



MARINER'S UPDATE

COMPLIANCE WITH SIMPLICITY

PSC FOCUS

WEEK 3

Fire Dampers

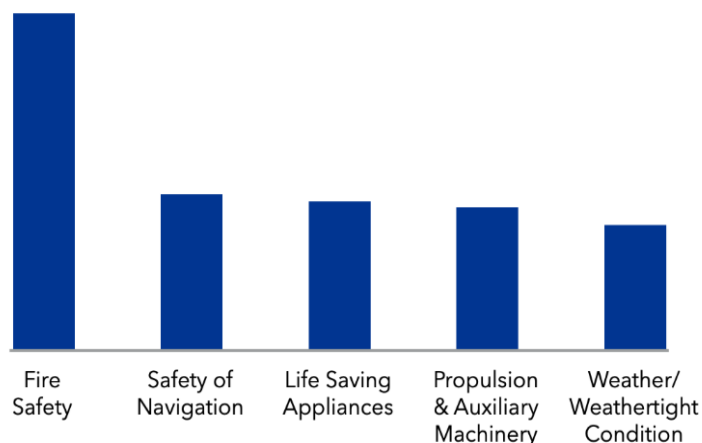
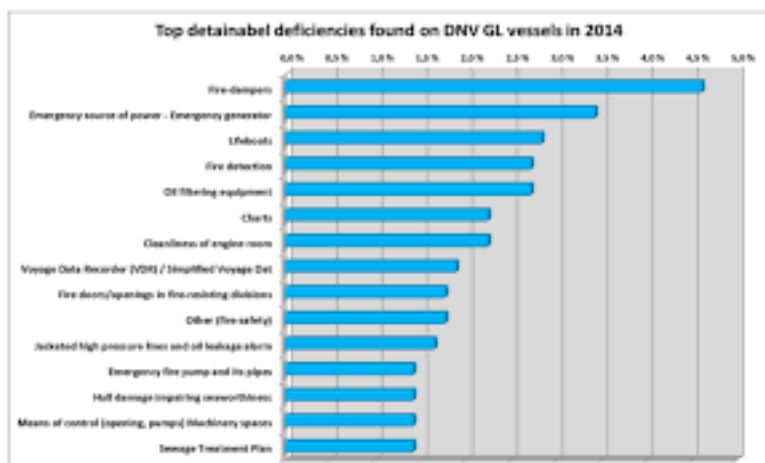


**Injury in front
of PSC officer**



PSC Focus: Fire Dampers – A Critical Detention Risk in Fire Safety

Fire safety has consistently remained one of the highest detention areas during Port State Control inspections. Within this category, fire dampers frequently appear among the most cited deficiencies.



Under PSC regulations, the deficiency category “Fire Safety” may be classified not only as a detainable deficiency but also as an ISM-related deficiency, indicating potential shortcomings in the vessel’s Safety Management System.

Common PSC Deficiencies Related to Fire Dampers

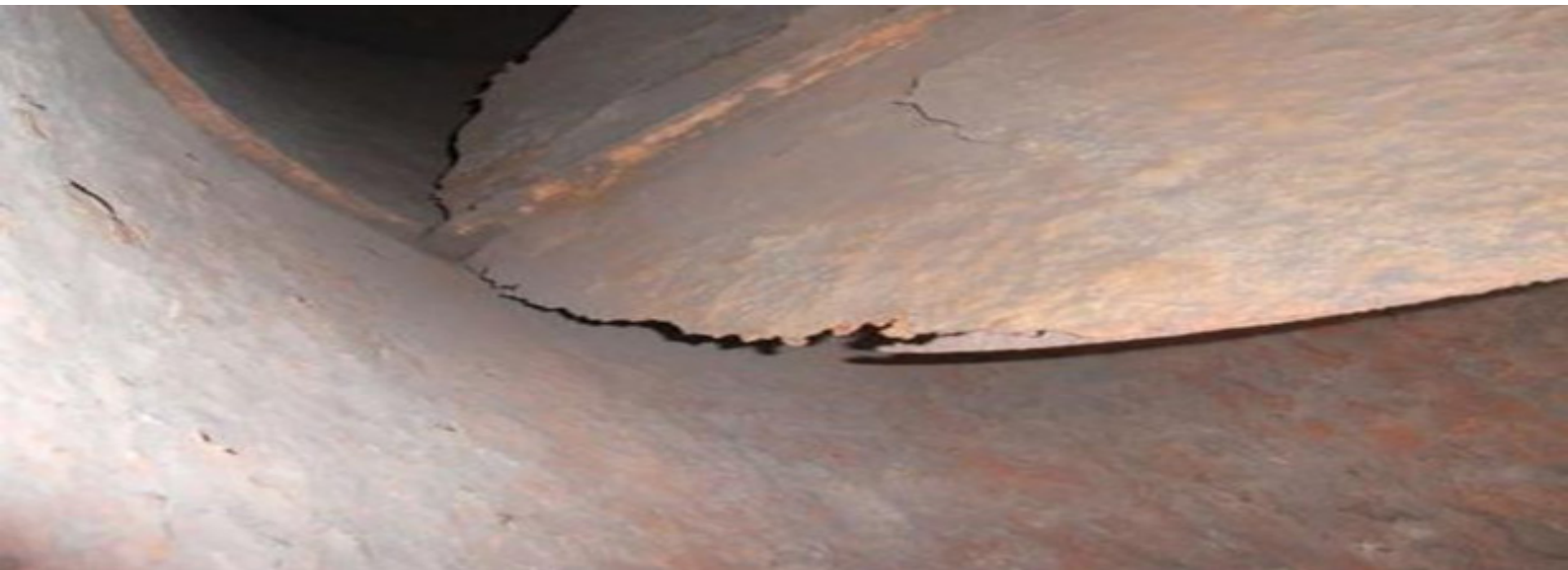
Deficiency code 07115 – Fire Dampers consistently ranks among the most reported fire safety deficiencies.

