



TECHNICAL CIRCULAR No. 911 of 7th February 2026

To	All Surveyors/Auditors. All flags
Title	Retrofit Scenario Impact
Reference	RETROFIT

RETROFIT SCENARIO IMPACT

Propeller modification: Increase propulsive efficiency by improving the flow around the blade.

Propeller replacement: Increase propulsive efficiency at the vessel's operating profile.

Bulbous bow optimization: Reduction of resistance at the intended vessel speed and draft.

Bow foils: Reduction of resistance by dampening the vessel's pitch motion.

Bow wind shield/deflector: Reduction of resistance by improving the vessel's aerodynamics.

Containership side gap protector: Reduction of resistance by improving the vessel's aerodynamics.

Propeller cap fin: Reduction of propeller hydrodynamic losses.

Duct, primarily for slower vessels, e.g., tankers and bulk carriers.

Duct with twisted fin, primarily for faster vessels, e.g., containerships.

A duct with integrated fins is placed in front of the propeller.

The duct accelerates the wake, producing a net forward thrust.

The fins provide a pre-swirl to the wake, which reduces the losses in the propeller slipstream, increasing propeller thrust.

Wake equalizing and flow separation alleviating devices

Homogenization of the wake field by redirecting the flow to the upper part of the propeller disk. By homogenizing the flow, the propulsion efficiency is increased. The flow is also accelerated due to the lift created because of the aero foil shape of the duct cross-section.

Rudder bulb: The rudder bulb minimizes the hub vortex, regaining some of the rotational losses.

Lower friction coatings: Reduction of frictional resistance by applying advanced coatings to the hull and/or propeller.

Air lubrication system (ALS): Reduction of frictional resistance is achieved by pumping air beneath the hull, thus reducing the area of hull in direct contact with the liquid flow.

REFERENCE:

- Retrofits for Energy and Emissions Improvement

ATTACHMENTS: No.

Kindest Regards,

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