

ZONE INSPECTION

COMNAVSURFLANT Best Maintenance Practice

1. **Summary.** Self-sustainability is a key element in ships being prepared to meet their ultimate requirement of conducting sustained combat operations at sea. An important part of self-sustainability is self-assessment. Zone Inspections are a lynchpin in the self-assessment process, allowing the Commanding Officer to meet “legislative” requirements, ensure standards are correctly applied, and train subordinates in the art of self-assessment.
2. **Discussion.** A quality Zone Inspection produces the following results:
 - (1) Accomplishment of a legislative requirement contained in U.S. Navy Regulations for a ship’s Commanding Officer to conduct periodic inspections of the ship.
 - (2) Completion of, or near completion of the annual “compartment – space inspection” PMS requirement
 - (3) Commanding Officer communicating material condition and readiness standards for the ship
 - (4) Commanding Officer conducting one on one self-assessment training with junior officers and chief petty officers.
3. **Establishing and Running a Zone Inspection Process.** Zone Inspection format can range from a single day ship wide event where all zones are inspected, to inspecting one zone a week with the ship is divided into no more than 13 near equal zones. Both formats enable the Commanding Officer to meet the intent of U.S. Navy Regulations (NAVY REGS) and requirements outlined in the U.S. Navy Standard Organization and Regulation Manual (SORM) regarding inspections. Inspection objectives should consider among other things, the current phase of the Inter-Deployment Training Cycle (IDTC) and all concurrent or near-term materiel assessments scheduled by outside activities.
4. **Inspection Frequency and Zone.** It is suggested that a Zone Inspection be conducted on a particular compartment or space no more frequently than every eight to thirteen weeks. This periodicity allows adequate time to correct, or take other appropriate actions on, discrepancies identified during the previous inspection. Zone Inspection dates should be scheduled and updated at least quarterly and easily obtainable by the members of the crew. The number of zones may have to be increased on ships larger than cruisers so that Inspections fit comfortably in the time allotted. Regardless of the size of the ship, it is not recommended that the Commanding Officer empower anyone to conduct Zone Inspections until the alternative inspector is trained, qualified, and certified to conduct Zone Inspections that meet the Commanding Officer’s standards.
5. **Weekly Ship Wide Zone Inspections.** Should you choose to use a large number of officers and chiefs to conduct weekly ship wide zone inspections, take appropriate measures to ensure that the inspector's standards are consistent with the Commanding Officer’s standards. The following are typical problem areas associated with weekly ship wide zone inspections:
 - (1) Inspections standards are generally inconsistent, which becomes confusing to the crew.
 - (2) Weekly ship wide Zone Inspections conducted by several people shift the focus from material condition and readiness to simply a space and passageway cleanliness inspection.
 - (3) There is insufficient time between inspections to take appropriate and effective action to correct significant discrepancies. A high frequency of inspections creates the illusion that limited progress is being made, and can be disheartening to Sailors attempting to correct the repeatedly identified discrepancies.
 - (4) Weekly ship wide Zone Inspections stop almost all-productive work aboard ship for several hours. This results in a significant waste of manpower because crew members are not only spending scarce man-hours preparing for a non-value added inspection but also burn-up man-hours standing by for the completion of the inspection.
6. **Commanding Officer’s Expectations.** Since there are many procedural variants associated with Zone Inspections, the Commanding Officer should make it clear how he or she expects Zone

Inspections to be conducted. All hands must know and understand Command standards. Recommended these expectations be articulated in a tailored ship's Zone Inspection Bill, which should also contain an enclosure that lists each zone, the compartments in each zone, the Sailor in charge of the compartment, order of execution, and the recommended route to conduct the inspection. The Sailor responsible for the space should also have their name indicated on placards placed near the entrance of the space. This effort allows the Commanding Officer to quickly identify and recognize Sailors who are properly maintaining acceptable standards.

