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special issue

SMM

September 2006

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## Gdynia Shipyard, Gdynia

| Ship / Type | Yard No | Tonnage / Capacity / Size | Owner / Operator | Delivery |
|---|---|---|---|---|
| vehicle carrier (PC/TC) | 8168 / 15 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2006 |
| vehicle carrier (PC/TC) | 8168 / 16 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2006 |
| vehicle carrier (PC/TC) | 8168 / 17 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2006 |
| vehicle carrier (PC/TC) | 8168 / 18 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2007 |
| vehicle carrier (PC/TC) | 8168 / 19 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2007 |
| vehicle carrier (PC/TC) | 8168 / 20 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2007 |
| vehicle carrier (PC/TC) | 8168 / 21 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2008 |
| vehicle carrier (PC/TC) | 8168 / 22 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2008 |
| vehicle carrier (PC/TC) | 8168 / 23 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2008 |
| vehicle carrier (PC/TC) | 8168 / 24 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2008 |
| vehicle carrier (PC/TC) | 8168 / 25 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2008 |
| vehicle carrier (PC/TC) | 8168 / 26 | 21 000 dwt / 6600 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2008 |
| containership | 8184 / 14 | 39 000 dwt / 2700 TEU | MS „NB 8184 / 14" John-Peter Wulff Schiffahrtsgesellschaft mbH & Co. KG, Germany | 2006 |
| containership | 8184 / 21 | 39 000 dwt / 2700 TEU | Polaris Shipmanagement Company Limited, Douglas, Isle of Man | 2006 |
| containership | 8184 / 22 | 39 000 dwt / 2700 TEU | Polaris Shipmanagement Company Limited, Douglas, Isle of Man | 2006 |
| containership | 8184 / 23 | 39 000 dwt / 2700 TEU | Polaris Shipmanagement Company Limited, Douglas, Isle of Man | 2007 |
| LPG / NH3 gas carrier | 8185 / 3 | 56 745 dwt / 78 500 cb m | Ocean Gas Limited, Douglas, Isle of Man | 2008 |
| LPG / NH3 gas carrier | 8185 / 4 | 56 745 dwt / 78 500 cb m | Ocean Gas Limited, Douglas, Isle of Man | 2009 |
| mpp cs | 8228 / 5 | 45 000 dwt / 45 000 dwt | Westwood Shipping Lines Inc, Seattle, USA | 2008 |
| mpp cs | 8228 / 6 | 45 000 dwt / 45 000 dwt | Westwood Shipping Lines Inc, Seattle, USA | 2008 |
| mpp cs | 8228 / 7 | 45 000 dwt / 45 000 dwt | Westwood Shipping Lines Inc, Seattle, USA | 2008 |
| vehicle carrier (PC/TC) | 8245 / 3 | 7 800 dwt / 2130 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2006 |
| vehicle carrier (PC/TC) | 8245 / 4 | 7 800 dwt / 2130 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2006 |
| vehicle carrier (PC/TC) | 8245 / 5 | 7 800 dwt / 2130 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2007 |
| vehicle carrier (PC/TC) | 8245 / 6 | 7 800 dwt / 2130 cars | Ray Car Carriers Limited, Douglas, Isle of Man | 2007 |
| containership | 8276 / 2 | 58 000 dwt / 4540 TEU | MS „Viktoria Wulff" John-Peter Wulff Schiffahrtsgesellschaft mbH & Co.KG - Kollmar, Germany | 2006 |
| containership | 8184 / 13 | 39 000 dwt / 2700 TEU | Westermarsch Shipping GmbH & Co.KG, Germany | 2006 |
| containership | 8184 / 15 | 39 000 dwt / 2700 TEU | „Passat Star" Schiffahrtsgesellschaft mbH + CO. KG Hamburg , Germany | 2007 |
| containership | 8184 / 18 | 39 000 dwt / 2700 TEU | Peter Dohle Schiffsbeteiligungs-KG (GmbH & Co.), Hamburg, Germany | 2006 |
| containership | 8184 / 19 | 39 000 dwt / 2700 TEU | Peter Dohle Schiffsbeteiligungs-KG (GmbH & Co.), Hamburg, Germany | 2007 |
| containership | 8184 / 20 | 39 000 dwt / 2700 TEU | Peter Dohle Schiffsbeteiligungs-KG (GmbH & Co.), Hamburg, Germany | 2007 |
| containership | 8184 / 26 | 39 000 dwt / 2700 TEU | Peter Dohle Schiffsbeteiligungs-KG (GmbH & Co.), Hamburg, Germany | 2007 |

The yard has not provided totals with table, however it is worth mentioning, as it was revealed in press release in August, the Yard had at that time 34 ships on order with a total contractual value of USD 1.5 billion and EUR 25 million.

*data in table as of **01.09.2006**; **PC/TC** - pure car / truck carrier;*
***mpp cs** - multi-purpose cargo ship / OHBC (open hatch bulk carrier) / con-bulker with deck gantry cranes.*

## Stocznia Gdańsk SA (Gdańsk Shipyard), Gdańsk

| Ship / Type | Yard No | Tonnage / Capacity / Size | Owner / Operator | Delivery |
|---|---|---|---|---|
| ***Information as provided by the Shipyard (official data)*** | | | | |
| partly outfitted ship hulls (5 units) | - | - | Norwegian owners | - |
| blocks (hull sections) (2 units) | - | - | Finnish owners | - |
| containerships (2 units) | - | - | subcontracted from Gdynia Shipyard | - |
| ship sections | - | - | subcontracted from Gdynia Shipyard | - |

## Stocznia Gdańsk SA (Gdańsk Shipyard), Gdańsk

| Ship / Type | Yard No | Tonnage / Capacity / Size | Owner / Operator | Delivery |
|---|---|---|---|---|
| ***Information from various independent sources (unofficial and unconfirmed data; may either supplement or partially repeat / overlap with official data)**** | | | | |
| aft and part cargo section of a ro-ro ship / forest products / cassette carrier - *Transtimber* | 450 | 13 800 dwt | subcontracted from Aker Yards Oy, Rauma, Finland; ultimate owners: Transatlantic Rederi AB / Trans Lumi Line AB, Sweden | 2006 |
| seismic research vessel partly outfitted hull - Geo Celtic (ST 327) | | GT 12 215 / 4750 dwt / 100.80 m L.B.P. | subcontracted from AS Bergens Mek. Verksteder, Bergen, Norway; ultimate owners: Ellen Forlands Rederi AS, Bergen, Norway | 2007 |
| containership *Marco Polo* | 8184 / 18 | GT 32 300 / 39 300 dwt / 2732 TEU | Peter Dohle Schiffahrts-KG, Germany | 2006 / 2007 |
| containership *Westermarsch* | 8184 / 13 | GT 32 322 / 39 300 dwt / 2732 TEU | Schiffahrtskontor Rendsburg GmbH, Germany (Hans Peterson & Söhne, – Reederei Rendsburg / Westerships) | 12.2006 |
| containership | 8184 / 15 | GT 32322 / 39 100 dwt / 2732 TEU | Passat Schiffahrtsgesellschaft mbH & Co KG | 2007 |
| containership | 8184 / 19 | GT 32 322 / 39 100 dwt / 2732 TEU | Peter Dohle Schiffahrts-KG, Germany | 2007 |
| containership | 8184 / 20 | GT 32 322 / 39 100 dwt / 2732 TEU | Peter Dohle Schiffahrts-KG, Germany | 2007 |
| containership | 8184 / 26 | GT 32 322 / 39 100 dwt / 2732 TEU | Peter Dohle Schiffahrts-KG, Germany | 2007 |

