Zone Inspection Criteria

Here is a power point to help train Fire Marshals and Khaki inspectors
What to look for and how to do a zone inspection  (DCCM Terry Wylie)
Damage Control and System Marking Requirements

- Compartment bullseyes are to be applied in each space or compartment to identify the space, setting forth the frames which bound the space and the division responsible.
  - A bullseye should be visible from each access to the space.
  - Lettering will be two inches in height applied over a 12-inch high by 15-inch wide photoluminescent label or yellow painted area.
  - For photoluminescent adhesive material, use blue retro-reflective lettering, two inches high; for painted bullseyes, use black lettering, two inches high.
- Interior fire station bullseyes are to be applied as near as possible to each interior fire plug, sized to best fit the area available, preferably immediately above the fire plug valve.
  - The bullseye will identify the fire plug number and the valve number(s) necessary to isolate the fire plug in the event of damage.
  - The photoluminescent painted area background is 12 inches high by 15 inches wide and has red painted lettering, two inches high.
  - Photoluminescent adhesive material is 12 inches high by 15 inches wide with red retro-reflective lettering, two inches high.
  - The red painted area background is 12 inches high by 15 inches wide with white lettering, two inches high.
Damage Control and System Marking Requirements

2-115-1-L
115-129
M

12"

COMPARTMENT BULLSEYE
(PHOTOLUMINESCENT BACKGROUND WITH 2-INCH BLUE RETRO-REFLECTIVE LETTERING)

FPL 2-105-1
COV 2-105-1
1-100-3

FIRE STATION BULLSEYE
(PHOTOLUMINESCENT BACKGROUND WITH 2-INCH RED RETRO-REFLECTIVE LETTERING)

Figure 079-21-5. Compartment and Fire Station Markings
Compartment Check-Off Lists CCOL’s

- **Master** - Maintained by DCA
- **Individual** - For Space w/ 1 Access
- **Duplicate** - For Space >1 Access
- **Partial** - For Small Space w/in Larger Space
079-21.4.5.1 General. Compartment checkoff lists are prepared and supplied by the shipbuilder. Ship’s force is required to keep them current. CCOLs are prepared on form NAVSHIPS 9880/2 (REV 2-67). Computer generated facsimiles may be used. Pen and ink changes are not authorized on computerized CCOLs. The DCA will maintain a master CCOL hard copy and a backup disk when the CCOL is computerized.
079-21.4.5.1.2 The miscellaneous unclassified data fields category is deleted as a CCOL requirement since this data is also covered in DCAMS, EGLs and PMS.

079-21.4.5.1.3 Any changes to the CCOLs will be as approved by the DCA.

079-21.4.5.1.4 Ensure that the division responsible or DC repair station is filled in on CCOL.
CCOL’s

079-21.4.5.1.5 When using NAVSEA computerized software, the revision date and print date replace the signature requirement.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>FITTING</th>
<th>NUMBER</th>
<th>LOCATION AND PURPOSE</th>
<th>CLASS</th>
<th>DIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>QAWTS</td>
<td>1-104-2</td>
<td>PASSAGE 1-103-2-L</td>
<td>X</td>
<td>2ND</td>
</tr>
<tr>
<td>2</td>
<td>WTH</td>
<td>1-104-2</td>
<td>PASSAGE 1-103-2-L</td>
<td>Z</td>
<td>REP 5</td>
</tr>
<tr>
<td>3</td>
<td>NTD</td>
<td>2-105-2</td>
<td>DECON STA NO 3 2-104-4-L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>FTD</td>
<td>2-106-2</td>
<td>PASSAGE 2-98-4-L</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MISCELLANEOUS CLOSURES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CHWCOV</td>
<td>2-105-2</td>
<td>CO VALVE SUPPLY 6-98-0-J</td>
<td>W</td>
<td>2ND</td>
</tr>
<tr>
<td>6</td>
<td>CHWCOV</td>
<td>2-105-4</td>
<td>CHW SPLY V-DUCT COIL</td>
<td>W</td>
<td>2ND</td>
</tr>
<tr>
<td></td>
<td>CHEMICAL FIRE SYSTEMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>AFFFCOV</td>
<td>2-105-2</td>
<td>CO AFFF SPLY TO HOSE RACK</td>
<td>W</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td>VENTILATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>VC</td>
<td>2-105-2</td>
<td>EXH 6-98-0-T</td>
<td>CW</td>
<td>REP 5</td>
</tr>
</tbody>
</table>
## COMPARTMENT CHECKOFF LIST