7. **Zone Inspection Preparations.** To maximize Zone Inspection effectiveness, recommend the Commanding Officer (or alternative inspector) conduct a comprehensive review of material condition status documentation related to the division and compartments scheduled to be inspected, including:
 - (1) Results of the Zone's last inspection, annotated with current status of discrepancies
 - (2) Applicable CASREP status
 - (3) The Eight O'clock reports
 - (4) The applicable portions of the CSMP
 - (5) Tag-Out Logs
 - (6) Equipment status sheets and logs

This review not only allows the Commanding Officer the opportunity to become familiar with the current reported material condition of the spaces, but it also facilitates evaluating the division's ability to correctly self-assess material condition. In addition, it showcases the Division Leadership's ability to successfully plan and execute discrepancy correction. Attachment A lists recommended actions for establishing a zone inspection process.

8. **The Inspection Party.** Traditionally, a Zone Inspection Party consists of the Commanding Officer, CMAA, Department Head, Division Officer, Division LCPO of the space being inspected, and Recorder. The recorder must be familiar with the work candidate development procedures and internal work candidates processing. While not official inspection team members, junior officer participation is essential because it allows the Commanding Officer to provide one-on-one inspection. The Commanding Officer should, when appropriate, allow trained junior officers to conduct Zone Inspections under his or her direct supervision. There is no set requirement concerning the size or composition of the inspection party; rather, the Commanding Officer should create an inspection party that fits the ship's needs. Recommend the inspection party wear "dirty work" uniforms and appropriate safety equipment.
9. **The Inspection.** The priorities associated with Zone Inspections may change depending on where the ship is in its' life cycle; however, every inspection should follow the same basic format. The Sailor responsible for the compartment and the compartment cleaner must be present during the inspection. If required, watch relief's should be made available to ensure these Sailors are present when their Commanding Officer inspects the compartment they are responsible for. A zone inspection is not a periodic walk through the spaces but instead, a top to bottom inspection of a space's material condition, from below the deckplates up into the overhead. One of the most important aspects of every zone inspection is the ability to look into normally locked spaces, cabinets, and lockers, all which should be open prior to the CO's arrival.
10. **Inspection Criteria.** While each ship will have her own specific criteria, the examples provided in Attachment B have proven effective. The evaluation of a space can be divided into four distinct areas: overall appearance, damage control and safety, equipment condition, and space preservation and cleanliness. Particular attention should be paid to previously reported discrepancies to ensure they have been corrected or appropriate action is being taken. Discrepancies that do not match Eight O'clock reports, CSMP, or Equipment Status Boards should be highlighted for future discussion. The use of adjective grades is not required but if used a standard should be established, for example:
 - (1) Outstanding – no discrepancies.
 - (2) Excellent – minor discrepancies; no damage control discrepancies.
 - (3) Satisfactory – no major or safety discrepancies in any inspection area.
 - (4) Unsatisfactory –major or safety discrepancies noted or significant compilation of minor discrepancies.

11. **Processing of Discrepancies.** At the conclusion of the inspection, the inspector should review the recorded comments for completeness and accuracy. Any safety discrepancies requiring immediate attention are transcribed and forwarded to the Executive Officer for immediate action. The recorder then “smooths” and consolidates the discrepancy reports for distribution the next working day with the original smooth and draft document filed by the ship’s Zone Inspection coordinator. After the Executive Officer approves the consolidated reports, copies are provided to the Department Head, Division Officer, Command Master Chief and Leading Chief Petty Officer of the inspected space. The Division Officer and Leading Chief Petty Officer divide the discrepancies into two groups, maintenance worthy and non-maintenance worthy, and forward the documentation to the Petty Officer in Charge of the inspected space for action. The Petty Officer in Charge of the space shall:
 - (1) Post one copy in each space and hold a file copy
 - (2) Correct non-maintenance worthy discrepancies and so note on the inspection report
 - (3) Correct maintenance worthy items as quickly as possible. For those items corrected immediately a completed action work candidate (w/o prior deferral) should be submitted.
 - (4) Write work candidates for work that must be deferred and integrated with existing planned work.

