



UNITED STATES COAST GUARD
U.S. Department of Homeland Security

MARINE SAFETY ALERT

Inspections and Compliance Directorate

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Safety Alert 19-25

FAILURE OF HALON 1301 FIXED FIRE EXTINGUISHING SYSTEM

The Coast Guard recently investigated an engine room fire that occurred on the Upper Mississippi River aboard an inspected towing vessel (ITV). While responding to the fire, crewmembers attempted to release the Halon 1301 system on board via a remote station (Figure 1). Unfortunately, the fixed Halon system failed to deploy and all bottles remained fully charged with their extinguishing agent. Upon further investigation, it was determined that the stackable pneumatic control head on cylinder 2 was damaged and the misalignment of a bent actuation pin (Figure 2) prevented all four halon cylinders from engaging.



Figure 1. Fixed Halon fire extinguishing system.

While the production of Halon has been banned in the United States since January 1, 1994, existing suppliers are allowed to recycle the product and offer it for sale under Environmental Protection Agency regulations. As a result, Halon is still commonly used within the marine industry and is leveraged to prolong the life of existing fixed-firefighting systems if such systems remain in good and serviceable condition.

According to U.S. Coast Guard Navigation and Vessel Inspection Circular (NVIC) 3-95: [Periodic Inspection and Testing of Fixed Halon Firefighting Equipment Aboard Merchant Vessels](#), Halon cylinders are not required to undergo hydrostatic testing unless they have been discharged. Consequently, it is possible that the damaged pneumatic control head and its misaligned actuation pin (referenced above) had not been regularly tested. Furthermore, the manufacturer of the subject fixed-firefighting system noted that the Halon systems are obsolete and no longer receive customer service support.

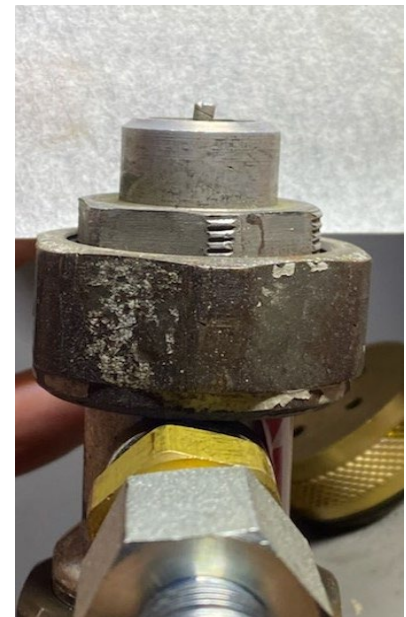


Figure 2. Stackable pneumatic control head bent pin.

While it is possible for Halon systems to be maintained in good and serviceable condition without original equipment manufacturer (OEM) support, this is contingent upon servicing companies having the necessary trained personnel with access to spare parts. If a servicing

company lacks the capability to maintain the system, source the required parts, or provide sufficient documentation (i.e., service records, OEM manual, etc.), the Halon system may no longer be considered “good and serviceable” and the system may need to be replaced.

The Coast Guard strongly recommends that vessel owners, operators, fire servicing personnel, and other stakeholders take the following actions on all vessels where Halon systems are on board:

- During servicing, fire servicing companies should include a comprehensive inspection of the actuation pin within the control heads. This inspection should focus on the alignment and length in the discharge position. Any deviation in the pin or poor condition of the pin should lead to replacement of the control head.
- Maintain records, both the annual and any other inspections done under NVIC 3-95: *Periodic Inspection and Testing of Fixed Halon Fire Fighting Equipment Aboard Merchant Vessels*, onboard the vessel.
- Vessel owners should have proactive conversations with servicing companies to ensure their vessel’s Halon system is being fully supported.

Maritime authorities conducting marine casualty investigations and compliance inspections are encouraged to maintain an acute awareness of these issues and initiate corrective actions as needed.

This Safety Alert is provided for informational purposes only and does not relieve any domestic or international safety, operational, or material requirements. Developed by Sector Upper Mississippi River and distributed by the Office of Investigations and Casualty Analysis. Questions may be sent to HQS-SMB-CG-INV@uscg.mil.