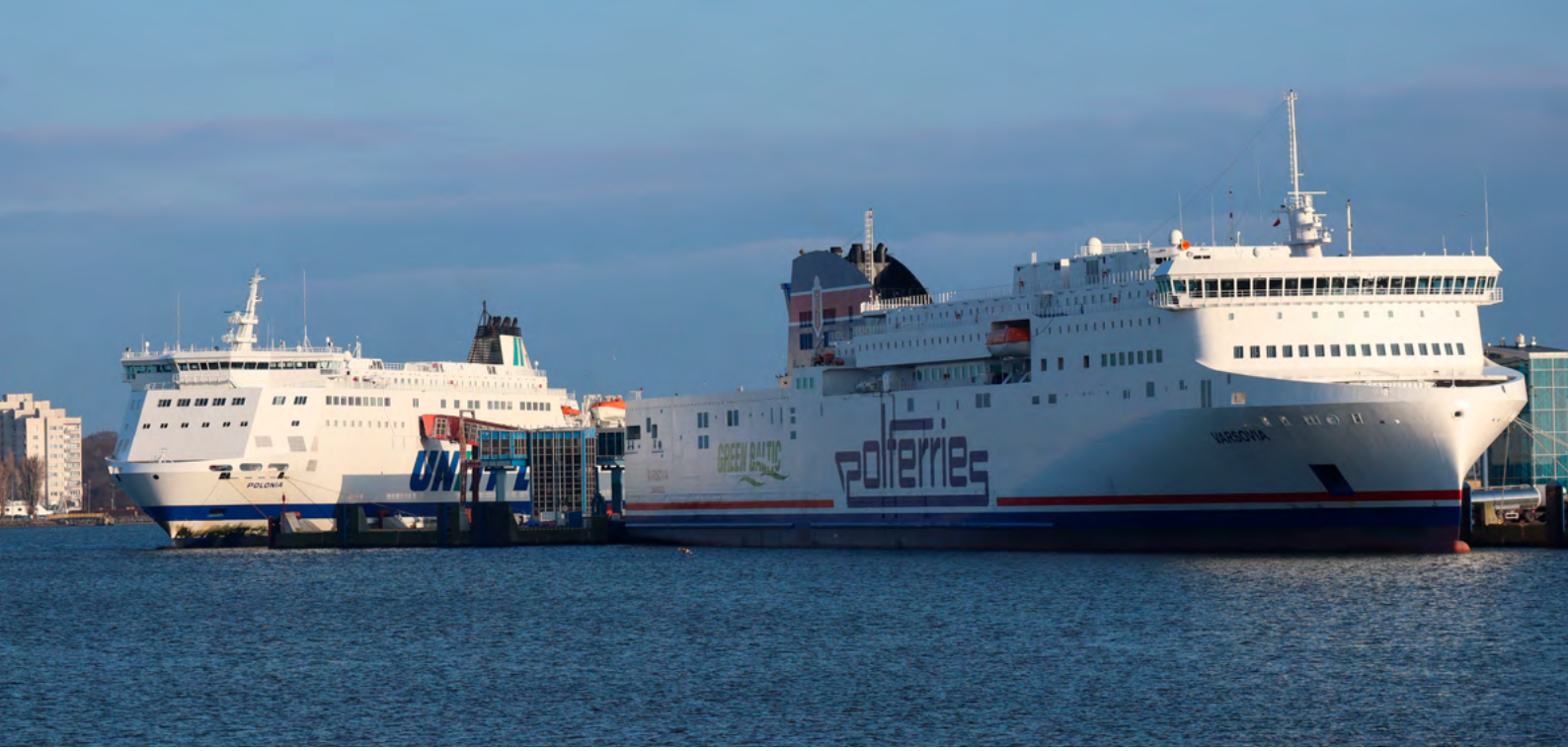


Varsovia

Every inch a Visentini

"Varsovia" is a further evolution of Cantiere Navale Visentini's so-called 'Mk II' platform of which Corsica Linea's 2022-built "A Galeotta" was the lead ship. All shortcomings of the earlier Visentini generations have been addressed and the Mk IIs are both Safe Return to Port (SRtP) and SOLAS 2020 compliant.

In essence, the 41,878gt "Varsovia" is a lengthened near sister ship of "A Galeotta" which was presented in the 2023 issue of RoPax. Visentini's new 'Mk II' generation represents a totally new hull platform complying with both SOLAS 2020 damage stability and SRtP regulations. Although clearly carrying the DNA of its naval architects, NAOS Ship and Boat Design, the new Visentini Mk II-class was started from scratch.

"A Galeotta" has a length overall of 206.6m which has been further increased to 216.2m for "Varsovia" with the 28.2m moulded beam unchanged. These dimensions come close to what Visentini can physically build on account of the length and width limitations of its single building dock on the one hand and the turning circle on the Po di Levante River on the other. The Mk II's longer and beamier hull resulted in a higher block coefficient and displacement. So, one of the main challenges was to further improve the fuel economy which was achieved thanks to a long CFD optimisation process.

While the low block coefficient of Visentini's Mk Is was one of the ship's strengths, it also proved to be one of its weaknesses as it didn't allow for an extension of the upper decks due to stability and displacement limitation issues. This drawback has been fully addressed in the new design, which allows for an extension of the upper decks to the ship's very aft, potentially increasing the maximum passenger capacity to 2,000. This compares to a maximum capacity of 1,000 persons (including crew) for "Varsovia".

With lessons learned from the Mk I platform and the lengthening-cum-conversion of "Stena Lagan" and "Stena Mersey" to double-deck drive-through mode, the Visentini Mk II has been designed with a later conversion to drive-through in mind as the main vehicle deck is now devoid of the extremely forward centreline stair casing.

SRTP AND SOLAS 2020 COMPLIANT

To comply with the SRtP and SOLAS 2020 damage stability rules, the lower machinery and vehicle decks were totally redesigned. Even long before SRtP rules became mandatory, NAOS Ship and Boat Design had already implemented a B/5 double skin spanning almost the full length of the Visentini Mk Is, protecting the engine room and all of the ship's vital parts from flooding. This has been repeated on the Mk IIs and although not an SRtP requirement, the main engines have been separated from the auxiliaries with four engine compartments as a result. Although it is a more expensive solution, this compartmentation combined with the B/5 double skin is undoubtedly best in class.

Unlike "A Galeotta", which is owned by Corsica Linea, "Varsovia" is owned by Visemar di Navigazione, the shipowning arm of Visentini, and long-term bareboat chartered to Polferries. Consequently, Visentini chose a different engine manufacturer as "Varsovia" has twin Caterpillar MaK 12M46DF LNG dual-fuel main engines with an output of 11,580 kW at 500 rpm each – an engine type which is no longer produced.

A low fuel consumption is at the heart of "Varsovia's" design, obviously helped by the Flex Bow 2.0 stem with integrated bulb. "Varsovia" frequently operates on a single shaft with the second propeller feathering. The ship's maximum speed is 24.8 knots but during sea trials, a single main engine provided a 17-knot service speed at 85% mcr while at the same time also making use of the full 2,000 ekV power from the shaft generator.

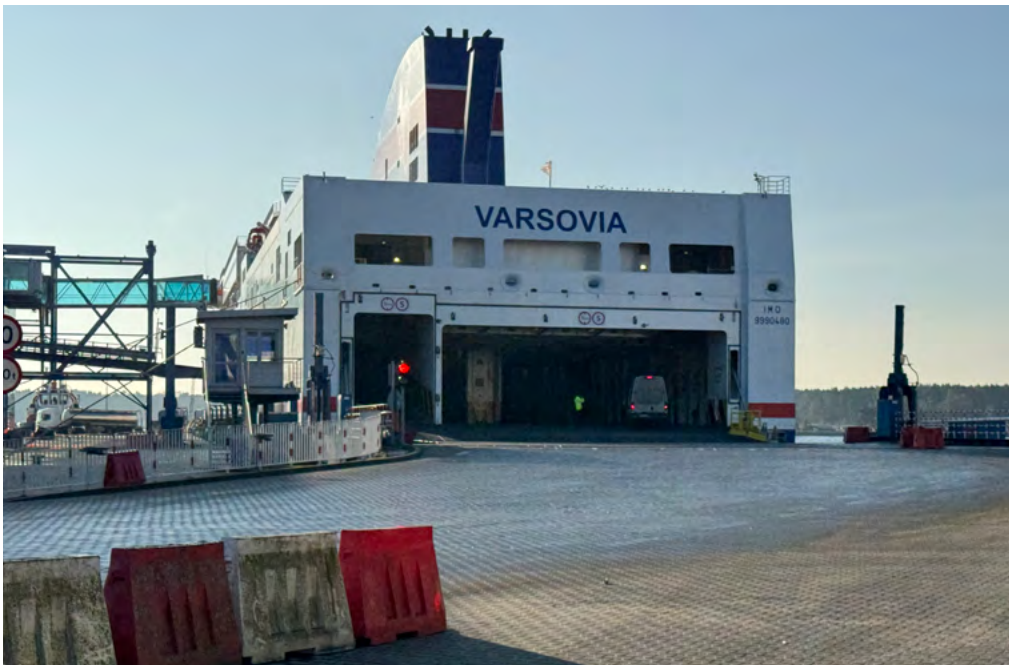
Visentini repeated "A Galeotta's" two-plus-two auxiliary engine setup with each genset compartment holding a combination of dual-fuel Wärtsilä 9L20DF and MDO-powered Caterpillar 3516C engines.

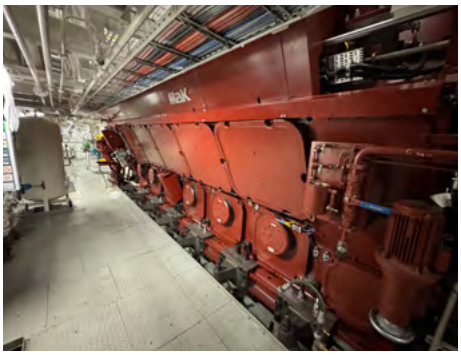
LNG-READY SOLUTION

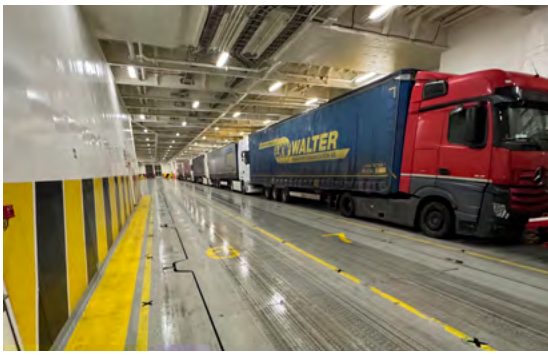
For the time being, "Varsovia" is built as 'LNG-ready' without LNG tanks and double-walled pipework installed yet. It will be retrofitted to LNG propulsion at a later stage when a single 180m³ Type C LNG tank and ancillary equipment will be installed.

Visentini has been hesitant to install LNG tanks below deck and all three LNG-powered vessels built prior to "Varsovia" had their LNG tanks installed 'on deck', notably on the upper freight deck aft. As Polferries specified a separate open car deck, Visentini found a compromise; the location of the LNG tank will be retained, yet the tank will somehow be covered to create the upper car deck abaft the accommodation on Deck 5. Most ferry operators opt to have the LNG tanks installed below deck, forward of the engine rooms. This typically comes at the expense of cargo intake on the lower decks. Keeping the tank on Deck 4 aft allows for an optimisation of the cargo intake on decks 1, 2, and 3 as an LNG bunker station on the latter deck would impair the trailer lane layout.

