



NILS HOLGERSSON. SOURCE: MARK STAMPEHL

## RO-RO'S

### A NEW 'FERRY' TAIL FOR GERMANY'S TT-LINE

With the delivery of TT-Line's 5,015m and 800-passenger capacity *Nils Holgersson*, soon to be followed by sister ship *Peter Pan*, China Merchants Jinling Shipyard (Nanjing) has joined the rather exclusive group of Chinese shipyards building complex ro-pax ferries for foreign interests. This is a first for the yard's Yizheng facility which has hitherto been a prolific builder of short-sea ro-ro vessels, having just completed Grimaldi Group's innovative 12-ship GG5G series

By **Philippe Holthof**, Correspondent

China Merchants Jinling Shipyard controls the shipyards in both Weihai and Nanjing. Whilst the former shipyard is building Stena RoRo's highly successful 'one-size-fits-all' E-Flexer ro-pax series, as well as the Superstar class pair for Grimaldi Group subsidiary Finnlines, it is the latter that has broken new ground with the on-time delivery of *Nils Holgersson*. In fact, the 56,138gt ro-pax was delivered a few weeks ahead of schedule, no mean feat for a yard that had never built ro-pax ferries before, not to mention the challenging Covid-19 conditions.

Already back in 2000, the then-emerging Jinling Shipyard – established in the 1950's – took the sceptics by surprise with the on-time and to-cost delivery of its first ro-ro ships, of which the 1,890m *Finnmaster*, currently DFDS's *Botnia Seaways*, was the lead ship. This quartet proved to be the door opener for more short-sea ro-ro orders, all built at the facility in Nanjing where the vessels were still side-launched into the Yangtze River.

The rather small yard in Nanjing is expected to be permanently closed in mid-2023 with Jinling Shipyard's (Nanjing) newbuilding activities to be concentrated at the modern Yizheng facility, some 50km downriver on the north bank of the Yangtze River. In more recent years, the Yizheng yard completed Toll's 3,084m *Tasmanian Achiever II* and *Victorian Reliance II*, followed by DFDS's 6,695m sextet and Grimaldi Group's hybrid GG5G class: nine 7,800m ro-ros for Grimaldi Lines service in the Mediterranean and three vessels specifically adapted to Finnlines' requirements with a lower intake of 5,800m, meeting the typical cargo mix of trailers, forest products, trade cars and containers.

#### Green Ship

In the hands of Germany's Oetker and Termühlen families since early 2013, TT-Line steers clear of the limelight. The company's first newbuilding project

since the 2001 delivery of the SSW Fähr- und Spezialschiffbau-built *Nils Holgersson* (now renamed *Akka*) and *Peter Pan* (converted in 2018 and to be renamed *Tinker Bell*) was shrouded in mystery with the order only officially announced some six months after the contract signing.

When revealing the newbuilding contract in December 2018, TT-Line stated that an option for a sister ship was attached but, once exercised, this was never communicated. It is understood that TT-Line held an option for two more ships of the same class but with newbuilding prices having gone through the roof and Chinese yards eager to concentrate on more profitable and less complex vessel types, such as containerships and PCTCs, the option appears to be void now.

Powered by LNG and with fuel efficiency and consequently emission reduction at the heart of the design, the new generation has been dubbed 'Green Ship'. Denmark's OSK-ShipTech has played a key role in the design; in addition to developing the concept design, it was responsible for both the contract and basic design.

### Demanding schedule

TT-Line operates in an extremely competitive marketplace, competing on the Germany-Sweden corridor with Finnlines and Stena Line. Indirect competition comes from Scandlines' shorter Fehmarn Belt link between Puttgarden and Rødby. Competition will only intensify when the fixed Fehmarn Belt link opens towards the end of this decade.

With Bernard Termühlen at the helm, TT-Line has expanded beyond its core Travemünde-Trelleborg and Rostock-Trelleborg routes. A Trelleborg-Swinoujscie service in direct competition with Unity Line was added early in the New Year of 2014, followed by a Trelleborg-Klaipeda route in June 2018. TT-Line adapts supply to demand and therefore, its ferries don't operate on a fixed route and rather rotate. Although the new *Nils Holgersson* and *Peter Pan*, the largest ro-pax ferries in the nine-ship strong fleet, are designed to operate on all four routes, they primarily serve Travemünde-Trelleborg, followed by Trelleborg-Swinoujscie.

