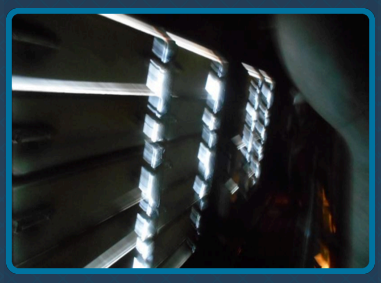
E/R FUNNEL FIRE DAMPERS UNABLE TO FULLY CLOSE

STRONG FIRE BOUNDARIES BEGIN WITH CLOSED DAMPERS.



- **RISQ 3.2 - 13.18 - Are engine room emergency stops for ventilation fans and the closing mechanism of ventilation supply and exhaust ducts clearly marked, in working condition, and do records indicate that they have been regularly tested?**
- **SIRE 2.0 – 5.2.2. Were the Master, officers and crew familiar with the location, purpose, testing and operation of the vessel's fire dampers, the means of closing the main inlets and outlets of all ventilation systems and the means of stopping the power ventilation systems from outside the space served?**
- **PSC Deficiency Code 07115 – Fire Dampers**
- **SOLAS Chapter II-2, Regulation 9 – Containment of Fire**

FINDING

During an onboard pre-vetting inspection, the PAS Auditor observed that the engine room (E/R) funnel dampers did not close fully from the local control position. A visible gap remained between the damper flaps, allowing daylight and outside air through even when the handle indicated fully closed. The remote closing arrangement was also tested and found to produce the same incomplete closure. Had a fire occurred, the dampers would not have isolated the space from the external air supply, undermining any fixed fire-extinguishing system used to fight it.

ROOT CAUSE

Lack of preventive maintenance: the damper flap linkage had become slack over time due to wear of the connecting rods and pivot points, so the closing mechanism reached the end of its travel before the blades were fully seated.

Inadequate inspection and testing system: existing inspection and testing practices failed to find this defect.

Insufficient senior officer supervision: neither the Master nor the senior engineers had personally verified full damper closure during drills or rounds, relying instead on the routine reporting of ratings that the mechanism was "operated and closed", without ascertaining whether the inspection and testing had been effectively carried out.

IMPORTANCE

Funnel dampers, together with engine room skylights and ventilation flaps, form part of the boundary arrangements required to isolate the machinery space and starve a fire of its air supply, allowing fixed fire-extinguishing systems such as CO_2 to work effectively. A damper that does not close fully defeats this purpose: the space cannot be sealed, the extinguishing medium is diluted or vented, and the fire may continue to be sustained by the incoming air. Fires in the engine room remain one of the most common and serious casualties at sea, and that is why fire safety remains one of the highest detention categories in PSC inspections. Such findings are classified as detainable and ISM related.

LESSONS LEARNED

- Include a planned maintenance task for fire dampers, flaps and closures that requires physical confirmation of full closure, checking for corrosion, wastage, hardened gaskets and seized components, not just handle position.
- During fire drills, physically verify that dampers are fully seated with no gaps, testing both local and remote or hydraulic closing arrangements, and confirm that "Open" and "Closed" positions remain clearly marked.
- Inspect and lubricate damper linkages, hinges, securing dogs and closing wires regularly, renewing worn or seized components promptly to prevent loss of full closure.
- Require superintendents to verify the condition, marking and full closure of fire dampers, skylights and ventilation flaps during onboard visits.
- Circulate this case across the fleet and reinforce, through onboard training, that a damper which does not close fully is a non-compliance that can expose the crew and vessel to an uncontrolled fire, with the potential to escalate into a catastrophic event.

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