- Fire dampers unable to fully close
- Broken or seized closing wires
- Remote control systems not operational
- Hydraulic or pneumatic leakage
- Handles and operating positions not clearly marked
- Operating instructions missing at control stations
- Hardened or missing gaskets
- Corroded or seized damper flaps
- Inadequate damper condition
- Excessive corrosion or holes in fire dampers
- Means of closing fire dampers inoperative
- Fire dampers not closing tightly



- Open and closed positions not marked
- Engine room supply fan damper corroded at edges
- Air conditioning vent unable to close due to wasted seal bar

Safety Incident During PSC Inspection



REAL INCIDENT INFRONT OF PSC OFFICER

During a PSC inspection, the engine room crew were asked to demonstrate the closing of an engine room ventilation fire damper. While operating the lever, a crew member held it in the middle and pulled it to close the damper. The damper shut rapidly and stopped against a welded limiter block.

Unfortunately, the crew member's finger became trapped between the lever arm and limiter block, resulting in a serious squeeze injury.

Neither the lever nor the limiter block had hazard markings, which contributed to the accident. Since fire dampers are rarely operated during routine ship operations, crew members may not always be familiar with the specific design or operating characteristics of each damper system.



BEFORE



AFTER

Lessons Learned

- Clearly identify and mark hazards on damper levers and limiter blocks
- Conduct regular practice of damper operation when the vessel is in port and main engines are stopped
- Ensure crew are familiar with damper locations and operating procedures
- Treat every incident or near-miss as an opportunity for safety improvement

Understanding Engine Room Fire Dampers

In the event of an engine room fire, it is essential to quickly shut off both air supply and fuel sources. Engine room ventilation air is shut off using fire dampers installed in ventilators.

Ventilators may be:

- Free-standing units on deck or superstructure
- Integrated structures within the ship's superstructure or funnel

Fire dampers are commonly designed in several forms:

- Fire flap inside the ventilator – operated locally by lever or remotely via wire or hydraulic/pneumatic actuator
- Multiple fin flaps installed at air inlets
- Manual hinged covers with sealing gaskets and securing dogs
- Screwed disk closures on free-standing ventilators

Each design must ensure quick and reliable closure to prevent air supply to the fire.

Inspection and Testing of Fire Dampers

Regular inspection and maintenance are essential to ensure proper operation.

Hinged Covers

Inspect the condition of covers and gaskets, ensuring there is



no wastage or damage. Covers should move freely and close properly without deformation. Hinges must rotate freely, and all securing dogs should be fitted, greased, and operational. Particular attention should be paid to gasket integrity, especially at corners, ensuring it has not hardened.

Fire Flaps and Multiple Fin Dampers

Verify that “Open” and “Closed” positions are clearly marked. Inspect the condition of flaps and confirm they can provide an effective seal. Ensure the flaps are properly connected to the rotating rod and that the rod is correctly fitted within its supports. Operate the closing device and move the damper to the fully closed position, ensuring the lever mechanism is properly greased. In multiple fin dampers, all fins should be connected to the operating lever and move freely together.

Also inspect the structural condition of the casing, ensuring there are no holes, wastage, or temporary patches, and that the casing is securely connected to the deck.

Check the closing wires, confirming they are structurally sound, properly connected, and long enough to allow complete movement of the flaps.

Hydraulic or Pneumatic Remote Control Systems

Remote operating systems should be checked to ensure pistons are correctly installed and connected. There should be no leakage of hydraulic or pneumatic fluid, and sufficient operating fluid must be available. Control stations must be clearly marked with operating instructions and legends, and an additional local operating arrangement should always be available and functional.



Screwed Disk Arrangements

Inspect the casing condition, ensuring there are no holes, wastage, or patches and that the unit is properly connected to the deck structure. The screwed wheel mechanism must be functional and capable of moving the disk freely to the fully closed position. The gasket must be correctly fitted and not hardened to ensure proper sealing.

Final PSC Insight

Fire dampers are rarely operated during normal vessel operations, which makes them particularly vulnerable to seizure, corrosion, and operational failure. Regular testing, proper maintenance, and crew familiarization are essential to ensure these critical safety devices function effectively during emergencies—and pass PSC inspections without deficiencies.

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