**NAVSHIPS 9880/2 (REV. 2-67) (Formerly NAVSHIPS 184)**

**COMP# 2-84-6-L**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>FITTING</th>
<th>NUMBER</th>
<th>LOCATION AND PURPOSE</th>
<th>CLASS</th>
<th>DIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>QAES</td>
<td>2-84-1</td>
<td>2-84-6-L to 2-79-2-L</td>
<td>X</td>
<td>SEC</td>
</tr>
<tr>
<td>2</td>
<td>Deck Drain</td>
<td>2-87-1</td>
<td>Main Drainage</td>
<td>Z</td>
<td>G-2</td>
</tr>
<tr>
<td></td>
<td>Valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>QAWTD</td>
<td>2-87-2</td>
<td>ACCESS TO 2-84-8-Q</td>
<td>X</td>
<td>REP 3</td>
</tr>
<tr>
<td></td>
<td>VENTILATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>QAES</td>
<td>2-84-2</td>
<td>3-84-6-L to 2-84-6-L</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Mat’l Condition</td>
<td>What’s Closed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Zebra</strong></td>
<td>Z Z D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y Y Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X X Y X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Yoke</strong></td>
<td>Z Z D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y Y Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>X-ray</strong></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Material Condition

Must be photo engraved
Or 3M sticker

Can not be more than 50% worn
## Table 505-7-1. COLOR CODE TABLE

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Color FED STD 595 Color Number</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam and Steam Drains</td>
<td>White 17886</td>
<td>A</td>
</tr>
<tr>
<td>Potable Water</td>
<td>Dark Blue 15044</td>
<td>A</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>Light Gray 16376</td>
<td>A</td>
</tr>
<tr>
<td>Bleed Air</td>
<td>Green-gray 16555</td>
<td>A</td>
</tr>
<tr>
<td>Bleed Air Anti-icing</td>
<td>Striped green-gray/light blue 16555/15200</td>
<td>A</td>
</tr>
<tr>
<td>Bleed Air Masker</td>
<td>Striped green-gray/light yellow 16555/13655</td>
<td>A</td>
</tr>
<tr>
<td>Bleed Air Prairie</td>
<td>Striped green-gray/dark blue 16555/15044</td>
<td>A</td>
</tr>
<tr>
<td>Bleed Air Starting</td>
<td>Striped green-gray/orange 16555/12246</td>
<td>A</td>
</tr>
<tr>
<td>HP Air (&gt;1000 psig)</td>
<td>Dark Gray 16081</td>
<td>A</td>
</tr>
<tr>
<td>MP Air (&gt;150 psig and &lt;1000 psig)</td>
<td>Striped dark-gray/tan 16081/10324</td>
<td>A</td>
</tr>
<tr>
<td>LP Air and Salvage Air</td>
<td>Tan 10324</td>
<td>A</td>
</tr>
<tr>
<td>Deballast Air</td>
<td>Striped Tan/Black 10324/17038</td>
<td>A</td>
</tr>
<tr>
<td>Oxygen</td>
<td>Green 14449</td>
<td>B</td>
</tr>
<tr>
<td>Seawater</td>
<td>Dark Green 14062</td>
<td>A</td>
</tr>
<tr>
<td>JP-5</td>
<td>Light Purple 17142</td>
<td>B</td>
</tr>
<tr>
<td>Fuel</td>
<td>Yellow 13538</td>
<td>A</td>
</tr>
<tr>
<td>Lube Oil</td>
<td>Striped Black/Yellow 17038/13538</td>
<td>A</td>
</tr>
<tr>
<td>Item</td>
<td>Code</td>
<td>Notes</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>-----------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Foam Discharge Plugs (AFFF)</td>
<td>Striped Red/Green 11105/14062</td>
<td>A</td>
</tr>
<tr>
<td>Gasoline</td>
<td>Yellow 13538</td>
<td>B</td>
</tr>
<tr>
<td>Fresh water</td>
<td>Light Blue 15200</td>
<td>A</td>
</tr>
<tr>
<td>Hydraulic</td>
<td>Orange 12246</td>
<td>A</td>
</tr>
<tr>
<td>Refrigerant</td>
<td>Dark Purple 17100</td>
<td>B</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>Chartreuse 23814</td>
<td>A</td>
</tr>
<tr>
<td>Amine Dry Cleaning Fluid</td>
<td>Brown 10080</td>
<td>B</td>
</tr>
<tr>
<td>Helium</td>
<td>Buff 10371</td>
<td>A</td>
</tr>
<tr>
<td>Helium/Oxygen</td>
<td>Striped Buff/Green 10371/14449</td>
<td>A</td>
</tr>
<tr>
<td>Sewage</td>
<td>Gold 17043</td>
<td>A</td>
</tr>
<tr>
<td>Halon</td>
<td>Striped Gray/White 16187/17886</td>
<td>A</td>
</tr>
<tr>
<td>Fire Main</td>
<td>Red 11105</td>
<td>C</td>
</tr>
<tr>
<td>Chilled Water</td>
<td>Striped Light Blue/Dark Green 15200/14062</td>
<td>A</td>
</tr>
<tr>
<td>Demin. Elect. Cooling Water</td>
<td>Striped Light Blue/ Dark Purple 15200/17100</td>
<td>A</td>
</tr>
<tr>
<td>Dark Purple 15200/17100</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>AFFF Concentrate</td>
<td>Striped Light Blue/Red 15200/11105</td>
<td>A</td>
</tr>
<tr>
<td>Oil Pollution Abatement</td>
<td>Black 17038</td>
<td>B,E</td>
</tr>
<tr>
<td>Jacket Water/Waste Heat</td>
<td>Striped Light Blue/Black 15200/17038</td>
<td>A</td>
</tr>
<tr>
<td>Divers life support system</td>
<td>Various/Various</td>
<td>F</td>
</tr>
<tr>
<td>AFFF Solution</td>
<td>Striped Red/Dark Green 11105/14062</td>
<td>D</td>
</tr>
</tbody>
</table>
Note A — Color code only valve handwheels and levers on valves not exposed to the weather. Valves and handwheels exposed to the weather (ship board shore connection) shall have label plates or plain language markings clearly delineate the service for each connection.

