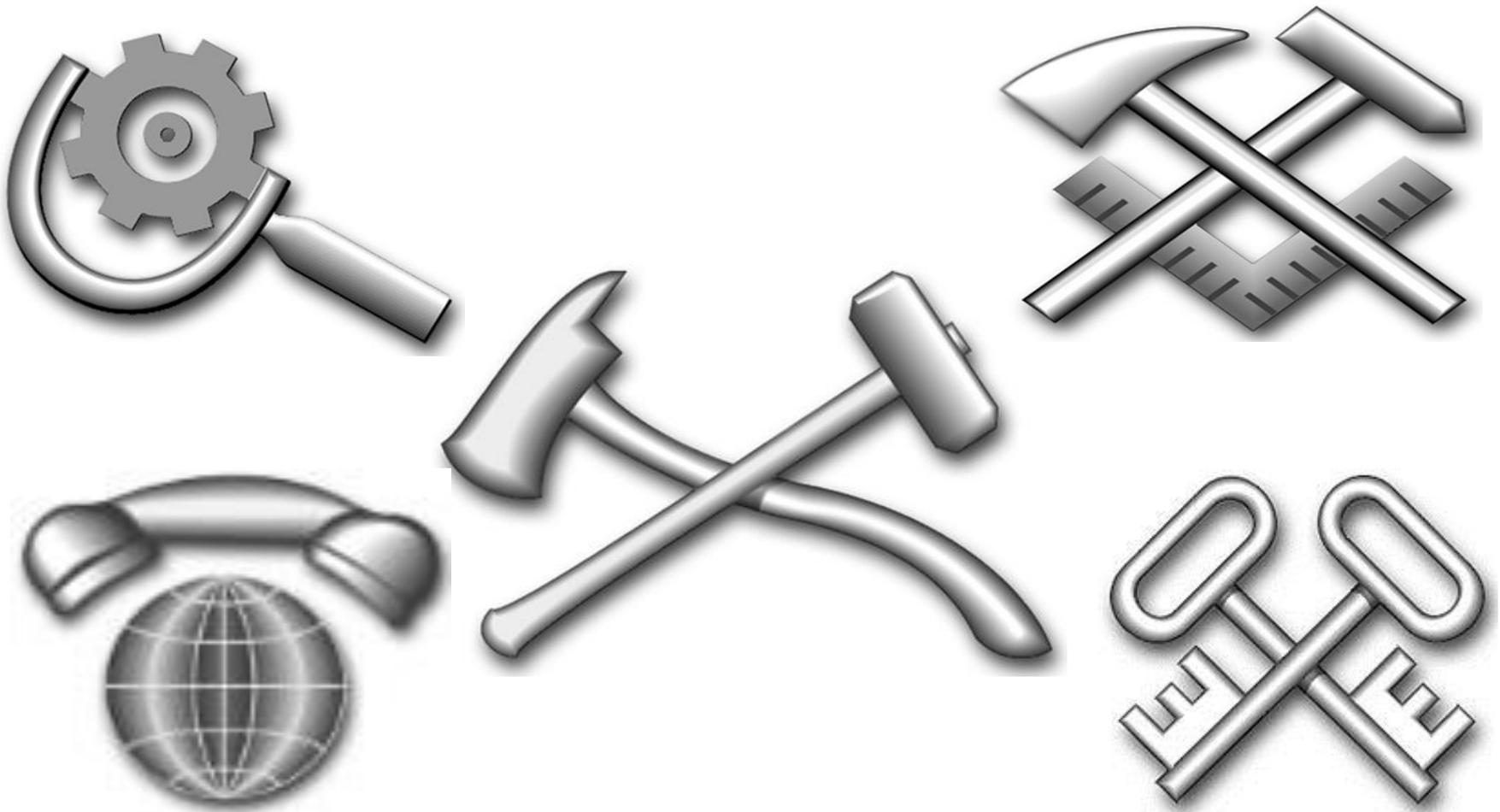
FYI...

Checklist Breakdown:

- PMS related items – 54%
- OPNAVINST 5100.19 (series) related – 24%
- Policy/Procedure related (GSO, NSTM, etc.) – 22%

Did You Know?

- Follow the Naval Safety Center on Facebook at <https://www.facebook.com/NavalSafetyCenter>
- Subscribe to my Weekly DC Safety Notes at justin.m.jones1@navy.mil
- Follow me and other Damage Control personnel on the Damage Controlman Facebook page at: <https://www.facebook.com/groups/168742332823>
- Visit the Naval Safety Center webpage for the latest in safety news and programs at <http://www.public.navy.mil/comnavsafecen/>
- Follow me on Twitter [@SafetyDCC](https://twitter.com/SafetyDCC)



???QUESTIONS???