

CASE STUDY

[MIDEL®]
SAFETY INSIDE

PROJECT: Marine on-board transformers | Global

ESTER TYPE: MIDEL 7131 synthetic ester

PURPOSE: Optimised transformer reliability and fire safety

[OVERVIEW]

The modern Vista class and Signature class vessels of the Holland America Line (HAL) fleet of cruise liners can carry around 2000 passengers and were manufactured by the Fincantieri Marghera shipyard in Italy.

These ships house a range of transformers from 16MVA down to 4.4MVA. The larger 16MVA transformers onboard are used for propulsion purposes, taking the power from diesel motor generator sets and feeding into ABB Azipod propulsion units.

Passenger and crew safety is a critical priority for cruise liners, and they deploy a range of sophisticated safety measures to ensure the security of every person on board. These measures extend to looking at how to further mitigate risk for the on-board transformer units.

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CASE STUDY



[SITUATION]

The on-board transformers see continuous service and their reliability is paramount to ensure that the vessel does not lose power and becomes stranded, or in the very worst case, the transformer is not a source of fire risk. The smaller transformers are used for distribution purposes, since the cruise ships operate as floating hotels, with a large amount of power needed for entertainment, catering and general lighting.

The transformers are so critical to the running of the ships that HAL subjects them to regular safety and engineering reviews, so the accessibility and detailed analysis of insulator fluids is also essential.

[RESULT]

Using MIDEL 7131 provides all the solutions to HAL's requirements, with the MIDEL technical team providing guidance about the interpretation of Dissolved Gas Analysis and fluid condition results from all the HAL MIDEL transformers - a total of 46 units. Then in collaboration with the transformer manufacturer ABB Monselice, the proper technical information can be reported to the customer.

To date the fluid and transformers have an outstanding performance record. The history of using MIDEL in these ships goes back to the MS Amsterdam, built in 2000, and most recently MIDEL was installed onboard the MS Nieuw Amsterdam in 2009.

Holland America Line is not the only ship operator to appreciate the value of MIDEL; the UK's Royal Navy and US Navy specify MIDEL 7131 because they demand the very best in fire risk mitigation and need to make the best use of available space aboard their vessels. MIDEL 7131's high temperature stability and excellent lubricity allow it to operate reliably at elevated temperatures – crucial considerations when designing compact transformers for marine applications.

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The use of MIDEL ester fluids in this project supports the following UN Sustainable Development Goals:

