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COAST GUARD

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Hydrostatic Releases

The Problem

In too many fishing vessel sinking incidents, liferafts have not deployed properly. The most common causes of non– or improper deployment can be traced to: (1) not installing the liferaft in a location where it can float free without getting tangled or trapped; and (2) improper installation of the hydrostatic release mechanism.

The problem is particularly acute when a vessel capsizes quickly and the crew does not have the time to deploy the liferaft manually.

Liferafts must be installed to float free in the event of the vessel's sinking. Hydrostatic releases are used to ensure the liferaft can be secured to the vessel yet still float free if the vessel sinks.

How it all works

The liferaft container is generally installed in a cradle and held there by restraining straps with a pelican hook or similar device, which can be released for manual launching. The liferaft is also secured to the vessel by a strong painter to prevent it from floating away from the vessel if launched in heavy weather. The painter, when fully extended, will activate the inflation mechanism.

For automatic deployment, a hydrostatic release will allow the liferaft to float free from its cradle when it is submerged to a certain depth. The release is pressure sensitive and activates at a predetermined depth of 5 to 15 feet. The activation of the hydrostatic release involves springs and blades inside the device that will cut the line securing the liferaft. <u>But, the most important factor in the release working properly is you</u>. If the hydrostatic release is not installed properly, no matter who designed or manufactured it, the liferaft will not float free when needed most. Additionally, the entire crew must understand how the liferaft is rigged and can be deployed.

When a liferaft floats to the surface, the painter pays out until it pulls a wire that is attached to the inflation mechanism. It then trips the compressed CO^2/nitrogen filled canister. The canister is connected to 2 hoses leading to the liferaft's sponsons. When the liferaft is inflated, the buoyancy of the liferaft may break the weak link on the painter. The week link prevents a sinking vessel from pulling the liferaft down with it if the water is deeper than the length of the painter.

Hydrostatic releases, if used, must be Coast Guard approved under 46 CFR 160.062. Service or replacement of a hydrostatic release is normally accomplished at the same time as the survival craft servicing. Some releases cannot be serviced and are approved for a limited life. A hydrostatic release unit that is unserviceable makes a survival craft unserviceable and could prevent proper launching in an emergency. Navigation and Vessel Inspection Circular (NVIC) 4-86 provides additional information on rigging hydrostatic releases.

Stowage

Liferafts should be stowed so that they can be readily deployed to the water on either side of the vessel. A location preferred by many is atop the deck house. This location keeps the deck clear and usually provides fewer opportunities for entanglement when deployed. You should determine the best location to stow the liferaft so it will float free. The most convenient location may not be the best.

There have been numerous incidents where liferafts did not deploy because the canisters stuck in their cradles, or were trapped by the vessel's structure or fishing gear. When selecting a stowage location, remember also that it may have to be deployed in adverse conditions, such as darkness, high winds and waves, or with the vessel listing heavily. Be sure too, that there will be no obstructions for the liferaft when it has to float free.

Know your gear

To repeat the most important point—every crew member must be familiar with the liferaft and its launching procedures, and how it will float free.