By virtue of "Varsovia's" excellent hydrodynamic performance, Visentini didn't opt for any bells and whistles to further reduce fuel consumption with 'standard' Mariner spade rudders and Kongsberg controllable pitch propellers. Kongsberg also supplied the twin bow thrusters, the combined output of which was increased to 3,600 kW to compensate for the larger windage area.







All photos in this article: JPE

SIMULTANEOUS LOADING OF VEHICLE DECKS

One of the Visentini Mk IIs USPs is the fixed internal ramp arrangement, warranting simultaneous loading of four vehicle decks, including the lowermost car deck. As per SOLAS 2020 damage stability rules, the lower deck and ramp layout on the Mk Is was no longer permitted. However, NAOS Ship and Boat Design made a virtue of necessity and found a solution to retain both a car deck and freight deck below main deck level without compromising the intake. The Mk Is typically boasted a car deck immediately below the main deck with its access ramp continuing to the lower freight deck. On the Mk IIs, the freight deck moved up one deck, to Deck 2 level, and is directly accessed via a single fixed ramp with a two-section side-hinged watertight cover. Access to the Deck 1 car deck is totally separated from that of the Deck 2 freight hold with the starboard B/5 skin partially holding the fixed ramp with a single watertight cover.

Up to 112 cars can be parked on the 2.0m high lower car deck while the lower Deck 2 freight hold has a 327-lanemetre capacity. The 16m long stern ramp, including 3m flaps, gives access to the eight-lane, 1,257-lanemetre main deck which has a 5.2m free height. A 52.2m x 4.55m portside ramp connects the stern ramp with the fully enclosed Deck 4 which has a 1,193-lanemetre capacity and 5.2m free height. Up to 98 lanemetres of trailers can be stowed on this fixed ramp which has been narrowed from three lanes on the Visentini Mk Is to two lanes on the Mk IIs, considerably improving the cargo flow into the main deck with straight lanes from stern to stem.

A hoistable car ramp connects Deck 4 with the open aft end of Deck 5. As the LNG tank will be stowed underneath, it was pointless to install a tiltable ramp, so it is hinged at the aft end of the Deck 5 recess. A total of 102 cars can be parked on the open deck with six reduced mobility parking bays giving immediate access to the main public spaces deck.

ACCOMMODATION DECKS

Visentini ro-pax ferries are not renowned for their glitzy interiors as utility rules with functional no-frills passenger facilities. Long-term Visentini partners Paolo Ancora and IGI Allestimenti were responsible for the interior design and outfitting, respectively.

The general arrangement of the accommodation decks follows that of the Mk Is. All public spaces are concentrated on Deck 5 with Deck 6 being the passenger cabin deck with a total of 202 standard inside and outside four-berth cabins, four forward-facing four-berth luxury cabins, and six four-berth cabins for people with reduced mobility. Deck 7, the bridge and crew accommodation deck, holds another 18 four-berth passenger cabins, bringing the total number of passenger cabins to 230, equivalent to 920 berths.

Two stair halls divide Deck 5 into three fire zones. Forward is the large, 490-seat restaurant area. Hot and cold meals are primarily served on a self-serve basis with a single self-service counter just forward of the main starboard galley. Glass partitions divide the restaurant into smaller sections, the 124-seat inboard zone of which functions as an à la carte restaurant. The 391-seat midship bar lounge connects the forward with the aft stair hall. The reception desk is located at its starboard entrance, just abaft the forward stair hall. To the aft, there is a small children's playroom and a 107-seat recliner lounge located inboard on the starboard and port side, respectively. At the very rear of Deck 5, forward of the open car deck, there is a shop with adjacent games area and mini casino. The portside mirror view holds a small quiet lounge with bar. *Philippe Holthof*