

DENMARK

DFDS'S WORKHORSE FOR ALL SEASONS

Aura Seaways represents DFDS's first ro-pax newbuild in 40 years. Operating on the Karlshamn-Klaipeda overnight service, *Aura Seaways* is a utilitarian workhorse that incorporates all lessons learned from Apuania and Visentini class ro-pax ferries that DFDS has operated in the Baltic

By **Philippe Holthof**, Correspondent



AURA SEAWAYS.
SOURCE: PHILIPPE
HOLTHOF

Together with Grimaldi Group and Stena Line, DFDS belongs to the 'big three' pan-European operators of ro-pax and short-sea ro-ro tonnage and, like its peers, DFDS has been rather sceptical about LNG propulsion. To comply with the 0.1% SECA, the Danish shipping giant retrofitted most of its existing fleet with SOx scrubbers and rather than switching to LNG propulsion for its first ro-pax newbuild in 40 years, it opted to burn IFO 380 cst in combination with seven hybrid ME Production scrubbers – four on the main engines and three on the auxiliaries.

When *Aura Seaways* and its soon-to-be-introduced sister ship *Luna Seaways* were still on the drawing table, battery-hybrid technology on large ro-pax ferries was not yet widespread and to comply with EEDI on the one hand, and keep the emissions footprint as low as possible on the other, DFDS focused on hull optimisation with model testing carried out by SSPA in Gothenburg. As *Aura Seaways* has no bow access, much attention has been paid to the slim bow shape with a vertical stem and integrated bulb. This increases the length of the waterline considerably and has proven well on DFDS's Jinling-built ro-ros.

For quite a long time, DFDS has remained faithful to European yards and its popular Flensburger-built Flower class series, which have formed the backbone of its North Sea operations for many years, are probably the best example of this. Yet, for its next-generation of

6,695lm mega ro-ros, DFDS turned to Jinling Shipyard, China's most prolific builder of short-sea ro-ros. In 2007-10, the shipyard built the 3,322lm MSG 113 class quartet that DFDS chartered through Macoma Shipping and subsequently Ellingsen Shipping Group's Leomar RoRo Shipping. Part of China Merchants, Nanjing Jinling Yizheng's shipyard has meanwhile diversified into the ro-pax segment, having recently delivered TT-Line's first 'Green Ship', the LNG-powered *Nils Holgersson*. One more sister ship, *Peter Pan*, will follow in Q4 2022 and the German ferry operator reportedly holds an option for two more vessels of the same class.

With Jinling already building its 6,695lm ro-ros, DFDS didn't want to put all its eggs in one basket and following a worldwide tender process, which included European shipyards, it signed the two-ship contract with Guangzhou Shipyard International (GSI) in February 2018. Besides being price-driven – the DKK 1.8 billion or US\$268 million price tag also covered yard supervision and delivery of the ships to Europe – the choice of GSI was equally based on the yard's track record. Back in 2018, GSI was the sole Chinese shipyard that had built complex ro-pax ferries for European interests, notably Rederi AB Gotland.

The concept design of *Aura Seaways* was executed by OSK ShipTech, the Danish naval architecture consultancy that was also in charge of the ship's interior design through its Steen Friis Design affiliate.

The contract, basic and detailed design was in the hands of Finland's Deltamarin.

Simple design

'Keep it simple' has been the mantra throughout the project, something reflected in both the powertrain system and the ship's general arrangement. Per requirements, the vessel complies with the Safe Return to Port (SRtP) regulations, with two separate engine rooms that are divided by transversal bulkheads. The forward engine room holds two main engines on the starboard side of the centreline with two auxiliaries to the port.

The four-stroke Wärtsilä main engines follow the father-and-son principle with the eight-cylinder W8L46 engine having a 9,600kW output at 600rpm. Fuel consumption for the eight-cylinder engines is about 34.3 t/day with the smaller six-cylinder W6L46 engine, which has a 7,200kW output at 600rpm, consuming about 25.7 t/day. The aft engine room has the similar father-and-son arrangement, yet the engines are mounted on the portside of the



AS PER SRTP STIPULATIONS, *AURA SEAWAYS* IS EQUIPPED WITH A SECOND BRIDGE

centreline with a single auxiliary on the starboard side. Each of the three Wärtsilä W6L26 auxiliaries has a 2,040kW output, while the twin input, single output gear boxes each have a 3,000kW PTO, one being sufficient to provide the hotel load during navigation.