Note B — Color code valves bodies and handwheels exposed to the weather and all interior piping. Piping in tanks, voids, cofferdams and bilges shall not be color-coded.

Note C — All fire plugs and handwheels including associated components (strainer, wyegate, applicators, wrenches, and hose racks) shall be color-coded.

Note D — Color code all handwheels.

Note E — OPA piping in the bilge area shall be painted terra-cotta red (approximately chip 20152).

• 505-7.8.3.1.3 Markings shall be spaced not more than 15 feet apart, as measured along the run of piping, and shall be applied in conspicuous locations, preferably near control valves. Where piping is concealed behind sheeting, the markings shall be spaced not more than 5 feet apart, measured along the run of piping.
505-7.8.3.1 Pipe Marking.

- For an outside diameter of 6 inches and larger (bare or lagged) pipe, apply markings that have 2-inch high letters. On pipes or lagging with a diameter between 2 inches and less than 6 inches, apply markings that have 1-inch high letters. For diameters less than 2 inches, use 3/8-inch high letters. The marking may be stenciled or applied using preprinted retro-reflective labels. Direction of flow arrows shall also be marked on the piping. As a minimum, one arrow must be placed immediately following the functional name. Additional arrows shall be placed at junctions and tees to indicate flow divisions. Flow arrows may be stenciled or applied using preprinted retro-reflective labels.
Fan Room Storage

NSTM 510-7.2.1 {paraphrased} Fan rooms must not be used for stowage or office space. Swabs, deck gear, or trash shall not be stowed in fan rooms or HVAC terminals shall not be used for the stowage of clothing, shoes, toilet articles, or any other items.
Alterations

NSTM 510-8.1.1 No alterations or modifications shall be made to any ventilating or air-conditioning system without prior approval from NAVSEA.

NSTM 510-8.2.1 {paraphrased} A completed Ventilation Alteration Request Form (Form 510-1) should be sent through the chain of command to NAVSEA.
VALVE INSPECTION

- LEAKAGE
- VERDIGRIS
- LUBRICATION
- HANDWHEEL FIRMLY ATTACHED
- VALVE IDENTIFICATION
- BRIDGEWALL MARKING/ FLOW ARROW
- FLANGE SHIELD INSTALLED
INSPECTION CHECKLIST

• HANDWHEEL
• STEM
• PACKING GLAND
  – ALL NUTS STUDS SECURE
  – CORRECT PACKING
• BODY
  – FREE OF ENCRUSTATION
  – PROPER PAINT
  – NO LEAKS BONNET TO BODY
Challenges

- Hydrostatic test reference mark not visible or separation between mark and coupling evident.
- Hose hydrostatic test date not properly marked or outside of periodicity (36 months).
- Vari-nozzle seized or difficult to operate.
- Missing spanner wrenches.
- Ferrous fasteners.
Portable Extinguishers

- Mounting brackets in poor condition (no longer meet Grade A shock condition)
- Safety pins, tamper seals missing.
- Fittings (hose, horn, cap) overtight / loose.
- Agent not in proper condition or amount.
  - PKP hard packed, too little, too much.
  - AFFF/CO2 pressure out of spec.
- PMS tags filled out incorrectly.
- Cylinder overdue for hydrostatic testing.
- Stowage location markings (photolum).
Portable DC Extinguishers

Challenges

- PKP – Dry Chemical Extinguisher.
  - Mounting brackets in poor physical condition (no longer in Grade A shock condition per GSO).
  - Valve safety pin missing.
  - Fill cap overtight (should be hand tight).
  - PKP powder hard packed.
  - PKP fill height is not within standards:
    - 3 to 5 inches for ANSUL and 5 to 8 inches for FLAG extinguishers as measured from the lowest thread in the fill opening to the upper surface of the PKP powder.

Figure 555-4-1 Typical Dry Chemical Fire Extinguisher
Challenges

- AFFF – Aqueous Film Forming Foam Extinguisher
  - Mounting brackets in poor physical condition (no longer in Grade A shock condition per GSO).
  - Extinguisher pressure out of specs (outside the green range on gage).
  - PMS record tags filled out incorrectly.
  - Missing tamper seal.
  - Cylinder overdue for hydrostatic testing (5 yr).
  - Cylinder below/in excess of acceptable weight standard (27lb9oz – 28lb4oz).
Portable DC Extinguishers

Challenges

• CO₂ – Portable 15lb CO₂ Extinguisher
  – Mounting brackets in poor physical condition (no longer in Grade A shock condition per GSO).
  – PMS record tags filled out improperly.
  – Cylinder past due for hydrostatic testing (12yr).
  – Valve safety pins missing.
  – Stowage location not properly marked with photoluminescent labels.
  – Exposed hose to horn metallic coupling not covered with electrical tape.
  – Cylinder weight was not within PMS standards.
Escape Trunk with DRGM marking
Damage Control and System Marking Requirements

• Frame markings are to be applied every 14 feet or once centered in a given compartment that is less than 14 feet fore to aft.

• APC system markings are installed as near as practicable to actuators.

• The markings for portable and installed firefighting systems and extinguishers are to be located as near as practical, immediately above the extinguisher, hose reel or actuator.

• Vertical or horizontal markings for the OBA, SCBA and EEBD storage cabinets and OBA canister stowage cabinets are to be provided.

• EXIT signs with arrows are to be located within 5 feet of each access (door, hatch) to a compartment, except where the access opens directly to weather. The arrow direction is to indicate nearest egress route to weather area (i.e., main deck, hangar, flight deck).
Damage Control and System Marking Requirements

Figure 079-21-1. Frame and Direction Markings
Damage Control and System Marking Requirements

- Each door passed through along egress routes will be marked by photoluminescent strips around the outside perimeter to illuminate the opening.
- The word EXIT is to be placed on each door in a normal egress route, six inches above the bottom of the door.
- Balanced doors serving machinery spaces shall have an EXIT marker applied in the center of the door only.
- The side of a hatch coaming where the ladder attaches will be marked with a photoluminescent strip to indicate the location of the coamings.
- Entrance doors to damage control spaces shall be painted red. Retro-reflective signs shall be used to identify the space and the numbers shall be placed below the letters.
- Inclined ladders are to be marked by applying photoluminescent strips on the inner frame, alternating sides with each step. The handrails will be marked with six bands wrapped on each side.
A Frame Label shall be Installed in Compartments over 14 feet Long, every 14 feet.
2. Retroreflective Diamond Grade
Damage Control and System Marking Requirements