** please, note that data from the two sections of table does not necessarily add to each other.*

## Gdynia Shipyard, Gdynia

| Ship / Type | Yard No | Tonnage / Capacity / Size | Owner / Operator | Delivery |
|---|---|---|---|---|
| chemical tanker | B588-III / 7 | GT 29 965 / 23 972 CGT / 39 850 dwt | Odfjell ASA, Norway / Odfjell Asia Pte Ltd, Singapore (ship's name Bow Sirius) | 4Q 2006 |
| chemical tanker | B588-III / 8 | GT 29 965 / 23 972 CGT / 39 850 dwt | Odfjell ASA, Norway / Odfjell Asia Pte Ltd, Singapore | 2Q 2007 |
| containership | B178-I / 18 | GT 35 640 / 26 730 CGT / 41 850 dwt / 3100 TEU | MS „Hera" SG GmbH&Co.KG / Peter Dohle Schiffahrts-KG, Germany | 4Q 2006 |
| containership | B178-I / 19 | GT 35 640 / 26 730 CGT / 41 850 dwt / 3100 TEU | Marquest Shipping Company Ltd, Cyprus / ZIM Integrated Shipping, Israel | 1Q 2007 |
| containership | B178-I / 20 | GT 35 640 / 26 730 CGT / 41 850 dwt / 3100 TEU | Hedwig Holding Ltd, Virgin Islands | 2Q 2007 |
| containership | B178-I / 21 | GT 35 640 / 26 730 CGT / 41 850 dwt / 3100 TEU | MS „Hebe" SG GmbH&Co.KG / Peter Dohle Schiffahrts-KG, Germany | 3Q 2008 |
| containership | B178-I / 22 | GT 35 640 / 26 730 CGT / 41 850 dwt / 3100 TEU | MS „Maja" SG GmbH&Co.KG / Peter Dohle Schiffahrts-KG, Germany | 4Q 2008 |
| containership | B178-I / 23 | GT 35 640 / 26 730 CGT / 41 850 dwt / 3100 TEU | Carpentine Limited, Marshall Islands | 1Q 2008 |
| containership | B178-I / 24 | GT 35 640 / 26 730 CGT / 41 850 dwt / 3100 TEU | Pendleton Limited, Marshall Islands | 2Q 2008 |
| containership | B178-III / 1 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | Costa Container Lines, Italy | 1Q 2007 |
| containership | B178-III / 2 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | Costa Container Lines, Italy | 2Q 2007 |
| containership | B178-III / 3 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | Siebzehnte Reederei Neumuhlen GmbH &Cie. KG / Rickmers Reederei GmbH & Cie KG, Germany | 3Q 2007 |
| containership | B178-III / 4 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | Achtzehnte Reederei Neumuhlen GmbH &Cie. KG / Rickmers Reederei GmbH & Cie KG, Germany | 1Q 2008 |
| containership | B178-III / 5 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | Costa Container Lines, Italy | 4Q 2008 |
| containership | B178-III / 6 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | Costa Container Lines, Italy | 1Q 2009 |
| containership | B178-III / 7 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | Einunddreissigste Reederei Neumuhlen GmbH &Cie. KG / Rickmers Reederei, Germany | 2Q 2008 |
| containership | B178-III / 8 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | Zweiunddreissigste Reederei Neumuhlen GmbH &Cie. KG / Rickmers Reederei, Germany | 3Q 2008 |
| containership | B178-III / 9 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | FESCO Lines Hong Kong Limited, Hong Kong / Russia | 3Q 2008 |
| containership | B178-III / 10 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | FESCO Lines Hong Kong Limited, Hong Kong / Russia | 1Q 2009 |
| containership | B178-III / 11 | GT 32 000 / 24 000 CGT / 37 200 dwt / 2800 TEU | FESCO Lines Hong Kong Limited, Hong Kong / Russia | 2Q 2009 |
| containership | B170-V / 1 | GT 16 800 / 13 440 CGT / 23 000 dwt / 1730 TEU | Mar Space Shipping Company Limited, Cyprus / FESCO, Russia | 4Q 2007 |
| containership | B170-V / 2 | GT 16 800 / 13 440 CGT / 23 000 dwt / 1730 TEU | Lightview Shipping Company Limited, Cyprus / FESCO, Russia | 1Q 2008 |
| containership | B170-V / 3 | GT 16 800 / 13 440 CGT / 23 000 dwt / 1730 TEU | Star Warm Shipping Company Limited, , Cyprus / FESCO, Russia | 2Q 2008 |
| containership | B170-V / 4 | GT 16 800 / 13 440 CGT / 23 000 dwt / 1730 TEU | Costa Container Lines, Italy | 4Q 2007 |
| containership | B170-V / 5 | GT 16 800 / 13 440 CGT / 23 000 dwt / 1730 TEU | Costa Container Lines, Italy | 1Q 2009 |
| con-ro | B201-II / 2 | GT 24 800 / 19 840 CGT / 18 250 dwt / 920 TEU | Spliethoff's Bevrachtingkantoor B.V., The Netherlands / Transfennica, Finland | 4Q 2006 |
| con-ro | B201-II / 3 | GT 24 800 / 19 840 CGT / 18 250 dwt / 920 TEU | Spliethoff's Bevrachtingkantoor B.V., The Netherlands / Transfennica, Finland | 1Q 2007 |
| con-ro | B201-II / 4 | GT 24 800 / 19 840 CGT / 18 250 dwt / 920 TEU | Spliethoff's Bevrachtingkantoor B.V., The Netherlands / Transfennica, Finland | 2Q 2007 |
| con-ro | B201-II / 5 | GT 24 800 / 19 840 CGT / 18 250 dwt / 920 TEU | Spliethoff's Bevrachtingkantoor B.V., The Netherlands / Transfennica, Finland | 3Q 2007 |
| con-ro | B201-II / 6 | GT 24 800 / 19 840 CGT / 18 250 dwt / 920 TEU | Spliethoff's Bevrachtingkantoor B.V., The Netherlands / Transfennica, Finland | 4Q 2007 |
| con-ro | B201-II / 7 | GT 24 800 / 19 840 CGT / 18 250 dwt / 920 TEU | Spliethoff's Bevrachtingkantoor B.V., The Netherlands / Transfennica, Finland | 4Q 2008 |
| con-ro | B201-II / 8 | GT 24 800 / 19 840 CGT / 18 250 dwt / 920 TEU | Spliethoff's Bevrachtingkantoor B.V., The Netherlands / Transfennica, Finland | 1Q 2009 |
| mpp cs | B587-IV / 9 | GT 18 500 / 15 725 CGT / 23 700 dwt / 1134 TEU | Spliethoff's Bevrachtingkantoor B.V., The Netherlands | 2Q 2009 |
| mpp cs | B587-IV / 10 | GT 18 500 / 15 725 CGT / 23 700 dwt / 1134 TEU | Spliethoff's Bevrachtingkantoor B.V., The Netherlands | 4Q 2009 |

**Totals: 34** ships, with aggregated deadweight of **1,072,000 t** and gross tonnage of **956 010**, at gross tonnage of **736 584**; total value of contracts: **USD 1 546 718 000**.

*data as of **15.09.2006**; **mpp cs** - geared multi-purpose cargo ship with side-loaders;*
***GT** - gross tonnage; **CGT** - compensated gross tonnage; **dwt** - deadweight in metric tonnes.*

## REMONTOWA Group (Gdańsk Shiprepair Yard Remontowa S.A. and Northern Shipyard S.A.), Gdańsk

| Ship / Type | Yard No | Tonnage / Capacity / Size | Owner / Operator | Delivery |
|---|---|---|---|---|
| passenger ferry 1064 / 1 | B 264 / 1 | GT 873 / 56.40 m L.O.A. | A/S Moltzaus Tankrederi, Norway / Sundbusserne A/S, Denmark | 1Q 2007 |
| passenger ferry 1064 / 2 | B 264 / 2 | GT 873 / 56.40 m L.O.A. | A/S Moltzaus Tankrederi, Norway / Sundbusserne A/S, Denmark | 2Q 2007 |
| ferry *Argyle* (Calmac II) | B 338 / 2 | GT 2612 / 400 dwt / 72.01 m L.O.A. | Caledonian MacBrayne Ltd., UK | 4Q 2006 |
| multi function tender *Pharos* (MFT 1) | B 842 / 1 | GT 2800 / 84 m L.O.A. | The Corporation of Trinity House / Northern Lighthouse Board, UK | 4Q 2006 |
| multi function tender *Galatea* (MFT 2) | B 842 / 1 | GT 2800 / 84 m L.O.A. | The Corporation of Trinity House / Trinity House, UK | 4Q 2006 |
| Kashagan Project evacuation vessels | | | | |
| IBEEV 1 | B 843 / 1 | GT 300 / 30.30 m L.O.A. | AGIP Kazakhstan North Caspian Operating Co NV, Kazakhstan / Eni SpA, Italy | 4Q 2006 |
| IBEEV 2 | B 843 / 2 | GT 300 / 30.30 m L.O.A. | AGIP Kazakhstan North Caspian Operating Co NV, Kazakhstan / Eni SpA, Italy | 3Q 2006 |
| IBEEV 3 | B 843 / 3 | GT 300 / 30.30 m L.O.A. | AGIP Kazakhstan North Caspian Operating Co NV, Kazakhstan / Eni SpA, Italy | 4Q 2006 |
| IBEEV 4 | B 843 / 4 | GT 300 / 30.30 m L.O.A. | AGIP Kazakhstan North Caspian Operating Co NV, Kazakhstan / Eni SpA, Italy | 4Q 2006 |
| *Leonard Tide* (AHTS 120T / 2) | B 844 / 2 | GT 2200 / 1850 dwt / 67.00 L.O.A. / 120 T BP | Tidewater Marine LLC, USA | 4Q 2006 |
| AHTS 120T / 3 | B 844 / 3 | GT 2200 / 1850 dwt / 67.00 L.O.A. / 120 T BP | Tidewater Marine LLC, USA | 3Q 2007 |
| AHTS 120T / 4 | B 844 / 4 | GT 2200 / 1850 dwt / 67.00 L.O.A. / 120 T BP | Tidewater Marine LLC, USA | 3Q 2007 |
| AHTS 120T / 5 | B 844 / 5 | GT 2200 / 1850 dwt / 67.00 L.O.A. / 120 T BP | Tidewater Marine LLC, USA | 4Q 2007 |
| AHTS 120T / 6 | B 844 / 6 | GT 2200 / 1850 dwt / 67.00 L.O.A. / 120 T BP | Tidewater Marine LLC, USA | 1Q 2008 |
| harbour tug (WUŻ 42T BP) | B 845 / 1 | GT 300 / 30.30 m LOA / 42 T BP | „WUZ" Port & Maritime Services Co Ltd., Gdynia, Poland | 4Q 2006 |
| open deck carrier (Meriaura ODC 1) | B 602 / 1 | GT 3000 / 4600 dwt / 101.30 m L.O.A. | VG-Shipping OY Ltd / Meriaura Oy, Finland | 2Q 2007 |
| REM 120 gmpp / container carrier | - | approx. 7000 dwt / 121.50 m L.O.A. / 535 TEU | undisclosed | 2Q 2008 |
| REM 120 gmpp / container carrier | - | approx. 7000 dwt / 121.50 m L.O.A. / 535 TEU | undisclosed | 3Q 2008 |
| Scotland Fishery Protection Vessel | B 846 / 1 | - | Government of The UK / Scottish Fisheries Protection Agency (SFPA), UK | 4Q 2007 |
| LNG / LPG tanker 7500 | - | GT 4000 / 6150 dwt / 7500 cb m / 117.80 m L.O.A. | Anthony Veder Rederijzaken BV, The Netherlands / Gasnor AS | 3Q 2008 |

*data as of 1**5.09.2006**; **AHTS** - anchor handling tug / supply vessel; **gmpp** - geared multi-purpose cargo ship;*
***GT** - gross tonnage; **dwt** - deadweight in metric tonnes; **L.O.A.** - length overall; **BP** - bollard pull in force tons, **cb m** - cubic metres.*

## Damen Shipyards Gdynia, Gdynia

| Ship / Type | Yard No | Tonnage / Capacity / Size | Owner / Operator | Delivery |
|---|---|---|---|---|
| Damen ASD 2810 tug | 511533 | 28.75 m L.O.A. | undisclosed | undisclosed |
| Damen ASD 2810 tug | 511534 | 28.75 m L.O.A. | undisclosed | undisclosed |
| Damen ASD 3211 tug | 511213 | 32.22 m L.O.A. | undisclosed | undisclosed |
| Damen ASD 3211 tug | 511214 | 32.22 m L.O.A. | undisclosed | undisclosed |
| Stan Tender 1504 pilot boat | 502864 | 15.25 m L.O.A. | undisclosed | undisclosed |

*data in table as of **15.09.2006** and as supplied by the Yard; according to other, unofficial sources, the Yard has also some partly outfitted,*
*steel and aluminium hulls of mega-yachts subcontracted from Amels, The Netherlands, on order; **ASD** - azimuthing stern drive.*

## Naval Shipyard Gdynia (Stocznia Marynarki Wojennej SA), Gdynia

| Ship / Type | Yard No | Tonnage / Capacity / Size | Owner / Operator | Delivery |
|---|---|---|---|---|
| ROV support vessel *EDT Protea* | - | - | EDT Towage & Salvage Co Ltd / EDT Offshore, Cyprus | 2006 |
| partly outfitted hull of refrigerated cargo vessel Storfoss | Vaagland 137 | GT 2990 / 2400 dwt | subcontracted from Vaagland Baatbyggeri AS, Norway; ultimate owner: The Iceland Steamship Co Ltd (EIMSKIP ehf) | 2006 |

*data from unofficial sources*

## Gryfia SA (Szczecinska Stocznia Remontowa "Gryfia" SA), Szczecin

| Ship / Type | Yard No | Tonnage / Capacity / Size | Owner / Operator | Delivery |
|---|---|---|---|---|
| patrol vessel *Nornen* | 301 / I | GT 750 / 47.20 m L.O.A. | Remoy Management AS, Norway / Government of The Kingdom of Norway (Norwegian Coast Directorate) | 2006 |
| patrol vessel | 301 / II | GT 800 | Remoy Management AS / Norwegian Coast Directorate (as above) | 2006 |
| patrol vessel | 301 / III | GT 750 | Remoy Management AS / Norwegian Coast Directorate (as above) | 2007 |
| patrol vessel | 301 / IV | GT 800 | Remoy Management AS / Norwegian Coast Directorate (as above) | 2007 |
| patrol vessel | 301 / V | GT 750 | Remoy Management AS / Norwegian Coast Directorate (as above) | 2007 |

*data from unofficial sources*

*Polish shipbuilding industry*

# Mixed fortunes

**During the year 2005 Polish shipyards completed 30 ships of 565 973 CGT and deadweight of 770 000 tonnes, at the value of USD 933 million (all for foreign account), thus returned to the main production level of the years before the 2002-2003 crisis.**

At the and of 2005 the order book consisted of 87 units of 1 660 744 CGT and the value of USD 3168 million (all for foreign account). The orderbook consisted mainly of container ships (46 pcs. - over 1 mil. CGT), followed by car carriers and ro-ro (con-ro) vessels.

There is significant growth of number and value of non-cargo vessels ordered. The intake of new orders during the year was moderate - 22 ships of 246 043 CGT or 300 000 dwt - in consequence of high ordering activity in 2004 and sufficient backlog of shipyards for coming years. In 2006 contracting in major Polish newbuilding yards was also not too fast, mainly due to uncertainty experienced by Polish yards.

For the period of 2005, Gdynia Shipyard, Gdansk Shipyard and Szczecin New Shipyard, were concentrating production on their best products: - Gdynia Shipyard - car carriers 6600 PTCT and 2000 PCTC, container ships and LPG-NH3 carriers, - Gdansk Shipyard - container ships 2700 TEU, - Szczecin New Shipyard - container ships 1700-3100 TEU, con-ros of 20 000 CGT and chemical tankers with Duplex steel tanks.

Gdansk Shiprepair Yard Remontowa and particularly newbuilding yard Northern Shipyard, member of REMONTOWA Group, are focusing mainly on non-cargo vessels of high added value. The production programme of those two yards consists of various kinds of ferries, anchor handling, towing & supply vessels, multi-function buoy tenders, rapid intervention vessels, ice breaking emergency evacuation vessels, tugs and fishing vessels. 10 ship of this kind were delivered in 2005 and 14 are to be completed in 2006.

This is change in production programme and policies at major newbuilding yards, that make it hard to find any interesting prototype newbuildings. It therefore may seem they have not much to offer in new designs. But they are benefiting from easier production of ships repeating in longer series. This improves productivity and reduces costs.

The opposite philosophy was adopted by major force in Polish shiprepair industry, having the lion's share of the market - the REMONTOWA Group, which increasingly relies on income from new construction. Building smaller vessels, it has to enter niche markets for specialized, more profitable tonnage.

Gdansk Shiprepair Yard Remontowa SA regards the year 2005 as a really good one. Notwithstanding the general poor situation in Polish shipbuilding industry and harsh competition environment, Remontowa SA managed to achieve sales level of PLN 860 million, which marks over 200 percent increase over the 2004 result. Also the net profit exceeded the previous years' results, at PLN 22 million in 2005. It appears it is possible even despite the domination of prototypes in last years newbuilding production portfolio, while newbuildings contributed as much as 32 percent to the Group's sales and conversions constituted 31 percent of the income, leaving just slightly above one third generated from repairs.

The year 2005 saw the construction of 10 ships at Remontowa, and its newbuildings specialised subsidiary Stocznia Północna (Northern Shipyard). The number included two AHTS offshore tugs, built to prestigious contract from the world's leading offshore support vessels operator - US based Tidewater; ferries for Norwegian and Scotch owners, arctic containership and modern fishing vessels. Work on another nine newbuildings commenced during 2005, too.

The Group expects to deliver 14 ships during 2006, including interesting prototypes, eg. small emergency evacuation ships for Caspian Sea's Kashagan oilfield project.

The REMONTOWA Group, having its newbuilding portfolio filled up for 2006 deliveries, was accepting, at the turn of 2005 and 2006, orders with planned deliveries scheduled for 2007.

Besides the overall increase in Group's sales, an important factor is an increasing share of newbuildings in total income. This trend is about to deepen further to some extend, although the Group does not give up repair business. Last year almost 200 ships underwent repair works at Remontowa.

The sales of the whole Remontowa SA Group, which also includes ship equipment manufacturing companies, was PLN 1.2 billion in 2005. Positive outlook for Remontowa's subsidiary focused on newbuildings - Northern Shipyard - is facilitated by favorable changes in sales structure with partly outfitted hulls on the decrease and fully equipped ships for turn-key delivery on the rise. Also proportion of more sophisticated ships, potentially generating higher sales value, is also increasing on the expense of simpler works with lower added value.