To enhance manoeuvrability *Aura Seaways* has two powerful bow thrusters, each with a 2,800kW output, so the auxiliaries are typically activated when approaching port. Although future-proofed to connect to shore power, *Aura Seaways* relies on its own auxiliary engine power until cold ironing facilities will be in place. Wärtsilä provided the ship's whole propulsion package, including its two-in-one Energopac system which integrates the ship's twin propellers with the Becker full-spade flap rudders, guaranteeing reduced fuel consumption and excellent manoeuvrability. The vessel's engines are not of the dual fuel type, yet they can be adapted to burn alternative fuels, including LNG/biogas.

The ship has an LNG-ready class notation from Lloyd's Register and LNG tanks could potentially be installed in the lower, six-lane hold which has a 378lm capacity. Located within the B/5 longitudinal bulkheads, it is accessed from the main deck via a 4.1m-wide fixed internal centreline ramp which is closed off by a 43m-long two-section flush side-hinged cover on Deck 3.

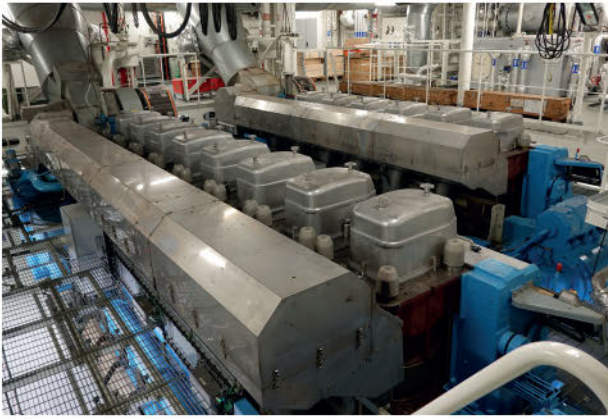
Ramp arrangement

A stern-only loader, all access equipment, including the three hydraulic stern ramps, were supplied by TTS, now part of MacGregor. The ramp arrangement follows that of the Jinling sextet with the central ramp giving direct access to the 4.9m-high main deck which has a 1,241lm intake. Decks 1, 5 and 7 have a 4.7m free height with 53m-long twin-lane fixed ramps on the starboard and port side leading to Deck 5. On Deck 3, three lanes are sandwiched between the side ramps, becoming nine lanes midships, forward of the side casings which hold the staggered funnel uptakes and aft of the forward centre casing. Unlike earlier ro-pax generations, Deck 5 has no ventilation side openings and is hermitically sealed off from Deck 3 and 7 by top-hinged doors on either side.

The ramps' threshold heights at the stern are slightly higher than the Deck 3 centre ramp and the seven-degree slope of the fixed ramps guarantees smooth

TECHNICAL PARTICULARS	
DFDS Baltic class: <i>Aura Seaways</i>	
Length oa	230.00m
Length bp	224.50m
Breadth, moulded	31.00m
Depth to main deck	9.85m
Draught, design	6.80m
Gross tonnage	56,043
Net tonnage	29,708
Deadweight	12,750t
Lanemetres	4,105 lm trailers + 419 lm cars or 3,939 lm trailers + 819 lm cars
Passengers	600
Passenger cabins/ berths	250/690 (500 lower berths)
Main engines	2 x Wärtsilä W8L46 + 2 x Wärtsilä W6L46
Output	2 x 9,600 kW + 2 x 7,200 kW
Service speed	18knots (Karlshamn-Klaipeda), 23 knots (Kiel-Klaipeda)
LSAs	2 x 150-person Viking Norsafe lifeboats + 2 Viking MES
Class	Lloyd's Register
Class notation	✱100A1 Roll on-Roll off Passen- ger ship, ShipRight(SDA, CM, ACS(B)), *IWS, LI, ECO(BWT), Ice Class 1C FS LMC, UMS, IBS, NAV1, PCAC 2.2 Descriptive notes: GR(A), Shi- pRight (BWMP(T)), MPMS, SCM, SERS, SRtP, IHM
Flag	Denmark (DIS)





THE WÄRTSILÄ W8L46 FOUR-STROKE MAIN ENGINES

cargo operations, further enhanced by a Bimagrip high-friction anti-skid surface. On Deck 5, the ramp narrows to a single lane that continues to Deck 7, the aft part of which is open, allowing for the stowage of certain IMDG categories.