Crossing times vary between six and over 11 hours with Rostock and Swinoujscie offering the fastest transit

DECK 3 BOW RAMP AND BOW DOOR ARRANGEMENT. SOURCE: PHILIPPE HOLTHOF



DECK 5 WITH SIDE LOADING RAMP AFT. SOURCE: PHILIPPE HOLTHOF







DECK 7 WEATHER DECK. SOURCE: PHILIPPE HOLTHOF



DECK 12 WRAP AROUND PROMENADE DECK WITH SKYLIGHTS. SOURCE: PHILIPPE HOLTHOF

times. To reduce fuel consumption and emissions, TT-Line has also implemented kind of slow-steaming, especially on the Travemünde–Trelleborg overnight service. Consequently, port turnarounds are reduced to the strict minimum with an emphasis on the optimisation of the cargo flow.

### Fast turnaround

Already many years ago, TT-Line implemented double-level shore access in Trelleborg, Travemünde and Rostock. *Nils Holgersson* berths bow-in at Trelleborg. Bow access into the 1,4951m main deck, Deck 3, is via a 20m-long (plus 2m outer flap) bow ramp with a 6.2m-wide driveway. It folds out from behind a pair of hydraulically operated clamshell doors. All access equipment, tiltable ramps and ramp covers were supplied by MacGregor, part of Cargotec.

In both Travemünde and Rostock, there is double-level stern access. The twin stern ramps on Deck 3 each have a 12m length with 3m-long outer flaps and a 10m-wide driveway (to fit the linkspan, the

flap of the starboard ramp narrows to 5.525m). Stern access into the 1,6111m Deck 5 is via a 12m-long (plus 3m-long outer flap) foldable ramp with a 12m-wide driveway. Double-level linkspans are not available yet in Swinoujście and all cargo is discharged and loaded via the Deck 3 stern ramps, making use of the ship's internal ramp system. A 56.8m-long (excluding flaps) and 6.8m-wide double-lane tiltable ramp starboard of the central casing connects Deck 5 with Deck 3 below.

To speed up cargo operations in Trelleborg, *Nils Holgersson* boasts twin side access ramps on the portside of Deck 5 – one fore and one aft (on the starboard side, there is one side ramp forward with the shell being futureproofed to install one at the stern). Double-lane tiltable ramps on either side of the casing-cum-funnel connect Deck 5 with Deck 7, the uppermost deck, the aft end of which is a weather deck, allowing for the stowage of certain IMDG goods. To optimise cargo handling operations when alongside in Trelleborg, traffic for decks 5 and 7 is separated. Deck 5-bound trailers drive on board via the 6m-wide forward side-loading



ramp whilst the aft entrance is used for trailers stowed on Deck 7 which has a 1,630lm capacity.

Thanks to the generous 11m driveway of the aft side ramp, trucks and tugmasters can promptly and easily turn towards the nearby tiltable ramp on the portside of the casing. Access into the 279lm lower hold is via a fixed ramp which has a two-section side-hinged cover for a total length of 50m. In closed position, the cover is flush with the main deck, watertight and hydraulically cleated to deck. *Nils Holgersson* boasts eight 3.1m-wide freight lanes in the widest parts of decks 3 to 7, four on either side of the engine casing.

The LSA recesses on decks 7/8 reduce the number of lanes to six which is also the number of lanes in the cellar hold. All four freight decks have a clear height of 4.7m and with passenger demand only peaking during holiday periods, there was no need to install hoistable car decks. Tourist cars are parked on Deck 5 which is equipped with a total of 32 EV charging points.

### LNG propulsion

The new *Nils Holgersson* has a 92% higher freight intake than its 2001-built namesake vessel. In combination with a fuel consumption which is on a par with TT-Line's 1995-built, 2,394lm *Nils Dacke* and *Robin Hood*, this is an achievement in its own right as the emissions footprint per transported truck is halved. Yet, apart from the economies of scale, it's also the latest technologies that contribute to the ship's green status, all the way from an optimised hull form to waste heat and waste cold recovery systems from LNG and sea water. MAN Energy Solutions supplied the LNG FGSS, comprising two 500m<sup>3</sup> LNG Type C tanks which are stowed abreast in the tank hold space abaft the lowermost vehicle deck.

To comply with SRTP rules, a centreline bulkhead divides the engine room compartments into two halves. Aft of the LNG tank hold are the auxiliary engine rooms which each have two Wärtsilä 9L20DF dual fuel gensets with an output of 1,384kW each. A MAN 8L51/60DF and a MAN 6L51/60DF dual fuel engine are installed in each of the main engine rooms. This father-and-son arrangement allows for the necessary flexibility with the larger engine having 8,400kW MCR at 514rpm and the smaller one having 6,300kW MCR at 514rpm.

Swinging off the berth in each of the ports it serves, excellent manoeuvrability is key. This is guaranteed by three Brunvoll bow thrusters with an output of 2,500kW each in combination with twin high-efficient, lift-balanced streamlined Becker flap rudders with hub bulb. The rudders can be operated independently or in parallel.