After the bankruptcy of Stocznia Szczecinska Porta Holding in 2002 and crisis of Gdynia Shipyard in 2002-2003, a State backed rescue and restructuring programmes for those yards and Gdansk Shipyard - member of Gdynia Group - have been implemented under control and with support of Industry Development Agency. Restructuring programme of Szczecin New Shipyard has been successfully completed. The shipyard regained technical and financial stability as well as bank credibility. The yard is fully owned by State. Restructuring programmes of Gdynia Shipyard and Gdansk Shipyard, although formally concluded, have been recognized as incomplete and implemented with delay. Gdynia Shipyard has to repay restructured debts and has got the problems with retarded deliveries and not balanced income and spendings. Additionally an increasing social tension between this mother-yard andGdansk Shipyard, bought by Gdynia in 1998, led to demerging in summer, 2006. Both yards are State controlled, but are now seeking private investors.

The concept of consolidation of all three main shipbuilding yards, forced previously by Industry Development Agency has been recognized as not feasible and abandoned. In mid of 2005 The European Commission has opened the investigation of conformity of public support granted to Polish shipbuilding yards with UE rules. This investigation is still under way and the results are impatiently awaited and expected by the end of this year. Some opinions say this process is frightening off potential investors.

Besides financial instability in some of the yards and lack of funds for investment in modern technology, the single most serious problem affecting Polish yards now is the exodus of qualified personnel to better paying West European countries, mainly Germany, Norway and the UK. The situation has forced Polish shipyards to replace at least part of the lost workforce by cheaper welders and fitters from Ukraine and even, incidentally, from North Korea.

**Piotr B. Starenczak**

**(on the basis of data of CESA, Forum Okretowe - The Association of Polish Maritime Industries)**

# First LNG carrier to be built in Poland

Fig.: Anthony Veder


***Illustration of a 7,500 cbm LNG / ethylene / LPG carrier to be built by Remontowa S.A.***

Not much information has been revealed so far on this ship, being a breakthrough for Polish shipbuilding industry, which so far has been building LPG carriers only.

Remontowa S.A. signed a newbuilding contract for a short range LNG carrier to be built for Dutch owner Anthony Veder (Anthony Veder Rederijzaken BV) on July 18, 2006. It will be also the first LNG gas tanker in Rotterdam based shipping company's fleet, employing mainly small LPG carriers. The unique vessel, scheduled for delivery in 2008, is destined for regional distribution of LNG, with a capacity of 7,500 cbm and will act as an LNG feeder vessel in Northern Europe. In addition to LNG, the vessel will be able to transport other gases as well, including liquefied petroleum gas (LPG) and other petrochemical gases, including ethylene.

The ship to be built at Remontowa S.A. is to be operated under a long term (15 years) time charter from the Norwegian LNG distributor Gasnor AS.

The LNG will be transported at temperature of minus 163 degrees centigrade. This ship will be exceptionally environmentally-friendly as it will use the LNG as fuel, significantly decreasing the emission of exhaust fumes such as the greenhouse gas $CO_2$. The propulsion will be effected by two diesel engines reduction geared to screw shafts driving two directional propellers

The LNG / ethylene / LPG carrier, probably to be named *Coral Methane*, will be 117.80 m in length, 18.60 m wide and will feature deadweight of 6150 t.

Photo: Adam Woźniczka


# World's largest stainless steel parcel tankers

**Bow Sea, *the 6th chemical tanker of the B-588 type left Szczecin New Shipyard in April 2006.***

Szczecin New Shipyard Ltd. is nearing completion of the contract, signed on August 1, 2003, to build the B588 series - the world's largest chemical tankers with stainless steel cargo tanks, for Norwegian owners Odfjell ASA (meanwhile extended to a total of 8 units). According to unofficial information the price per unit was USD 54 million at the time of signing the initial contract, which might have been renegotiated since.

The first unit from the series, the B588-III/1 *Bow Sun*, was officially delivered and left the yard on August 1, 2003. *Bow Star* and *Bow Spring* were delivered during 2004, while *Bow Sky* in April 2005. May 2005 saw launch of the fifth of eight contracted vessels - *Bow Summer*, which was delivered the same year. This year already the sixth unit - *Bow Sea* - has been delivered.

The shipyard has 2 units of the B588 series still on order. They are destined for delivery in 4th quarter of this year and 2nd quarter of 2007. June 17, this year, saw the launching of the seventh out of eight units ordered - the *Bow Sirius*, with expected delivery in November or December.

The B588 type ship is suitable for the carriage of IMO type I, II and III chemicals, as well as clean oil products, acids, vegetable and fish oils and animal fats, molasses, etc.

A double skin is arranged for the sides, double bottom space for the whole cargo area, in compliance with IMO and USCG tanker requirements. The surface inside all cargo tanks is free of obstructions, such as structural members. The cargo area has a centre section and two wing sections, separated by two longitudinal sandwich type bulkheads (cofferdams).

The centre section is divided into 18 duplex stainless steel tanks, including two slop tanks and the wing sections divided into 8 duplex stainless steel pairs of tanks (16 wing cargo tanks), by transverse corrugated bulkheads, for a total of 34 completely segregated cargo tanks, as per IMO requirements.

Double bottom and sides for ballast water are arranged for the full length of the cargo area and subdivided into the same number of tanks as cargo wing tanks and as required by the damage stability regulations. Cofferdam bulkheads between centre and wing cargo tanks and a part of double bottom tanks are void spaces.

To improve the cargo carriage flexibility additionally on main deck, six (6) deck tanks made of duplex stainless steel with capacity 354 $m^3$ and cargo specific gravity 1.7 $t/m^3$ each are provided.

Sloshing and heeling effects of the cargo was taken into consideration in the design and construction of all the tanks so that they can be partially filled without filling restrictions. Hull structure is designed for 40 year of fatigue life and confirmed by DNV.

The vessel is equipped with Rolls-Royce KaMeWa Ulstein made, TT2000 FP-KI type, 1000 kW hydraulically driven bow thruster, to provide thrust during docking/undocking operations, in all loading conditions.

The vessel is registered under the Norwegian flag and fulfils requirements of Norwegian maritime administration and all the International Conventions applicable to this type of vessel.

From the unit no. 3 on, some structural design and other design changes and adjustments have been made under agreement with the owner, allowing for production technology simplification in some areas and enabling slight production cost reductions.

To obtain excellent maneuverability for this type of vessel and fulfill IMO requirements rotary-vane steering gear, of Rolls-Royce Fryndebo make, with working angle ±70° and Schilling rudder are provided.

To serve manifold area, two (2), Towimor SA made, electro-hydraulically driven cranes of hoisting capacity of 10 t SWL and complying with OCIMF recommendations are provided. For the provision and ER spare parts handling, one (1) electro-hydraulically driven crane, 40 kN, from the same supplier, is provided on the port side,

in the area between accommodation block and separate engine casing.

Anchor, mooring and towing equipment complies also with OCIMF and consist of:

- two (2) Towimor windlasses for chain 76 mm/K3,
- four (4) Towimor made mooring winches of nominal pull 200 kN, non-selftensioning type,
- two (2) bow stockless anchors, 9300 kg each,
- two (2) anchor chains; 76 mm dia,
- two (2) anchor chain stoppers.

Emergency towing arrangements, in accordance with Resolution MSC 35/63, supplied by Towimor, are installed fore and aft. Life-saving appliances consist of Fassmer free-fall lifeboat for 37 person with hydraulically driven lifeboat davit, Fassmer rescue boat, DSB liferafts, lifebuoys, etc. according to SOLAS requirement. MOB rescue boat davit was supplied by Towimor.

Lighting appliances onboard Szczecin built chemical tanker come from another Polish manufacturer - Famor.

Accommodation spaces are provided for 31 persons of crew and 6 persons of Suez Canal crew. All crew cabins are single type with individual sanitary blocks. Cabin interiors are up to the highest Scandinavian standard. In addition, public / duty spaces for crew e.g. crew's messroom, officers' messroom, crew's TV / recreation room, officers' TV / recreation room, duty messroom, gymnasium, officers' galley, etc. are provided.

Propulsion system consists of one Wärtislä NSD designed main engine type 6RTA 58TB, 12 750 kW, 105 rpm delivered by H. Cegielski, Poland, driving KaMeWa Ulstein controllable pitch propeller of 6.8 m dia. Shaft generator driven via tunnel gear is provided.

For electric power on units no. 3 on from the B588 series and on generation there are installed:

- three (3) gen-sets, based on medium-speed diesel engines 6L28/32H of 1500 kW each delivered by H. Cegielski, with SAM Electronics alternator supplying 1499 kVA; 60 Hz, 3×440 V (while on two initial units, including prototype *Bow Sun*, these were 5L27/35 diesels based gen-sets, providing 1780 kVA each)
- one (1) SAM Electronics shaft alternator; 1838 kVA; 60 Hz, 3×440 V
- one (1) emergency diesel generator with MAN D2866 TE 218 kW diesel, and 220 kVA; 60 Hz, 3×440 V alternator (250 kVA on initial units from the B588 series)

The vessel is arranged for loading and unloading of homogeneous cargo via midship cargo manifolds, maximum loading and unloading rate of 3000 m³/hr (at 110 mlc, s.g. 0,9; visc. 1,0 cSt).

Independent cargo pumping and piping system (one tank - one pump system) is provided for each cargo, slop and deck tanks. The cargo is heated by a steam/water system with hot water circulating in coils in cargo tanks. Each tank has at least two separate sets of longitudinally welded coils made of duplex stainless steel. The water is heated by steam via two (2) heat exchangers. Heat exchangers with their circulating pumps, expansion vessels and control equipment are arranged in deckhouse on main deck, in front of superstructure (heater compartment).

The inert gas system is supplied by Unitor. The same company also supplies ventilation system, provisions stores refrigeration system as well as deck foam fire-fighting system. „Dry Air System" for cargo tanks drying is supplied by Alfsen og Gunderson AS.

An Integrated Control and Monitoring System (ICMS) is installed, fulfilling Class requirements for unattended Engine Room, to control and monitor also the whole cargo operation, including control of cargo pumps and cargo valves, ballast pumps and ballast valves, T/C pumps, monitoring of cargo tanks and the carried cargo. General, machinery and cargo handling automation systems are supplied by Norcontrol and Saab Rosemount Marine. Engine Control Room and Cargo Control Room are provided.

Radio communication system complies with GMDSS requirement issued by IMO.

## Main particulars

| | |
|---|---|
| Length O.A. | 182.88 m |
| Length B.P. | 175.25 m |
| Breadth, moulded | 32.20 m |
| Depth, moulded | 17.95 m |
| Scantling draught | 11.50 m |
| Deadweight* | 39 842 t |
| GT | 29 965 |
| NT | 11 269 |
| Compensated tonnage | 23 972 CGT |
| Service Speed | 15,30 kn |
| Main propulsion power | 12 750 kW |

**** - according to some sources - 40 000 t***

## Tank capacities

| | |
|---|---|
| cargo tanks | 52 126 m³ |
| ballast tanks | 16 076 m³ |
| heavy fuel tanks | 2 000 m³ |

## Classification

The vessel was built under the survey and in accordance with the rules and regulations of the Norwegian classification society Det norske Veritas and will be classed and registered as:
DNV ✠1A1 Tanker for Chemicals and Oil Products ESP E0 NAUT-OC LCS (SID) VCS-2 HL (1.85 t/m3 for centre tanks, 1.25 t/m³ for wing tanks, 1.70 t/m³ for deck tanks) PLUS-2 ETC TMON NAUTICUS (Newbuilding), Ship type 1 & 2. Centre / slop tanks: a2, b3, c3, v3, f2, str 0.1, ss, T4 IIA / IIB / IIC. Wing tanks: a2, b3, c3, v3, f2, str 0.1, ss, T4 IIA / II B Deck tanks: a3, b3, c3, v3, f3, str 0.1, ss, T4 IIA / IIB

## Draft

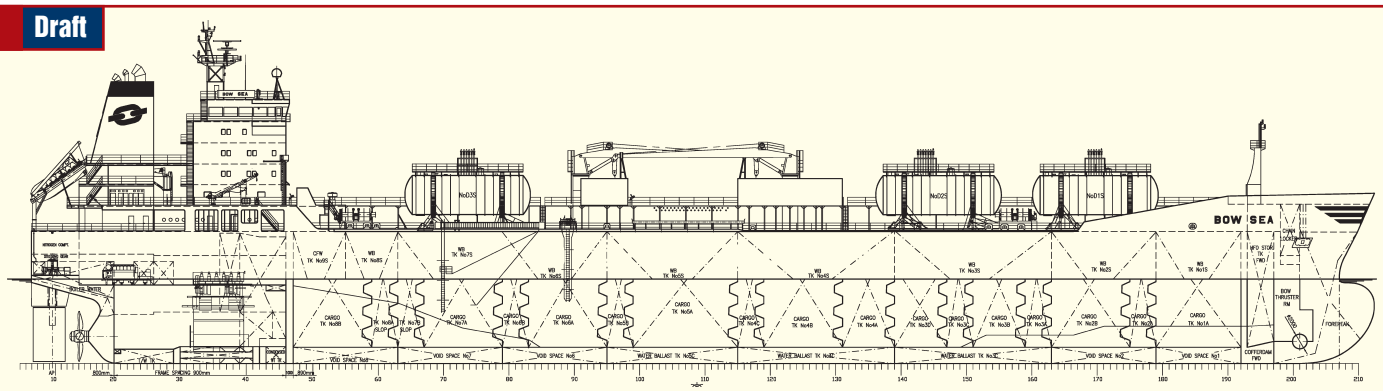
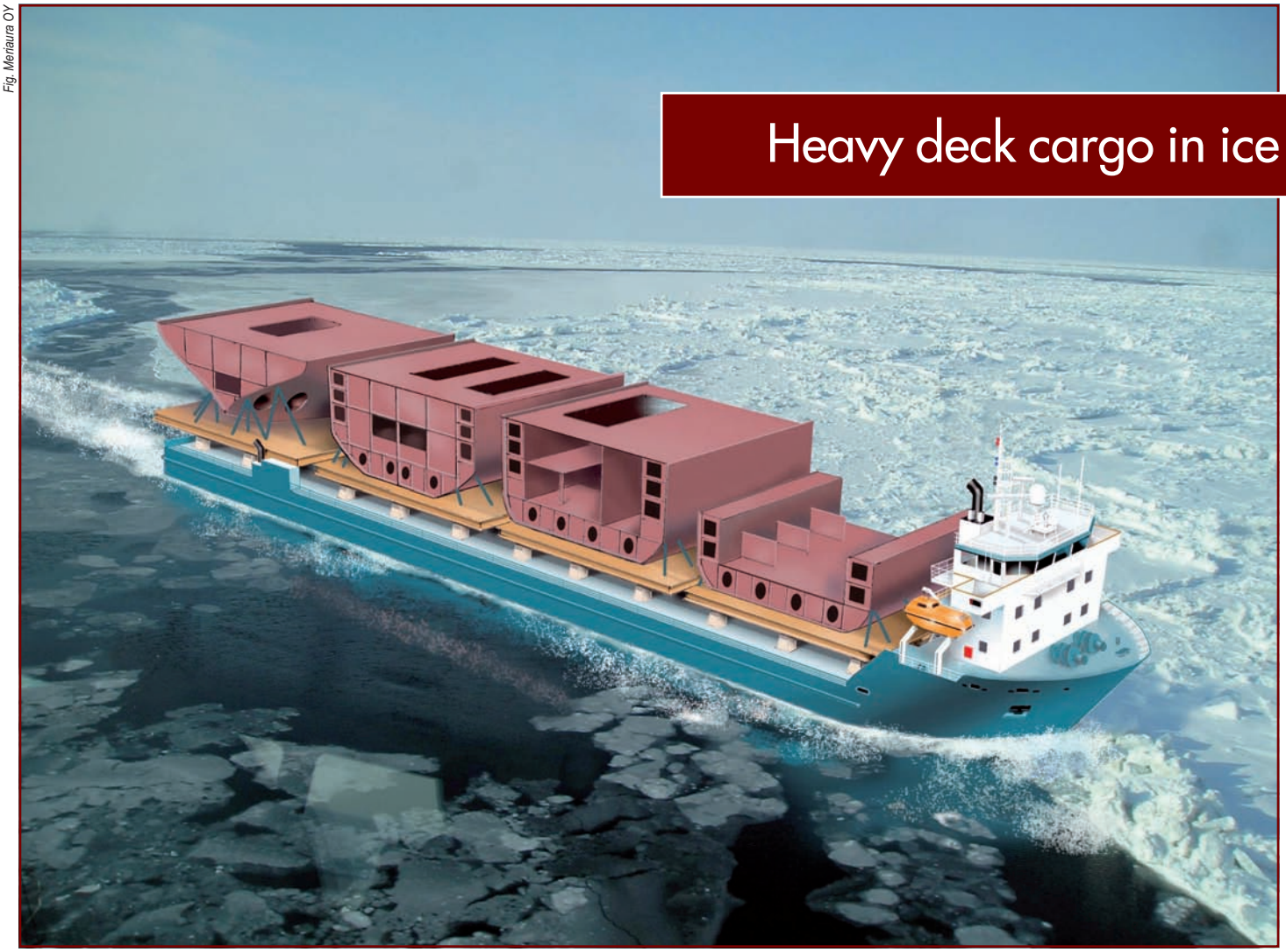


Fig. Meriaura OY



# Heavy deck cargo in ice

***Illustration of multipurpose deck cargo vessel, to be built at Remontowa S.A.***

The Finnish chartering and operations company Meriaura Oy will add a new type of multipurpose deck cargo vessels to its fleet. Ordered from a Polish shipyard, Remontowa S.A., the vessels are designed especially for heavy project cargoes on deck, and will be built to comply with the Finnish-Swedish ice class I A requirements.