12. **Follow Up.** Department Heads should prepare composite reports of action taken and submit them to the Executive Officer via the 3M Coordinator, Engineer Officer, and Zone Inspection Coordinator. After verifying that all feasible corrective actions have been taken, the Zone Inspection Coordinator should submit a written statement to that effect, with pertinent comments, to the Executive Officer for forwarding to the Commanding Officer.
 - (1) For ships with a "Division in the Spotlight" program, two weeks after a division has been in the spotlight, there should be very short meeting to discuss the status of actions required to correct discrepancies identified during the division’s self-assessment. This meeting should be attended by the Commanding Officer, Executive Officer, Department Head, Division Officer, Division LCPO, and the Ship’s Maintenance Management Officer (SMMO).
 - (2) The Division Officer should be prepared to address the status of any outstanding discrepancy, particularly those that are a repeat from an earlier zone inspection. Maintenance worthy discrepancies must have a JSN associated with them. For work that is ship’s force capable the Division Officer should be able to provide an estimated completion date and what assistance is required from other divisions.
 - (3) For work that has to be accomplished by an outside repair activity, the Division Officer should be able to state what availability the job is currently assigned to. If a technical assist visit is required prior to the work candidate being screened to a maintenance activity for accomplishment, the Division Officer should be able to state when the technical assist visit is scheduled to occur.
 - (4) The meeting should conclude with a few brief comments by the Commanding Officer regarding the Division’s ability to conduct an effective self-assessment and whether or not the division has improved its material condition since the previous inspection.
 - (5) The status information presented at the follow-up meeting will be used for preparations for the next zone inspection.

ATTACHMENT A

Recommended Actions to Establish a Zone Inspection Process

1. Establish ship's Zone Inspection policy
2. Clearly state Zone Inspection expectations
3. Establish clearly understood Zone Inspection standards.
4. Assign Zone Inspection Coordinator
5. Designate the number of zones, zone boundaries, and inspection routes to ensure direct access and logical order to all spaces in the zone (except tanks, voids, and cofferdams)
6. Design zones so they take nearly an equal amount of time to complete.
7. Design zones to be of spaces comprised from one division / department. This allows the zones to be more closely matched to division in the spot light
8. Require every space to be clearly marked with a label indicating the name of the Sailor responsible for the space. In addition, the name of Sailor who is responsible for cleaning the space should also be clearly indicated on the label plate.
9. Require all lockers, stowage cabinets and drawers to be unlocked and open for zone inspections.
10. Maintain inspection report files to support trend tracking and follow-up requirements.
11. Develop Zone Inspection follow-up procedures.

ATTACHMENT B

Assessment Criteria

Overall Appearance

1. Does the space present a neat appearance?
1. Is gear adrift?
2. Is the space correctly identified?
3. Do all panels and covers have all the hold down screws and bolts in place and are the fasteners tight?
4. Are horizontal surfaces free of debris and dust-dirt?
5. Are OSS books available or operating instructions posted?
6. Are all valves labeled properly with tags (or labels) securely attached and according to diagram print?
7. Are space and equipment nameplates installed?
8. Are systems aligned in accordance with the operational status boards?
9. Are gages and indicating devices properly calibrated and appropriate calibration stickers attached?
10. Is there proper lighting to provide for adequate and safe operation of equipment?
11. Are required labels, safety precaution signs, etc., installed in accordance with the plan and legible (e.g., valves, controllers, flow arrows, system marking on pipe or pipe lagging)?
12. Is equipment located behind panels or recessed in lockers accessible, with locker or panel correctly labeled for item inside or behind?
13. Are personnel protective guards installed (metal screens at blow down stations, blow down pots, etc.)?
14. Are safety precautions posted as appropriate and as called for by plan?
15. Do all deck hatches have grab rails, safety chains, or safety guard rails?
16. Is there unobstructed ventilation flow to equipment?
17. Are Foreign Material Exclusion (FME) devices in place for open systems?
18. Are tagged out systems properly indicated on status boards?
19. Are all color coded items marked with the correct color(s)?

Damage Control and Safety

1. Are DC stencils correct?
2. Is portable fire fighting equipment properly stowed?
3. Is emergency lighting installed and positioned correctly?
4. Does compartment pass "light leak" test?
5. Do water tight (and air tight) doors, hatches, and scuttles close properly?
6. Are emergency breathing devices properly located for easy access and charged correctly?
7. Are emergency exits and escape trunks clearly marked and clear of obstructions.
8. Are operating instructions posted for installed fire fighting and damage control systems?
9. Are maintenance checks within periodicity for portable damage control equipment?
10. Are closure bolts and holdback devices installed (especially doors and draws)?
11. Are there dead-ended electrical cables?
12. Are all fuses and breakers in the space (or system) the proper size, as called for in the prints?
13. Do fuse and breaker panels contain drawings indicating the proper fuse or breaker capacity?
14. Are flammables stowed correctly and in authorized amounts?
15. Are there flammable liquid leaks?
16. Are remote operators clearly marked, have operating instructions posted, and correct security devices in place?
17. Do remote operators appear to be well maintained and functional?

