

New Noise Regulations threatens to “Ground” Flying Boats

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With the introduction of new regulations by the Danish Environmental Authorities, following amongst other things complaints over noise from the “Catlink” Ferry Services on the Aarhus to Kalundborg route, ferry operators Scandlines were faced with a dilemma.

The Scandlines fast ferry vessels known locally, as “the flying boats” operating between Copenhagen and Malmö would now be subject to the new rules governing exhaust noise levels. The vessels, which have serviced the route for some years, were built prior to such requirements, and not fitted with silencers, further more, no space was available in the engine room and adjoining compartments to house them.

A further concern was that of the economic impact the modifications would have, as the route will now face strong competition from the new road and rail bridge linking Denmark and Sweden.

The new rules stipulated that exhaust noise emissions from fast ferry vessels, should be limited, especially in the low frequency range 16 Hz to 125 Hz. Conventional reactive type silencers required to handle low frequency noise, would be physically too big, as weight on these compact catamaran type vessels is critical, affecting their speed, and fuel consumption.

With the now familiar requirements of high attenuation, little space, and low levels of back pressure to work with, the Silentor engineers

set to work, with the knowledge that time to comply with the regulations was tight, if an operational ban was to be avoided.

The vessel “Springaren” was chosen for a prototype installation, her main propulsion engines are two MTU 16V396 TE74L units, developing 2000 kWm each.

Internal installation was out of the question; it was then decided that the compact Silentor solution using a single silencer per engine, would be transom mounted at the stern. The space available in this area was strictly limited, as was the weight, in order not to affect stability, and speed of the craft.

The prototype silencers are shown in the illustration, and have proved a great success, so much so that Scandlines have equipped a further vessel “Ørmen” with the same Silentor concept. Yet again Silentor prove their ability to provide unique and cost effective silencing solutions, in problem situations, on water as well as land.