



TOP 10 CARGO VESSEL (SUBCHAPTER I) DEFICIENCIES

We conducted an analysis of all deficiencies recorded by CG Marine Inspectors while inspecting certificated commercial vessels (other than Offshore Supply Vessels) under Subchapter I. The purpose of this analysis was to identify the ten most common deficiencies to share with the owners/operators so they can take corrective actions onboard their vessels, ensure continual compliance with safety and environmental requirements, and so that problems can be rectified prior to scheduling the next Coast Guard examination.

The top ten deficiencies, including a brief explanation of the deficiency, applicable regulation, and potential correction methods are provided below. These deficiencies are not listed in any specific order.

1. Oily Water Separator (33 CFR 151.10) Recordkeeping is a concern. The documentation of routine preventive maintenance (by a contracted third party) is not always available to the inspector. The periodicity of such service should be clearly stated in the vessel's Safety Management System. Likewise, documentation which would attest to the calibration of the OWS is not always onboard. Owners/operators need to ensure that an appropriate crewmember is available to demonstrate proper operation of the OWS for the inspector.



2. A. Hull Plating (46 CFR 126.140, USCG NVIC 7-68) While inspecting older vessels, inspectors will typically find breaches (holes and cracks) in the hull plating, as well as wastage of structural members. "Navigation and Vessel Inspection Circular No. 7-68" has provided the guidance for "Inspection and Repair of Steel Hulls" for four decades and is available on Homeport.USCG.mil. Where temporary repairs had previously been made, it is recommended that owners/operators make arrangements for permanent repairs before scheduling the examination. Occasionally, an inspector notices a temporary repair that had not been previously documented.
B. Deck Plating A common defect is cracked (hatch) corner brackets, which can easily be seen from below. Look for cracks in the vessel's winch foundations. Also look for obvious wastage of deck plating.
C. Ballast Tanks Some operators of ships that are constructed with upper and lower ballast tanks, are required to inspect their Lower Wing Ballast Tanks and notify the USCG District. These operators should have documentation available for the inspector.



3. Watertight Doors (46 CFR 170.270) A very common finding is that hinges and dogs are in need of lubrication and adjustment. In some extreme cases, the door is badly warped to the point that replacement is required. Another common finding is deteriorated gaskets. Additionally, 'Class 1' WTDs should clearly be labeled on both sides: KEEP THIS DOOR CLOSED (46 CFR 97.37-60). Occasionally, the inspector finds that someone has recently painted over the stenciling. Operators should be prepared to demonstrate manual closing of 'Class 3' WTDs, in addition to closing them under power and should be aware that all hardware for the hydraulics must be approved by an appropriate classification society.



4. Fire Main (46 CFR 95.10) Temporary patches that have been made to fire main piping are sometimes found by the inspector. Operators should make any necessary permanent repairs before the inspection. The most common deficiencies are leaks and wasted piping. Wastage is treated the same as a temporary repair; a situation where permanent repair is required. Leakage from piping is also grounds for a permanent repair. Owners should be prepared to demonstrate proper operation of all fire pumps so that the appropriate pressures (at remote outlets) can be verified. Therefore, enough personnel have to be available to tend the hoses and run the pumps.



5. Survival Craft – Launching Arrangement and Operational Readiness (46 CFR 199.150 and 199.190) Operators need to realize the extent to which the inspector will need to see the lifeboat launching & recovery gear operated so that an appropriate number of crewmembers and/or contracted personnel can be available for the evolution. The most labor-intensive examination is the “110% weight test” required by 199.190(i)(5). Vessels with davit-launched lifeboats and rescue boats must undergo this exam every five years. Typically, the exam is scheduled for a time soon after the drydocking is completed and the boat falls have been either end-for-ended or replaced: 199.190(j). Miscellaneous davit-related items that are best corrected while the vessel is in the shipyard include worn rollers/wasted track, badly rusted gripes, bent/twisted hooks on both the falls and the gripes. Also noted is the wastage of the davit arms where the gripes make contact with them. If this is the case, owners should take advantage of the opportunity to weld chafing plates to the davits while the vessel is in the yard.



6. Lighting Fixture (Electrical Regulations: 46 CFR 111.75-20) All light fixtures that may be subject to damage must have a guard or be made of high strength material. Light fixtures on the open weather deck, engine room, or other machinery space must be protected with guards. Light Fixtures located in spaces that contain flammable vapors must maintain protective guards as well as their vapor tight seals to prevent flammable vapor from entering the fixture. Lights in accommodation spaces are normally exempted from these requirements because they are not subject to damage. The majority of deficiencies related to light fixtures are due to the guard. Additionally, 30% of the deficiencies are due to either a missing or damaged fixture. A “missing fixture” could be defined as an area of insufficient light.



7. Generators (Electrical Regulations: 46 CFR 111.12-Ship’s Service & 112.50-Emergency) Over 40% of all generator deficiencies indicate that the crew and/or shipyard personnel were either unavailable or unable to demonstrate proper operation of a generator. Since these demonstrations might have to include engine alarm shut-downs and an auto-start of the emergency diesel, qualified personnel have to be available to the inspector. Twenty percent of all generator deficiencies are due to water, oil or exhaust leakage; where any visible leakage will result in an “835” deficiency. Fuel lines must be double walled and free from leaks to prevent dripping from the lines onto the generator engine which has been the cause of numerous fires.



8. Fixed Carbon Dioxide (46 CFR 91.25-20 and 147.65) All piping controls, valves and alarms need to be checked for proper operation and 90% charge has to be verified. The pressure drop through cylinder connections may not exceed 150 psi per minute, over a two minute period, while subjected to the 1,000psi test pressure. Arrangements will usually have to be made for a contractor. Additionally, all carbon dioxide cylinders must be retested every 12 years. If cylinders ever have to be discharged at a time when it has been more than five years since they were pressure tested, they must be retested before recharging. Enclosure (1) to NVIC 6-72 lists the inspection requirements in one concise paragraph: "D.2.". The National Fire Protection Association provides the technical specifics for the inspection: "NFPA 12, Chapter 9.4.3".



9. Wiring Materials and Methods (Electrical Regulations: 46 CFR 111.60) Wires must be properly installed and connected in accordance with IEEE Std 45 sections 20 & 22 as well as IEC 92-3 and paragraph 8 of IEC 92-352. The use of temporary wiring where equipment must be hard wired is the most common finding (40%) and dead-end wires account for 18% of the inspection deficiencies. Insufficient mounting of cables as they run along bulkheads is also noteworthy. Operators can easily do a self-inspection prior to scheduling the exam. Make sure that all junction boxes have their covers in place (46 CFR 111.81).



10. General Watertight Integrity A missing label (placard) is on a bulkhead stop-valve is a deficiency, just as it is for an unlabelled sea suction or discharge valve. After a drydocking, operators should ensure that any labels that had to be removed by the shipyard are replaced before the inspection. If modifications were made that involved the removal of cables or pipes that ran through watertight bulkheads, ensure that the shipyard sealed the holes. Operators should inspect all weatherdeck tank vents, looking for rust-thru perforations, before going into the shipyard.



For more information about Subchapter I inspections and how you can prevent these common deficiencies, including performing your own self inspection, please contact your local Coast Guard Sector/Inspections Division. For a listing of local Sector Offices, click on "Sector Directory" on Homeport: <http://homeport.uscg.mil>



Office of Investigations & Analysis
Commandant (CG-545)
2100 2nd Street SW
Washington, DC 20593