Figure 079-21-2. Markings for Doors
Damage Control and System Marking Requirements

Figure 079-21-3. Example of Strips Outlining Hatch Coaming and Escape Scuttles
Damage Control and System Marking Requirements

Examples of inclined ladder application dependent on ladder frame structure:
- 2" x 6" strips above alternating steps
- 2" wide strip wrapped on alternating rungs escape trunk ladder
- 2" x 6" strips on rail at alternating rungs on vertical ladder unwrapped half on front, half on side
COMPARTMENT ID PLATE

Leads to this Compt.

Door #

01-35-4
PASSAGE
01-35-4-L
EEBD ALLOWANCES

Ship's Complement 150%
Embarked Personnel 100%
Berthing Spaces 100%

(One EEBD per Rack)

OCENCO 15 years
EEBD ALLOWANCES (cont’d)

Engineering Spaces **200%**

(Two EEBDs per GQ Watchstander)
ISSUE
• WT Closures inspected were not WT.

Challenges
• Gasket incorrectly installed. (13%)
• WT closure out of adjustment (50%).
• Door wedges wearing down on high traffic doors (7%).
• Door hinge assembly components worn (9%).
• Missing piece parts (set screws, cotter pins) (13%).

Initiatives
• Improve DCPO training – CNE investigating Web Based WTC training program (MAINTRAIN).
• Finalize/begin fleetwide installation of MACHALT 608 [new improved door dogs which resist wear and minimize door adjustments].
• NAVSEA update MIP 1671 to include gasket install procedure.
General guidance for inspections

- Doors, hatches and scuttles should routinely be inspected by DCPOs, work center supervisors and zone inspectors for:
  - Loose, missing and damaged parts
  - Paint, rust or other foreign matter on gaskets, knife edges and working parts.
  - Binding and difficult operations
  - Distortion and deterioration of metal surfaces
  - Hinge pin wear and pins that are not properly secured.
  - Gasket cracks, deterioration, hardness, permanent set over 1/8 inch deep and gaps where the gasket ends meet.
  - No more than one joints in gaskets.
  - Gaskets must be no less than 24 inches in length.
General guidance for inspections

- Doors, hatches and scuttles should routinely be inspected by DCPOs, work center supervisors and zone inspectors for:
  - Obstructed access to escape scuttles.
  - Packing plungers intact and stick packing adequate (except on closures with self-lubricated bushings)
  - Broken or missing spring clips.
  - Missing special purpose wrenches:
    - dogging wrenches
    - T-wrenches
    - engineer's wrench (1-5/16 inch)
Watertight Door Maintenance

- The maximum acceptable variation for knife edge straightness is plus or minus 1/8 inch.
- The maximum acceptable warpage of the door frame is 1/8 inch.
- If frame/coaming warpage is excessive, or the knife edge straightness is not within tolerance, initiate replace the closure.
Watertight Door Maintenance

- Inspect the knife edge for paint, dirt, rust or nicks.

**NOTE:** For steel knife edges, remove paint and rust with #320 grit aluminum oxide abrasive cloth.

- Be sure to remove the abrasive grit with a clean rag to prevent the grit from getting embedded in the gasket.

**CAUTION:** For aluminum knife edges, remove paint with a nylon scrubbing pad and rag only.
Watertight Door Maintenance

Inspect hinge sleeves and hinge pins for wear

- With the door opened, grasp the door from the hand lever side and push it towards the hinged side. The door should not give more than approximately 3/16 inch.

- If it does, either the hinge pins and/or washers are worn, or the holes for the hinge pins have become enlarged.

**NOTE**: Do not confuse hinge pin wear with normal play in the hinge blades.
Another indication of hinge pin wear is if the metal channel surrounding the gasket on the door side is rubbing against the knife edge, or if the door panel rubs one or more side dogs when opening and closing.