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Author Pinkster, J.
Address Delft University of Technology
Ship Hydromechanics Laboratory
Mekelweg 2, 26282 CD Delft

TUDelft

Delft University of Technology

Mv Timca

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Pinkster, J.

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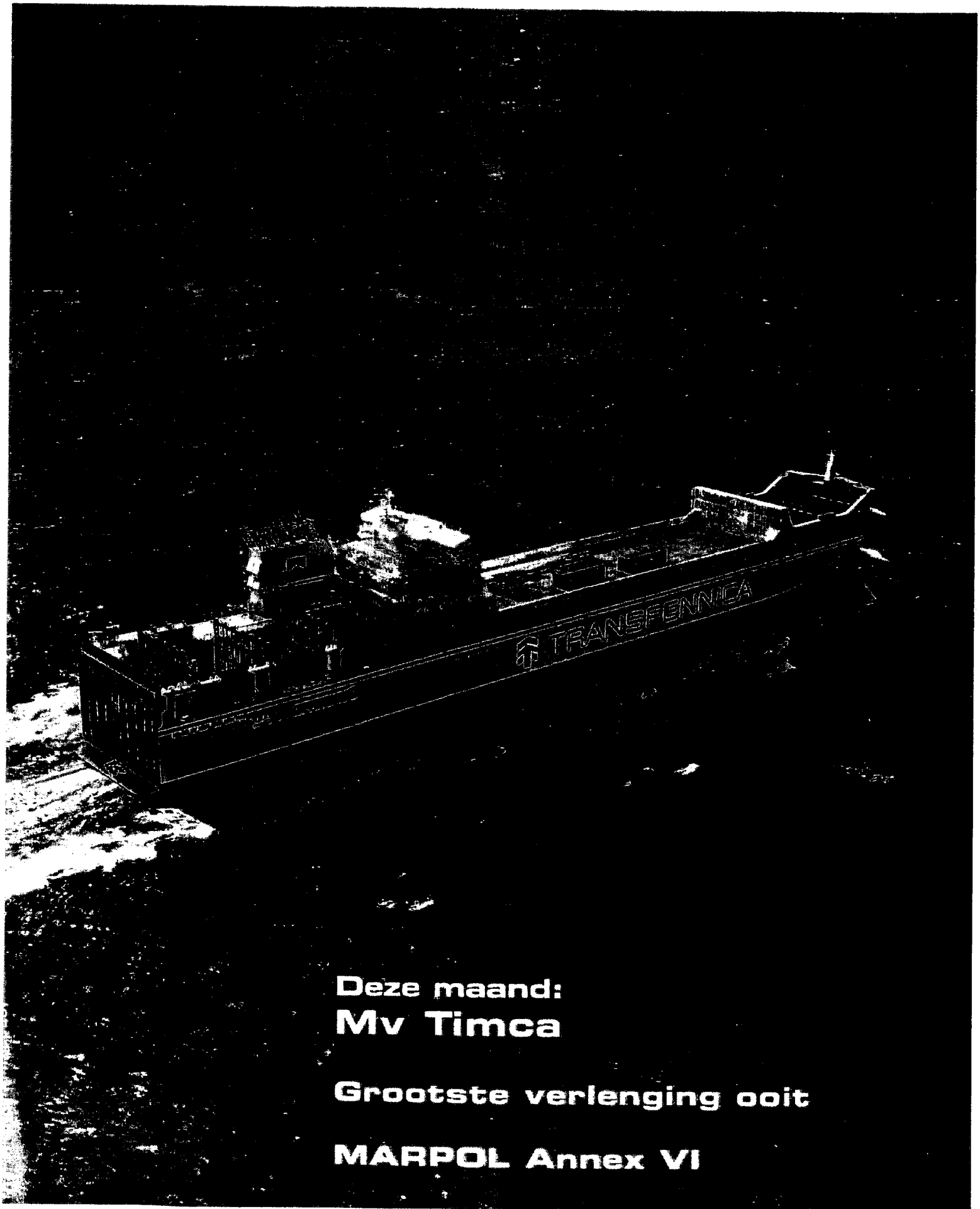