### Functional yet attractive public spaces

Until the abolition of intra-EU duty-free sales in mid-1999, TT-Line offered party cruises on its ro-pax ferries. Today, however, TT-Line's ro-paxes are used as a pure means of transport and this is also reflected in the ship's 3,500m<sup>2</sup> of public spaces which are functional and easy to maintain without being Spartan, well on the contrary. The interior architects, Germany's OCEANARCHITECTS, were also in charge of Hapag-

Lloyd Cruises' latest expedition class vessels, built by VARD. With the superstructure leaning outward, *Nils Holgersson's* aesthetics may look somewhat odd, yet the ship has been designed from the inside out, uniquely offering breathtaking views over the bow.

Two large full-width stair halls divide the three accommodation and public spaces decks into three fire zones. The bridge is positioned immediately above the uppermost vehicle deck with officers and contractor inside cabins as well as the messroom being located immediately abaft it. The two fire zones aft of the forward stair hall on decks 9 and 10 contain the 239 passenger cabins for a total of 644 berths. Besides two and four berth inside and outside cabins, there are three-bed deluxe cabins with a double bed and convertible sofa bed at the extreme rear of decks 9 and 10, overlooking the weather deck. Four even larger family cabins on the outer corners aft can accommodate up to five people. All cabins come with energy-saving units, interrupting the power circuit for

| TECHNICAL PARTICULARS<br>NILS HOLGERSSON              |  |
|---|--|
| Length oa   | 229.4m   |
| Length,bp   | 217.7m   |
| Breadth, moulded                                      | 31.0m  |
| Depth to main deck                                    | 9.5m   |
| Draught, design                                       | 6.3m   |
| Gross tonnage   | 56,138   |
| Net tonnage   | 30,869   |
| Deadweight  | 10,922t  |
| Lanemetres (gross)                                    | 5,015m   |
| Passengers  | 800  |
| Passenger cabins/berths                               | 239/644  |
| Main engines  | 2 x MAN 8L51/60DF + 2 x MAN 6L51/60DF  |
| Output  | 2 x 8,400kW MCR at 514rpm + 2 x 6,300kW at 514rpm  |
| Service speed   | 20.6knots at 22% operation time; 17.6knots at 19% operation time; 14.8knots at 59% operation time  |
| LSAs  | 2 x 150-person VIKING Norsafe lifeboats + 2 VIKING MES   |
| Class (*)   | DNV  |
| Class notation (*)                                    | +1A Passenger ship RO/RO ship, BIS CLEAN, COMF (C-1,V-2), EO, Gas Fuelled, NAUT (AW), LCS (DC), Ice (1B), TMON (Oil lubricated), BWM (T) |
| Flag  | Germany  |
| (*) As built class, transferred to RINa upon delivery |  |





NILS' LOUNGE.  
SOURCE: PHILIPPE  
HOLTHOF

lights and switching the heating in eco mode when there is nobody in the cabin.

There is LED lighting throughout, reducing the power demand for lighting by 80%. In the mid-section, there are a total of 32 outside crew cabins on the portside of decks 9 and 10. Save for the sauna on Deck 9, all public facilities are concentrated on Deck 10 forward as well as Deck 11, the aft part of which gives access to a vast sun deck.

Directly accessed from the forward stair hall on Deck 10 are a commercial drivers' self-service restaurant on the starboard side and the 30-seat Sunrise Pullman Room to the port. An inboard corridor, to the starboard of the pullman lounge, leads to the Smygehuk Bar and Sail-Away Restaurant forward. These bar and restaurant facilities are opened on peak days only, being typically used by groups. For flexibility's sake once again, the restaurant is divided into two separate halves, offering buffet-style meals which are served from the main Deck 10 galley that also serves the Trucker Diner and the Captain Akka's self-service restaurant on Deck 11.

The latter deck is the main passenger deck, being conceived in such a way that the number of staff

can be kept to a strict minimum. The reception desk forward doubles as the main bar and checkout for both the shop and 136-seat Captain Akka's Restaurant. The forward restaurant and bar facilities follow an open plan design with the U-shaped main corridor leading past the Sunnerbo Shop to the reception plaza and then continuing to the self-service restaurant. The reception lobby gives direct access to the Uppsala Bar lounge to port and the Lookout Café to the starboard, adjacent of which is the dedicated 57-seat Trucker Lounge, complete with a small smoker's balcony.

Aft of the single stair hall on Deck 11 is the quiet 62-seat Nils' Lounge to the port and conference rooms to the starboard. This area also boasts the 63m<sup>2</sup> Little Pixy Playland children's playroom on the one hand and a bar counter on the other. The bar also serves the semi-covered outer deck through a hatch in the rear bulkhead. A clever design element are the circular skylights throughout Deck 11, letting in natural light. The sun deck with fixed picnic tables and large wooden sunbeds gives access to Deck 12, the top deck which comes with a walk-around promenade uniquely stretching to the very front. ■



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