The ship's average lane width is 3.1m and with the hoistable car decks in stowed position, *Aura Seaways* has a total freight intake of 4,105lm (plus 419 car lanemetres below and on the dedicated fixed car decks). With the introduction of the Fincantieri-built *Selandia* class back in the late 1990s, DFDS initiated the innovative SAT trailer trestle, a trailer lashing system with integrated twistlocks. The trailer trestle system was also adopted on later generations and *Aura Seaways* too has SAT lashing pots welded flush with the deck, even though DFDS will rather use LOT trestles. Unlike the SAT system, LOT trestles have no hydraulic deck locking, yet thanks to its rigid design the required number of lashings are highly reduced.

The ramp layout allows for a two-way traffic flow, considerably improving cargo handling efficiency, something which would come in handy on the Kiel-Klaipeda route with limited turnarounds of just four hours. Most trailers are shipped accompanied and notwithstanding the low number of reefer trailers, *Aura Seaways* boasts no less than 150 reefer plugs.

Crew and passenger facilities

Built in compliance with the Danish International Ship Register (DIS), the Lithuanian crew is accommodated in 62



DECK 7, THE MAIN CAR DECK.

single outside cabins which are spread over decks 7 and 8 forward and just aft of the bridge on Deck 11. Directly aft of the crew's accommodation on decks 7 and 8 is the dedicated fixed car deck. The 3.1m headroom below the fixed deck allows the stowage of (camper) vans or MPVs.

The free height on Deck 8 level is 2.2m and with the hoistable platforms on either side of the central casings down, the car intake can be increased to 819lm, reducing the trailer intake to 3,939lm. The car decks are conveniently located close to the accommodation with a Hyundai elevator and two flights of stairs leading to the spacious reception hall on Deck 9. The general arrangement of the public spaces is reminiscent of the *Apuania* class ro-pax ships with bar and restaurant facilities forward and a cosy Lighthouse Café and adjacent shop and children's playroom aft of the full-width reception hall.

The aft end of Deck 9 holds 74 cabins, including ten De Luxe double-bed cabins and two cabins for physically

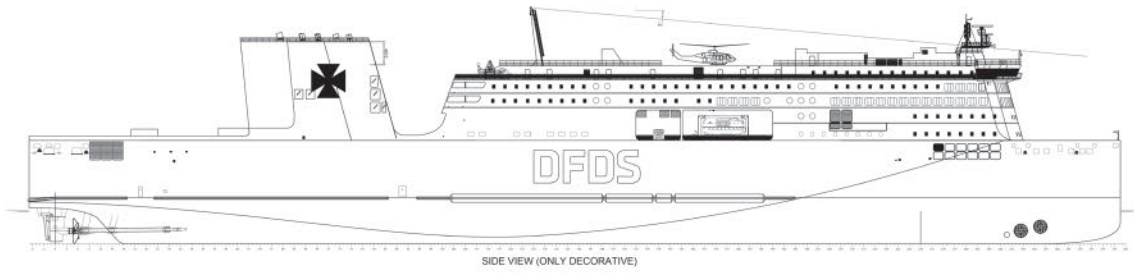


THE ROAD KINGS RESTAURANT ON DECK 10

challenged passengers. All 176 cabins on Deck 10 are standard two or four-berth inside and outside cabins, seven of which being pet friendly and twelve so-called family cabins with connecting doors. The prefabricated cabins and wet units were manufactured by Shenzhen-based Huanan Building Materials (HBM).

A central galley on Deck 9, supplied by Aluminox, feeds the forward 198-seat *Seven Seas* self-service restaurant and the starboard 70-seat *Mare Balticum* à la carte restaurant. To port is the Navigator's Bar which gives access to the self-service restaurant. Freight is king with commercial drivers benefiting from DFDS's signature *Road Kings* restaurant forward on Deck 10. It comes with its own bar and seating corner at the entrance to the port.