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Veiligheid

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Hoofdredacteur: Ir. C. Dirkse

Eindredactie: M.J. Hoppenbrouwers

Redactie: H.R.M. Dill, G.J. de Boer, ir. W. de Jong, ir. J. Lantau, Ir. J. Pinkster, H. Roorda, M. van Dijk en S. Sakko

Redactie Adviesraad: Mevr. A.A. Boer, Dr. Ir. J.J. Blok, ir. C. Hart Made Jong, Ir. E.W.H. Keizer, Ir. G.H.G. Tegers, Mr. K. Polderman, P. Saman, H. Westra, Ir. K. van der Wiele

Redactie-adres: Mathenesserlaan 185, 3014 HA Rotterdam, telefoon 010-2417435, fax 010-2410095, e-mail swz.rotterdam@wxs.nl

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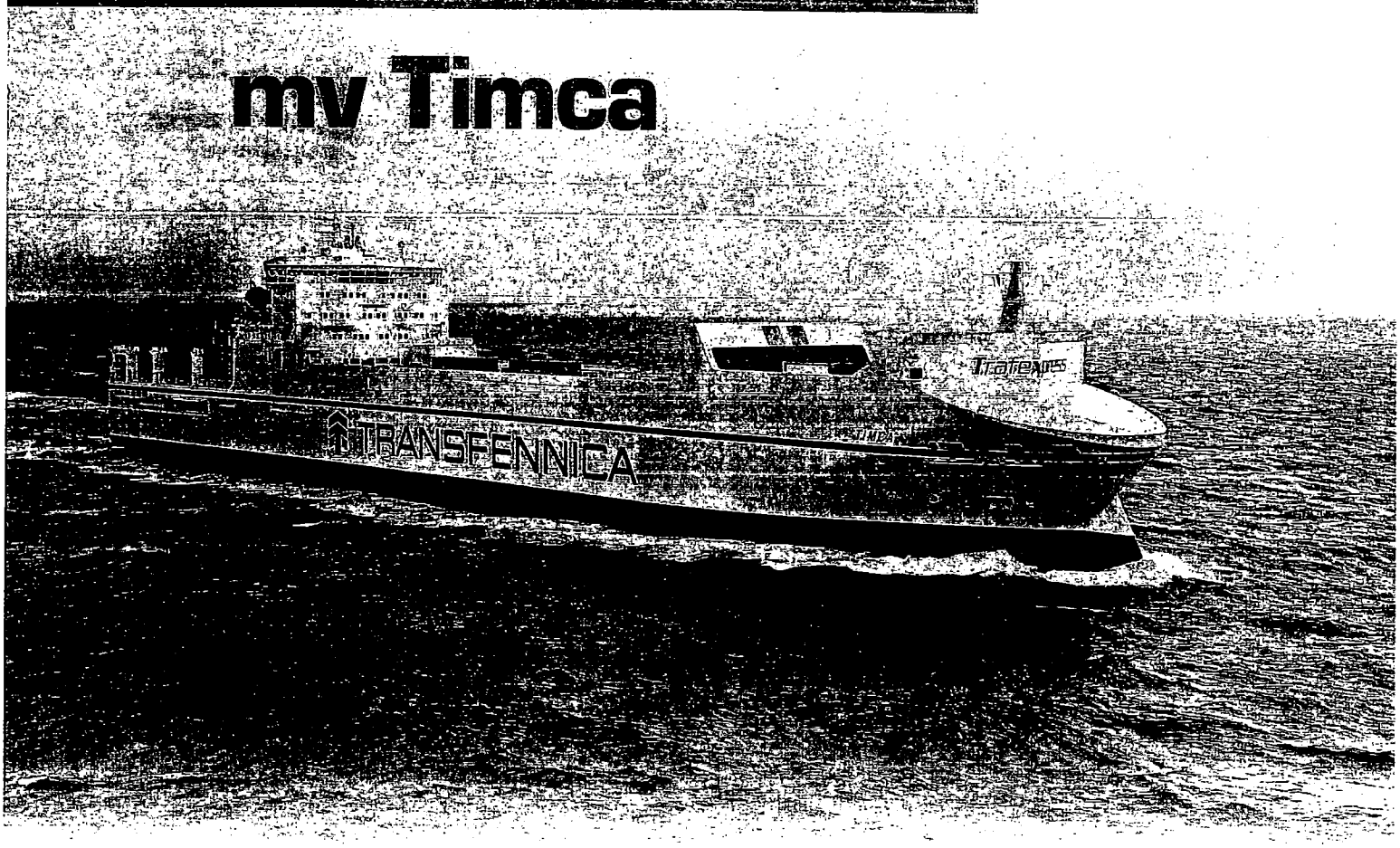
mv Timca



Spliethoff in Amsterdam has become the proud owner of a modern fleet of Multi Purpose Vessels, Container Carriers and RoRo vessels. Included are the first of a number of new vessels ordered by the well known shipping company Transfennica (a company which Spliethoff acquired in 2006). The first of the eight newcomers to the Transfennica fleet is mv Timca, delivered in 2006 by the Szczecin Shipyard in Poland. Mv Timca became operational in July 2006. One sister ship has already followed in 2006. Mv Timca, yard number B201-II/1, operates on a long term time charter basis transporting a wide range of cargoes to and fro on a weekly liner service from Antwerp via Hamina to Hanko. The new highly innovative and novel vessels were designed by Transfennica and Spliethoff.

Jakob Pinkster is marine consultant, docent aan de TU Delft en redacteur van Schip en Werf de Zee.

Design Challenge

The main function of the Timca is to:

- Load, transport and discharge paper rolls with own ramps via Roll on / Roll off method;
- Load, transport and discharge other cargoes such as: trucks, trailers, containers, etcetera;
- Be very flexible and able to carry a large amount of different types of cargoes such as: containers, Ro-Ro, St-Ro and other cargoes in one vessel with a very short turn around time;
- Possess a high degree of manoeuvrability.

In order to do this a seaworthy and highly manoeuvrable Ro-Lo-Ca vessel of 205 metres overall length has been built, fitted out with two fixed pitch bow thrusters and a twin screw propulsion installation. Equipped with Ro-Ro stern gear (25 m wide ramp aft) and a large 2963 metre lane length (yielding a 9313 sq meter hold floor area) for cargo storage, the vessel offers a suitably stable and safe platform for the (often very cold) sea leg of the journey.

The Vessel

The vessel's general design, from bow to stern is dominated by:

- An ice-cutting bulbous bow;
- An enclosed forecastle protected from the sea, housing mooring gear;
- A large open hold containing a maximum of two bays of 45 foot containers up to a height of six containers (52+42=94 FEU) protected by a large wave breaker with a height and breadth covering the forward bay of six containers;
- A large area on the main deck in front of the accommodation block for containers and/or RoRo cargo serviced respectively by shore based cargo cranes or via internal fixed ramps (stern ramp and two internal fixed ramps);
- A large area on the main deck aft of the accommodation block for containers and/or RoRo cargo serviced respectively by shore based cargo cranes or via internal fixed ramps (stern ramp and one internal fixed ramp);
- No cargo handling equipment on deck;

- Below the weather deck, one large hold suitable for RoRo cargo;
- Below the main deck, one large hold situated on the tanktop, suitable for RoRo cargo fitted with a vertically movable (swingable) bulkhead in order to be able to accommodate the carriage of paper rolls. One double bottom, running between collision bulkhead to aftpeak bulkhead.
- Engine room aft housing a twin screw twin engine installation along with auxiliary generators;
- Steering gear room aft below the main deck;
- Exhaust outlet and air intakes along with storage space above the engine room in the funnels aft of the accommodation superstructure;
- Stabilizer fins.

The connoisseurs will recognise that the vessel's overall appearance is far than similar to any of the existing generation of RoRo paper carriers presently operated in the Baltic trades.

The longitudinal subdivision under the main deck is as follows:

- Forepeak for water ballast;
- Bow thruster room;
- Cargo area (with ballast wing tanks between the outer side of the hold and the ships' outer shell plating);
- Engine room (for main engines/generators, auxiliary generators);
- Aft peak for water ballast, on top of which the steering gear room is situated.

The tank capacities of the vessel (100%) are (approximately) as follows:

- Total storage capacity of heavy fuel oil 1,880 m^3
- Total storage capacity of marine diesel oil 475 m^3
- Total storage capacity of lubricating oil 47 m^3
- Total storage capacity of fresh water 205 m^3
- Total storage capacity of ballast water 8,000 m^3

Cargo Spaces & Hold Ventilation

The RoRo cargoes are free to be placed on five different vertical levels in the vessel. The highest two levels are directly on the upper deck foreward and aft of the accommodation, the lowest level is on the tank top which is the floor of the lowest of the two box holds and two intermediate levels are situated on a deck above and also on the main deck. The extremely wide range of cargo capacities may be deduced from the tables.

Main Particulars ms Timca

Call sign	PHFE
IMO nr	9307358
Port of registry	Amsterdam
Flag	The Netherlands
Classification	Lloyds Register ✠100 A1 Roll on Roll Off Cargo Ship, Container cargoes on Trailer Deck and weather Deck, Ice Class 1AS, Finnish ice class rules, LI, IWS, ✠LMC, UMS, NAV 1, with descriptive note PC, WBT, SCM
Built	2006
G.T.	28,30t
N.T.	7,400t
DWT	17,564t
Displacement	approx 30,900 t
Length o.a.	205.00 m
Length b.p.	190.00 m
Breadth moulded	25.50 m
Depth to weather deck	21.25 m
Depth to trailer deck	15.65 m
Depth to main deck	9.00 m
Draft (design) above bottom of keel	7.20 m
Draft (scantling) above bottom of keel	8.40 m
Speed (design draught)	22.70 knots
Number of holds	4
Number of stern ramps	1
Number of fixed ramps	1 (weather deck, main deck up-per deck, lower deck-tank top)
Free deck space	9,319 sqm
Lane metres	2,963 lm
Main engine	2 x Wartsila 12 V 46 B (13,500 kW each @ 500 rpm)
Speed (at 7.20 m. BF 2, clean bottom even keel calm sea)	22.0 knots
Bow thruster	2 x Wartsila FP (850 kW each)
Trial speed	23.5 knots
service speed	22 knots
Auxiliary engine	2 x Wartsila 8L 20 (1,360 kW each @ 500 rpm)
Shaft generator	2 x 1,700 kW

The main deck is accessed from the stern via a stern door ramp. This single ramp unit increases the length of the main deck by up to approximately 18 m. and is opened by wire. This stern ramp opens up to produce a clear stern opening of 24.0 m across and 6.5/7.5 m high access to different decks.

An open area beneath the funnels on the port side of the main deck gives direct access via a fix ramp from the stern ramp to the trailer deck and then again another fixed ramp to the weather deck which is protected at the sides by fixed bulwarks. The latter ramp is shut off at the bottom by a vertical top hinged watertight swinging door.

Access to the lower hold is gained by a fixed ramp which is again shut off at the bottom by a vertical top hinged watertight swinging door.

For service flexibility, the vessel is also fitted with car and container lashing points.