Remontowa will help Meriaura Oy Ltd to achieve its objective to become one of the leading transporters of heavy project cargoes around the Baltic Sea. Modern year-round tonnage for project cargo transports at the Baltic Sea and especially within the icy Finnish coast has never existed. With the development of this concept, the possibilities of transporting different kinds of specialised project cargoes around the Baltic Sea will be considerably increased.

The concept development has been made in co-operation with Aker Yards and with a network of Finnish maritime designers and suppliers. Among others Länsiviivain Oy - primarily responsible for the machinery drawings, Foreship Oy (hull lines), Wärtsilä Diesel, Rolls-Royce Aquamaster and Bureau Veritas have been closely involved. The owners hava managed to obtain R&D support from TEKES (the Finnish Funding Agency for Technology and Innovation) for the project. The concept was turned into practical, detailed design by Remontowa's in-house ship design office.

In April 2006 Remontowa S.A. signed the contract with Finnish Owners: OY Gaiamare AB and Meriaura OY, for the construction and delivery of two specialized cargo vessels (including one in option), with delivery of the vessels scheduled for 2007. The first vessel, for which the first steel cutting already took place in August, will be delivered in summer 2007 for Oy Gaiamare Ab, a part of the Meriaura Group. The order holds a possibility of several additional vessels. The investment budget is about EUR 14 million per vessel.

The vessel is designed to carry heavy cargoes on deck and its main cargo will be to transport steel ship blocks for Aker Yards. Aker Yards and Meriaura Oy have signed a long-term transportation contract for transportation of the ship blocks. Each of the vessels is however a truly flexible, multipurpose cargo carrier intended for the carriage of ships' steel sections and blocks, heavy equipment, project cargo modules, containers or rocks, stones, logs and timber as deck cargo. The concept offers also a version for oil recovery operations. It is being considered that, in the longer term, the new class could also carry oil recovery equipment on behalf of the Finnish Maritime Administration.

In the design of the vessel concept special attention is paid to the overall safety and efficiency of the cargo transportation, the seakeeping performance and ice-going

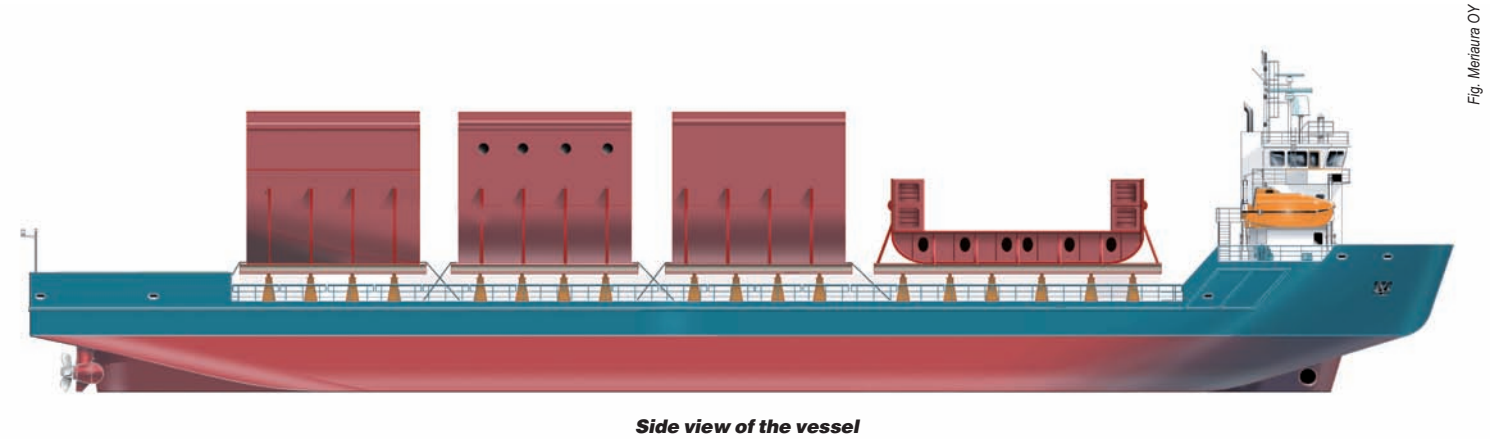


Fig. Meriaura OY

***Side view of the vessel***

capabilities of the vessel. Transportation of ship blocks with this new type of vessel will considerably reduce the schedule risks due to weather and ice conditions. The capacity and flexibility of the new vessel concept will be much higher than with conventional barge transportations, and at the same time the transportation will be more economical. Added flexibility is associated with the fact, that the ship is capable not just of transporting finished blocks but also of carrying raw materials, such as steel plates and profiles, to yards. The vessel concept includes several innovative and patented solutions.

The vessel is a mono-hulled open deck carrier with forecastle, accommodation block and wheelhouse located fore. The diesel-driven main propulsion machinery is located in aft, while the electric power generation plant and auxiliary machinery - in the fore part. The operating speed is about 13 knots.

Electricity can also be generated by power-take-off arrangement at main engines. The vessel is to be equipped with Integrated alarm, monitoring and control system (IMACS).

The propulsion machinery comprises two diesel engines, each coupled to an azimuth propulsion unit with a controllable pitch propeller. Azimuthing thrusters are driven via the „Z" shaftlines with Cardan shafts and a flexible couplings.

The newbuild has a barge-like hullform, except for the bow, which has a conventional icebreaking form. A centre fore skeg structure accommodates a bow thruster in the area of icebreaker-like recessed stem.

The open cargo deck sized app. 80 × 18 m is flush and left as open as possible. Special attention is put on effective water ballast system and proper ballast capacity for the easy offloading and unloading of special cargo units over the stern ramp and over the sides.

The deck of the vessel is strengthened for heavy cargoes. It is designed to carry uniform load of minimum 8 t/m$^2$ and shall be fitted with container sockets suitable for securing 80 units of TEUs.

The seafastening and securing of the ship blocks onto the deck will be carried out with specially designed equipment. A number of specially designed, movable „keel

## General Arrangement

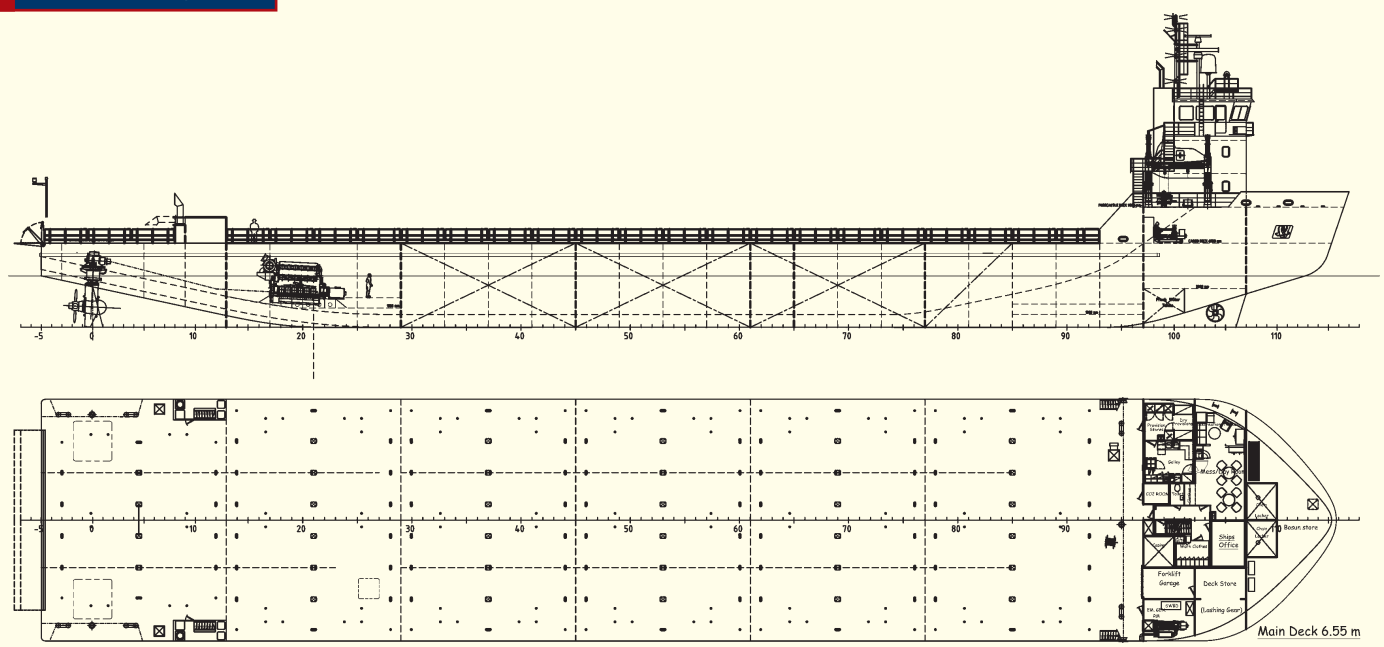



Fig. Meriaura OY

blocks / side elements" of steel shall be delivered with the ship. They can be fixed on cargo deck to the container fixing points at various locations along the cargo area and are part of ship's outfitting. This is quicker than traditional heavy-lift seaborne transport method of welding blocks to the deck as on barges. The hull blocks carried on the new ship will be fixed into the container sockets wherever possible, reducing the welding required to a minimum. The system is the subject of a patent application.