Aura Seaways has plenty of outside deck space and although a non-smoking ship, two smoking cabinets are available aft on the semi open decks 9 and 10. The navigation systems on the fully enclosed state-of-the-art bridge were supplied by Wärtsilä. Last but not least, to comply with SRTp rules, the mast houses the emergency bridge. ■



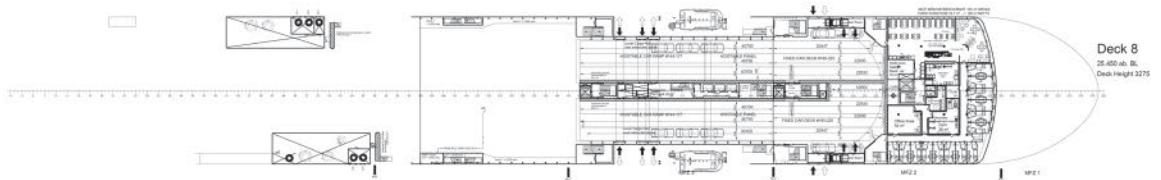
SIDE VIEW (ONLY DECORATIVE)



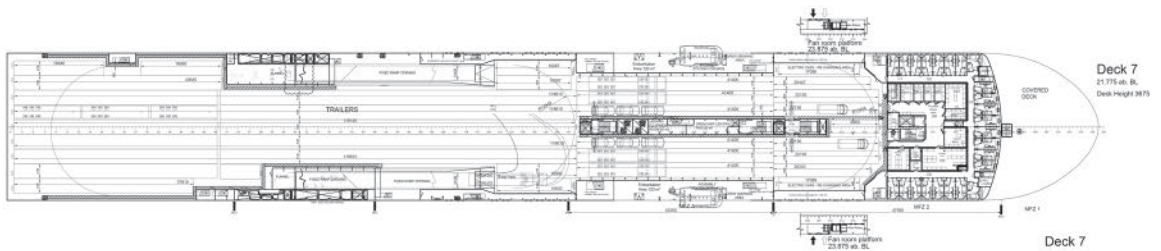
Deck 10
31.725 ab. BL.
Deck Height 2900



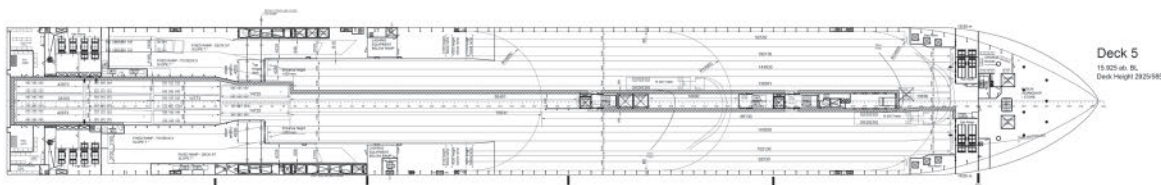
Deck 9
28.725 ab. BL.
Deck Height 3000



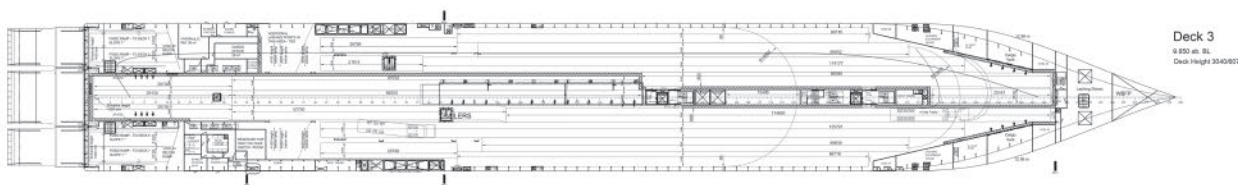
Deck 8
25.650 ab. BL.
Deck Height 3275



Deck 7
21.775 ab. BL.
Deck Height 3675



Deck 5
19.825 ab. BL.
Deck Height 3925/3950



Deck 3
9.850 ab. BL.
Deck Height 3540/3575