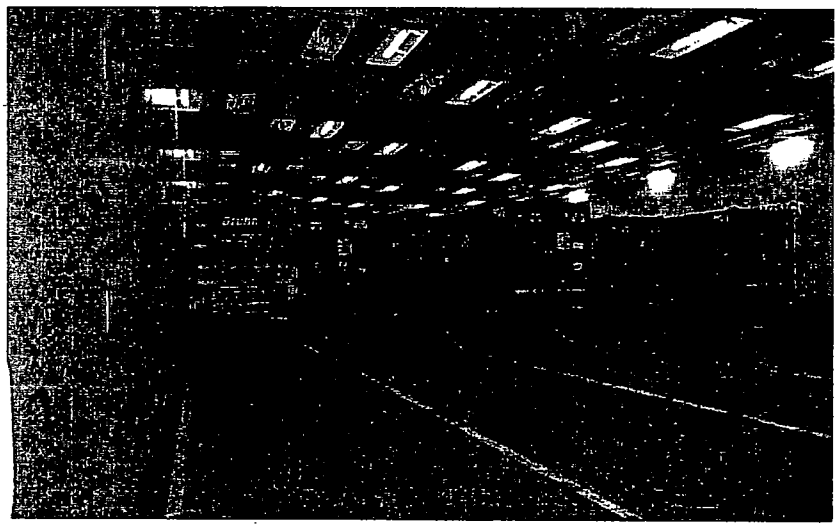
Hold ventilation is particularly important for RoRo ships during loading and discharging operations in port. Ventilation of the holds is provided per hold by six axial flow fans, 25/10 air changes/hour at loading/sailing. Since paper and forest products are sensitive cargoes with regard to humidity, hold dehumidification systems maintain humidity levels in the areas where paper car-

Cargo Capacity	20' cont LO-LO	RO-RO	30' cont	40' cont	45'cont	SECU	Trailer meters	Deck area
Weatherdeck	297	-	201	132	132	Abt 21	578 m (2.9 m)	1749 m^2
Ramp to WD	-	-	-	-	-	-	44 m (3.0 m)	199 m^2
Trailerdeck hold	-	100	-	-	-	Abt 31	666 m (2.95m)	2096 m^2
Open Trailerdeck	154	-	24	77	73	Abt 10	202 m (2.95 m)	626 m^2
Ramp to TD	-	8	-	-	-	-	130 m (2.95m)	320 m^2
Maindeck	-	158	-	-	-	Abt 35	792 m (3.0 m)	2526 m^2
Tanktop	-	70	-	-	-	Abt 16	493 m (3.0 m)	1567 m^2
Ramp to TT	-	-	-	-	-	-	58 m (3.0 m)	230 m^2
Container hold	192	-	-	94	94	-	-	-
						Abt 113	2963 m	9313 m^2

goes are stored. Hold ventilation and dehumidification are remotely controlled from within the cargo control station situated on the main deck.
Dangerous goods (classes 1-8) can be carried in all holds and on all decks.
Fire fighting systems include for the holds a CO_2 and a spray system in the container hold, a spray system and fire hoses on the open decks.

Accommodation

Accommodation on board is for crew and officers (28). The high standard accommodations are arranged in a deckhouse placed at about one third of the vessel length from aft. Furthermore, a gymnasium and sauna, situated on a tween deck just below the main accommodation block, take care of crew welfare. There is furthermore accommodation for accompanying drivers in the form of six 2 persons cabins.