As Aker Yards has a number of quays at locations around the Baltic at which ship blocks are currently loaded onto the barges, the new design will be capable of being ballasted down to the same level as the quays, to be able to continue to use these same loading locations.

The ship is designed for all year round operation in the Baltic / North Sea region, with a specific ice-going class notation.

■

## Main particulars

| | |
|---|---|
| Owners: | OY Gaiamare AB / Meriaura OY |
| Chartered by: | Aker Yards |
| Delivery: | Summer 2007 |
| Builder: | Gdans Shiprepair Yard Remontowa S.A., Poland |
| Classification: | Bureau Veritas, Finnish-Swedish Ice Class I A |
| Length: | 101.30 m |
| Breadth: | 18.80 m |
| Depth: | 6.55 m |
| Draught (max): | 4.60 m |
| Draugth (ballast): | 3.50 m |
| Speed: | 13 kn |
| Deadweight: | 4600 t |
| Cargo deck area: | 1500 $m^2$ |
| Ballast capacity: | 3900 $m^3$ |
| Main engines: | 2 × 2220 kW; Wärtsila Vasa 6R32 LND |
| Propulsion: | 2 × UF255 CP type azimuth propulsion units; Rolls-Royce Aquamaster |
| Bow thruster: | 450 kW |
| Cargo: | Steel sections, other steel structures, 240 TEU (a 13.5 t), timber, logs, heavy cargoes. |
| Classification: | Bureau Veritas, Finnish-Swedish Ice Class IA |


Photo: Adam Woźniczka

# Largest containerships from Szczecin Shipyard so far

***CCNI* Antofagasta, *the seventeen box ship of the B 170 – type built at Szczecin New Shipyard was delivered to the owner in August 2006.***

With delivery of *APL Venezuela* (ex *Carolina*) the year 2001 saw a launch of a new series of container ships - at 3100 TEU capacity, the largest to be built at Szczecin Shipyard so far. Today, after 16 deliveries, they still hold this record. The B178 container ships, judging from the yard's track record and current orderbook, seem to be a very successful design, with many further newbuilding contracts in yard's orders portfolio. At present, there are still 7 more B178-I units on order left, and 11 units from a slightly smaller version B178-III. At the end of April 2006, another B178-I ship was delivered – *CCNI Arica*.

Most of these ships have been ordered by renowned German owner Peter Dohle Schiffsbeteiligungs GmbH&Co. KG, Germany.

The B178 type ships are cellular, geared (also available in gearless version) container vessel intended for carriage of: 20 and 40 ft ISO containers in holds and on deck, 45 and 49 ft containers on deck, dangerous cargo containers, reefer containers (self-contained air cooled type) on deck and in hold.

One of the holds is prepared for IMO dangerous cargoes of 1.4s, 2.2, 2.3, 4.1-4.3, 5.1,6.1 (except liquids FP<=61˚C), and 9 classes. Hold No 1 is additionally prepared for IMO class 1.1-1.6 class dangerous cargoes. Holds no 2-5, having have cell guides fitted with stoppers, abt 5,25 m above tank top, facilitate transportation of 40 ft containers above break bulk cargoes.

The shorter version - B178/III, of which already 11 units have been ordered – features deadweight of 37 125 t at length of 205.25 m and 2785 TEU container capacity. ■

## Main characteristics

| | |
|---|---|
| Machinery: | MC AUT |
| Gross tonnage | 35 881 |
| Net tonnage | 14 444 |
| Deadweight | 41 850 t |
| Length o.a. | 220.50 m |
| Length b.p. | 210.20 m |
| Breadth moulded | 32.24 m |
| Depth to main deck | 18.70 m |
| Freeboard draught | 12.15 m |
| Speed (service) at 10,50 draught: | 22.30 kn (87,5% MCR; 15% sea margin) |
| Endurance | 18 000 Nm |
| Complement | 24 + 1 pilot |
| 1 main engine | MAN B&W 7K80 MC-C; 26270 kW, 104 RPM - built by H. Cegielski - Poznan, Poland |
| 1 fixed pitch propeller | 5 blades |
| Classification: | GL Hull: ✠ 100 A5 Containership, IW, NAV-0, SOLAS II-2 Reg.19, RSD |

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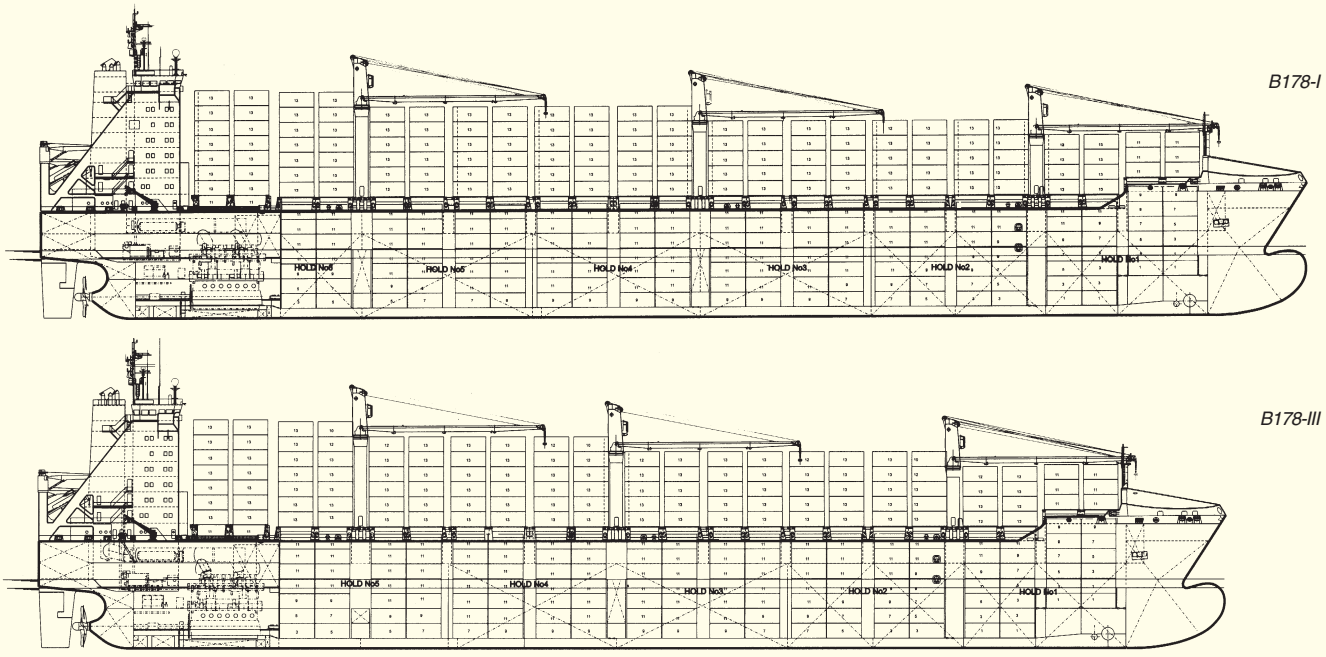

# „Standard ships"
## and the most successful

In post war history of shipbuilding, not taking into consideration so called "standard ships", such as Freedom or Neo-Liberty types, there were very few designs built to multiple orders. One of the longest ship series, and one of the most successful, most popular designs is Szczecin Shipyard's B170.

B170 are so popular, that they have become a standard and a synonym for their range of size, with brokers referring to B170 type while quoting freight rates for any ship of similar size, so B170 have become an industry standard and point of reference.

There have been 47 units built of this design over the recent decade in several mutations slightly differing according to specific requirements of each owners in size or being geared or gearless. The first unit in highly successful B170 series was Elisabeth

Rickmers, delivered in 1995. The last of them, Robert Rickmers, of B170-III, as 15th unit in this version was delivered in 2003.

However Russian owner Fesco and Italian one - Costa Container Lines are so pleased with Szczecin designs, that they have decided to come back for more. Further 5 units are on order from those owners for delivery during 2007 and 2008.