Equipment, Piping, and Cabling Condition

1. Is the equipment's general appearance within standards?
2. Are operating instructions and safety warnings posted?
3. Are there indications of corrosion and associated deposits?
4. Are all connections and bolts tight?
5. Are there any bent or unevenly loaded studs?
6. Are any leaks (steam, water, air) apparent?
7. Are there any seals or lock wires broken?
8. Are tags and labels installed, properly filled out and readable to the watch-stander?
9. Are fasteners for flanges properly tightened?
10. Are locking devices properly engaged?
11. Are valve hand wheels proper size, shape, style, color, and correctly attached?
12. Are valves installed in correct orientation?
13. Is all installed equipment securely mounted?
14. Are there any loose fittings or joints?
15. Are the chains attached to caps where required and special tool holders, such as for spanner wrenches on hose connections?
16. Are all required valve locks installed properly, labeled correctly, and functional?
17. Are orifice diameters identifiable without disassembly?
18. Is correct piping material installed?
19. Are there enough pipe hangers?
20. Are there any loose hangers?
21. Are pipe and cable hangers mounted with rubber inserts as required?
22. Is piping covered to protect against damage as applicable?
23. Is piping properly insulated (lagged)?
24. Is piping insulation (lagging) in good condition and not damaged?
25. Is piping clean with no tape, adhesives, or unauthorized paint?
26. Is proper termination of drains slightly above funnels, anti-siphon connections, screens installed in funnels, funnel lines checked clear to bilge?
27. Is cabling properly hung and strapped?
28. Are there any frays or breaks in the cable armor?
29. Are cables marked properly?
30. Are ground straps of proper material (braided or solid) as required by plan?
31. Are ground straps installed where required and with length sufficient not to break under maximum movement of equipment by shock?
32. Are electrical switchboards properly drip proofed (gaskets properly installed)?
33. Are stuffing tubes made up properly, correct size and material, armor cut back from stuffing tube as required?
34. Are wire markings correct?
35. Is there evidence of cable being burned or overheated, are there in-line splices of cable?

Space Preservation and Cleanliness

1. Is the condition of painted surfaces within standards?
2. What is the condition of painted horizontal surfaces?
3. What is the condition of painted vertical surfaces?
4. Is the condition of bulkhead and deck coverings within standards?
5. Are there indications of deterioration of deck or deck plate supports?
6. Are there indications of deterioration of equipment foundations?
7. Are there indications of deterioration of stringers?
8. Are there indications of deterioration or cracking in the hull plating or superstructure?
9. Are tags and labels readable and correct?
10. Is any component excessively dirty?
11. Are damaged components apparent?
12. Are loose parts apparent?
13. Are there any broken units or parts in the system? (Check all gage lines, connections, meter faces, meter dials panel switches, hinges, universal joints, gage glasses, sight glasses, wire leads, etc.)
14. Are pump and motor shafts clean?
15. Are mechanical seals and packing glands clean, free of paint?
16. Is there indication that units have been greased as necessary?
17. Are grease lines connected as labeled? Have they been checked for proper operation by one man greasing labeled joint and second man on phones verifying grease out at correct joint?
18. Are sight glasses clean and of proper material?
19. Is the external and internal equipment cleanliness within standards?
20. Are hatches and watertight doors clean; gear mechanism clean and lubricated?
21. Are out of the way areas such as under switchboards, panels and under deck plates clean?
22. Is there any damaged or wetted lagging?
23. Are sound mounts clean, no nicks or abrasions or paint?
24. Is rotating machinery free to rotate? Check all shafts by hand.
25. Are panels shut tight?
26. Are any loose wires noted?
27. Are electrical panels clean and free of loose material?
28. Are all fuse holders covered and fused?
29. Is the area free of gear adrift and missile hazards?
30. Are there any unevenly loaded sound mounts?
31. Are hoses unstressed and straight?
32. Check stowage and labeling of special equipment (e.g. cross-connect hoses, sea chest blow hoses, etc).