Mv Timca using her lane length

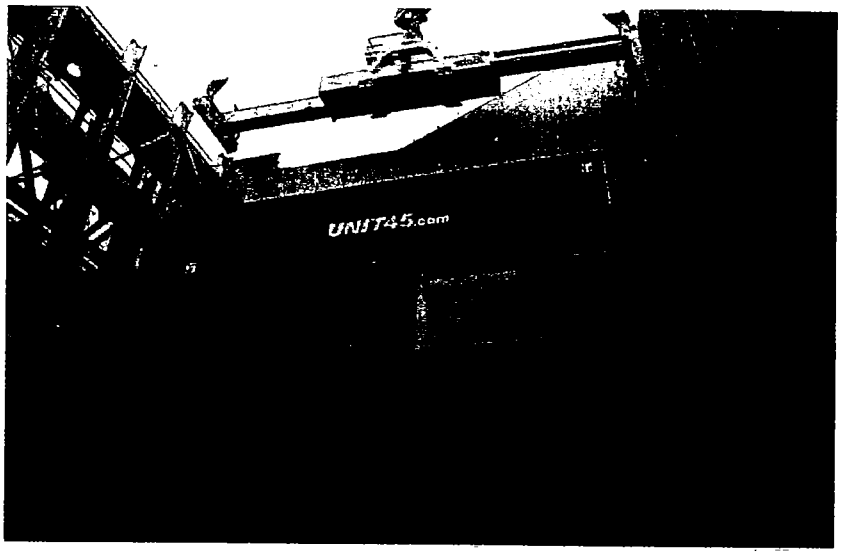
Engine Installation

The vessel has been fitted out with a twin-screw propulsion system. Twin Wärtsilä 12V46 medium-speed main engine, output 12,600 kW each at 500 rpm and burning IFO380, drives a 5.4 m diameter Lips controllable-pitch propeller via a Renke Tacke gearbox with horizontal offset. The attained service speed is 22.0 knots resulting in a fairly economic 80 m^3 of fuel bunkers per day round trip. Furthermore, a shaft generator (output 1700 kW, is driven by each main engine via a PTO from the gearbox.
Besides the twin propeller installations, to enhance vessel manoeuvring two bow

Ro-Ro Accesses:	
Sternramp	Length 15.2m - 3.0m flaps - Beam abt 24.0m - SWL 340t
Clear access opening	Weatherdeck - width 4.6m x height 7.2 m (via fixed ramp)
	Trailerdeck width 6.5 x height 4.6 m (via fixed ramp)
	Maindeck width 10.5m x height 8.0m*
	Tanktop width 4.15m x height 5.5m (via fixed ramp)

Deck loads:	Weatherdeck	Trailerdeck hold	Open Trailerdeck	Maindeck	Tanktop
Uniform load	2.0t/m^2	4.0t/m^2	2.0t/m^2	5.0t/m^2	6.0t/m^2
Road trailers	15t/axle 2/3 axles	15t/axle 2/3 axles	15t/axle 2/3 axles	15t/axle 2/3 axles	15t/axle 2/3 axles
Containers	20' 46t/stack - 207t/bay		20' 56t/stack		
	30' 60t/stack - 270t/bay		30' 75t/stack		
	40' 72t/stack - 360t/bay		40' 100t/stack		
	45' 72t/stack - 360t/bay		45' 100t/stack		
Mafi trailers		80 T SWL	80 T SWL	100 T SWL **	100 T SWL **
Cassettes		80 T SWL	80 T SWL	80 T SWL **	80 T SWL
Secu-boxes	93 T SWL 450t/bay	93 T SWL 450t/bay	93 T SWL	93 T SWL	93 T SWL

* = 8.0 m clear height in area of 25 m length (265 m^2), 27 m length with declining height 8.0 m - 5.5 m and remaining area 5.5 m clear height
** = Maximum loaded lanes limited to 5



Box hold mv Timca looking forehead, up from the tank top

thrusters have been fitted (850 kW each) and furthermore two high efficiency rudders.

Auxiliary Installation

Hold ventilation requirements in port during loading/discharging account for a large part of the electrical requirements on a RoRo ship. Besides the aforementioned shaft generator, Timca has two auxiliary generator sets, two PTO shaft generators and one emergency generator. The auxiliary diesel generator engine (air started) is a Wärtsilä (Type 8L20), with an output of 1360 kW.

