



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

MARINE SAFETY ALERT

Assistant Commandant for Marine Safety, Security and Stewardship

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Alert 5-08

PREVENTING ENGINE EXHAUST SYSTEM FIRES

This Safety Alert addresses the issue of preventing unwanted fires caused by high temperature components associated with turbochargers and engine exhaust systems in close proximity to combustible ship structures.

Two recent marine casualties involving inspected passenger vessels resulted in personnel injury, fire damage to machinery and ship structures, operational down time and lost revenues. In both cases, the vessels were recently re-powered with new turbocharged engines having exhaust systems designed to operate at higher temperatures than the previous engines. Investigations into each case identified common discrepancies as follows:

- Failure to properly insulate or shield combustible ship structures from engine exhaust systems in accordance with 46 CFR §182.430.
- Failure to properly submit documentation for plan review, which may have identified failures to comply with 46 CFR regulations.

As a result of these recent incidents and due to other related casualties involving small passenger vessels, the U. S. Coast Guard **strongly recommends** vessel owners and operators to:

Inspect vessel engine exhaust systems, machinery spaces, and exhaust compartments to verify that lagging and insulation are properly installed to shield hot surfaces and combustible materials. Proper insulation and shielding methods will help to prevent fires due to flammable and combustible liquids spraying onto hot surfaces (i.e. turbochargers, exhaust piping) and will prevent combustible surfaces (i.e. wood, fiberglass, FRP) from heating up to ignition temperatures due to close proximity to hot surfaces. Pay particular attention to areas where exhaust systems penetrate bulkheads and decks, making sure that combustible surfaces are properly shielded and/or insulated using non-combustible materials.

Ensure that proper submittals for plan review are made and documented with the local U.S. Coast Guard Sector Office of Prevention. Plan reviews are required whenever engines and/or propulsion systems are changed or modified. This includes re-engine projects where engines are not replaced in-kind, but with different types of engines or engine manufacturers.

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