Stabilisation/Heeling Systems

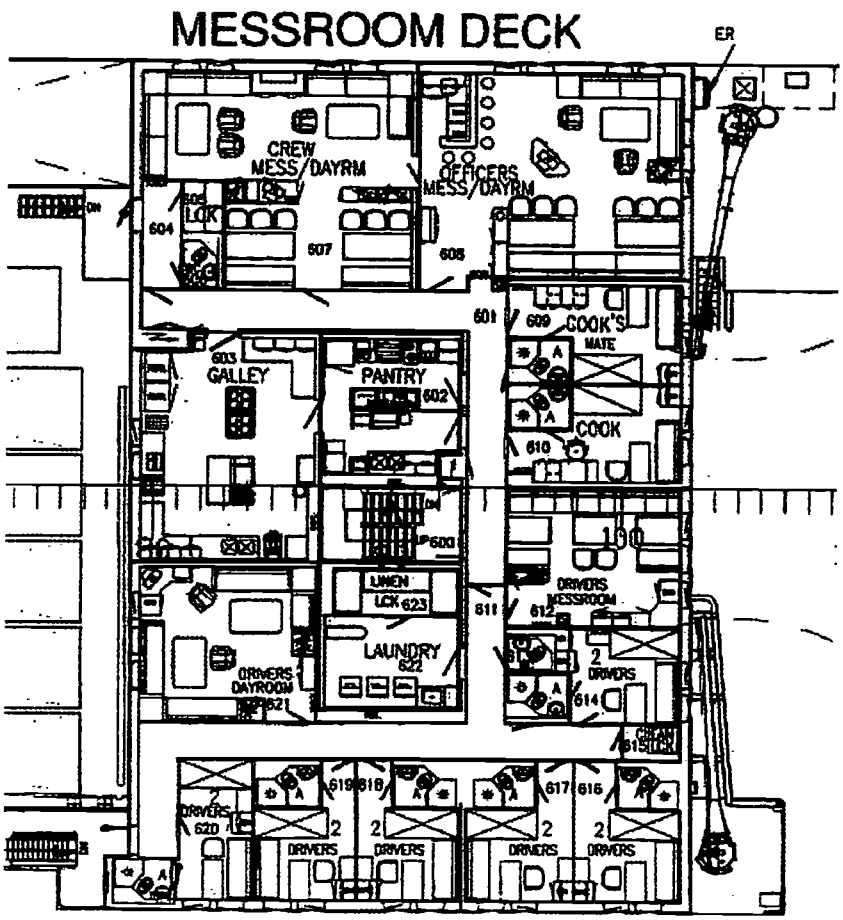
Safe sailing in bad weather is enhanced with stabilizing fins. This system will reduce heavy rolling due to bad weather and help prevent cargo damage and, in extreme cases, the shifting of cargo or even subsequent capsizing. In port, anti-heeling ballasting operations during loading/discharging are controlled via a Rolls Royce-fitted system in the cargo control station on the main deck.

Ice Navigation

Lloyd's Register ice class 1AS has been chosen to determine the hull scantlings of and main engine power to be installed on mv Timca so that she may successfully navigate the icy winter waters of the Baltic. Further measures to combat the ice and cold are visible in the form of full width completely enclosed wheelhouse bridges, sheltered mooring stations, an ice horn fitted to the rudder, heavy fuel oil tanks, heated and positioned away from the hull sides. Finally trace heating is fitted on all fuel piping whilst a partial length of the ramp serving the weather deck is also heated to ensure it remains ice-free during winter loading/discharging operations in the Baltic.

The holds, external and internal ramps have been surfaced with welded herring bars in order to produce an anti-slip surface under icy conditions.

The main engine and propulsion installation



General arrangment of the messroom deck

Navigation & Communication

The usual extensive list of navigation equipment has been installed for this vessel as required necessary for the trade and routes envisaged.