Cellular, geared container vessel intended for carriage of: 20 and 40 ft ISO standard containers in holds and on deck, 45 and 48 ft containers on deck and cellular type Eurocontainers in holds except of side stacks, dangerous cargo containers in holds No 1 . 4, reefer containers on deck, break bulk cargoes in holds No 2 . 4.

### Main particulars

| | |
|---|---|
| Gross tonnage | 16 500 |
| Net tonnage | 8675 |
| Deadweight | 23 000 t |
| Length o.a. | 184.10 m |
| Length b.p. | 171.94 m |
| Breadth moulded | 25.30 m |
| Depth to main deck | 13.50 m |
| Freeboard draught | 9.90 m |
| Container capacity: | holds 634 TEU,<br>on deck 1096 TEU (IMO visibility)<br>Total 1730 TEU<br>200 reefer plugs on deck<br>14 t TEU capacity: 1107 units |
| Speed (service)<br>at 9.85 m draught: | 19.70 kn (90% MCR, 15% sea margin) |
| Endurance | 15 000 Nm |
| Complement | 24 + 1 pilot |
| Propulsion | 1 main engine SULZER 6RTA62U 13,320 kW<br>at 113 r.p.m.- build by HCP Poznań, Poland,<br>1 fixed pitch propeller 5 blades |
| Classification: | GL Hull ✠ 100 A5 Containership IW,<br>NAV-0, SOLAS II-2 Reg.19, Machinery ✠ MC AUT |

Single screw motor ship fitted with one fixed pitch propeller, driven by slow-speed engine. Four cargo holds, engine room and accommodation aft, transom, asymmetric stern, bulbous bow, one transverse bow thruster.

Holds No 1-3 prepared for IMO dangerous cargoes of 1.4s, 2.1-2.3, 3, 4.1-4.3, 5.1, 6.1, 8 and 9 classes. Hold No 4 prepared for IMO dangerous cargoes of 1.4s, 2.1-2.3, 4.1-4.3, 5.1, 6.1 (except liquids FP<=61˚C), 8 (except liquids FP<=61˚C) and 9 classes.

Hold No 1 additionally prepared for IMO dangerous cargoes 1.1-1.6 classes.

Holds No 2 - 4 cell guides fitted with stoppers, abt 5,25 m above tank top, for transportation of 40 ft containers above break bulk cargoes.

■

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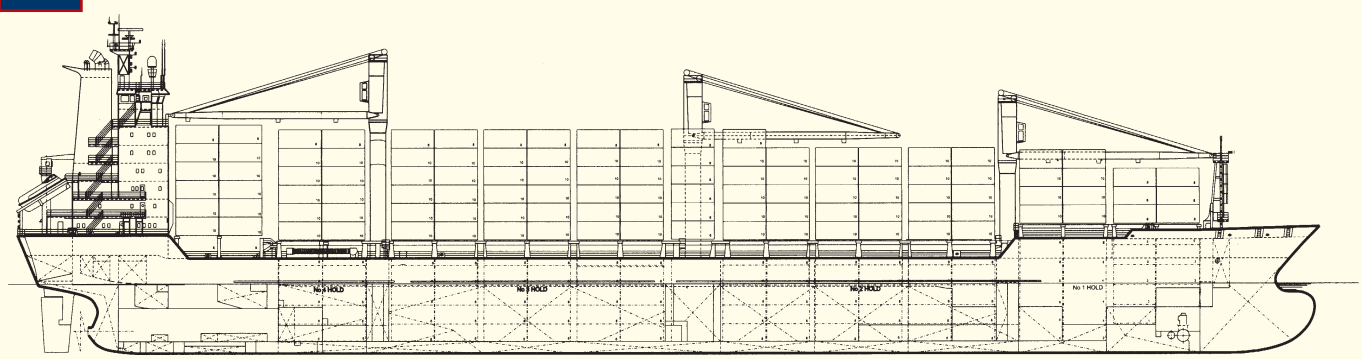


Photo: Gdynia Shipyard

**MSC Florida *was the third and last box ship of the 8234 - type built at Gdynia Shipyard.***

# The 8234 type container ships pretty big and really fast

*Norasia Valparaiso* (ex *Catherine Rickmers*), delivered in 2002, opened a series of the largest container carriers built in Polish yards to date. The 8234 type vessels are fast (over 22 knots service speed) panamax box ships with container capacity of 4444 TEU. The initial units in the series have been ordered by German owner Rickmers. The second unit was named *Norasia Enterprise,* and the third and last ship in a series was delivered late 2005 as *MSC Florida* to German owner for Mediterannean Shipping Company charter.

■


Photo: Gdynia Shipyard

***Norasia Enterprise was the second box ship of the 8234 type built at Gdynia Shipyard.***

## Main particulars

| | |
|---|---|
| Length o.a. | 286.10 m |
| Length b.p. | 271.20 m |
| Breadth mld | 32.20 m |
| Depth to main deck | 21.80 m |
| Design draught | 12.00 m |
| Scantling draught | 13.20 m |
| Gross | 51 350 |
| Deadweight at: | |
| - design draught | 49 100 t |
| - scantling draught | 58 300 t |
| Container capacity: | Total 4444 TEU |
| | On deck 2393 TEU |
| | In holds 2051 TEU |
| | 14t/TEU homo 3000 TEU |
| | Reefer plugs 450 |
| Main engine: | single Wartsila NSD 8 RTA 96 C |
| Main engine power: | 43 920 kW |
| Service speed: | 24.6 knots at: draught T = 12.00 m, 90.00% MCR, |
| | 15% sea margin |
| cruising range: | 18 000 Nm |
| Classification: | GL, ✠ 100 A 5 E Container Ship., SOLAS II-2, Reg.54, +MC E AUT |


# *Kota Perkasa* box carrier 2681 TEU

The 8200 type container vessel represents a series built since 2001 either by Gdańsk Shipyard or by Gdynia Shipyard. Geared, versatile box ships feature an accommodation block with bridge located at a quarter stern.

## Main particulars

| | |
|---|---|
| Length o.a. | 207.95 m |
| Length b.p. | 194.40 m |
| Breadth mld | 32.24 m |
| Depth to main deck | 16.80 m |
| Design draught | 10.00 m |
| Scantling draught | 11.50 m |
| Gross tonnage | 30 024 |
| Deadweight at: | |
| - design draught | 27 747 t |
| - scantling draught | 35 924 t |
| Container capacity: | |
| Total | 2681 TEU |
| On deck | 1681 TEU |
| In holds | 1000 TEU |
| 14t/TEU homo | 2060 TEU |
| Reefer plugs | 400 |
| Main engine | H. Cegielski / MAN B&W 7S70 MC-C |
| M.E. Power (MCR) | 21 735 kW |
| Cruising range | 17 000 Nm |
| Classification: | |
| GL ✠ 100A 5E “Conatiner Ship”, SOLAS II-2, Reg.54, ✠ MC E AUT | |

## Draft

***CONTAINER SHIP OF 2700 TEU***

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# The largest „floating garages"


Photo: Piotr B. Stareńczak

***PC/TC* Talia *caming back from sea trials.***

Gdynia Shipyard JSC is worldwide known for its successful designs of vehicle carriers delivered since 80-ties to several seaborne car transport market leaders. Universal car carriers from Gdynia have been awarded with many international accolades. More than once they have been presented in prestigious „Significant Ships of the Year" booklet published by the Royal Institution of Naval Architects.

Among the newest laurels received was the „Golden Anchor" award handed to representatives of Gdynia Shipyard at Baltexpo 2004 International Maritime Exhibition in Gdańsk. It was awarded to the best product „universal car carrier of the 8168 series".

The 14th unit of the 8168 type, *Talia*, was delivered in July 2006, with 12 units still left in the orderbook at that time. *Talia* was the first Gdynia Shipyard built vehicle carrier for Ray Car Carriers that has been chartered by Wallenius Wilhelmsen.

Pure Car / Truck Carriers (PC/TCs) of the 8168 series, are ro-ro carriers suitable for the carriage of the wide variety of vehicles, rolling stock and general cargo stowed by terminal vehicles. The cargoes most often comprise of personal cars, pick-ups, vans and trucks and buses or coaches. Other rolling cargoes and special vehicles are also carried onboard PC/TCs, such as civil engineering and earthmoving vehicles, road and terminal trailers or multi-axle heavy-lift platforms.

The 8168 series falls into category of the largest PCTCs ever built worldwide.

For Gdynia Shipyard a big success may be regarded the fact, that its original ro-ro cargo flow patters between decks has also been accepted by two biggest Japanese operators - NYK and „K" Line, previously used to their own, different internal ramps arrangement of car carriers.

Since 1999 to mid 2005 Stocznia Gdynia SA has built as many as 14 ships of the 8168 type and two units of the 8213 sub-type. The Gdynia built car carriers delivered so far are deployed in long-term charters by global, leading vehicle carriers operators, namely:

- HUAL (50/50 joint venture of Norwegian owners Leif Höegh & Co Shipping AS and Ugland International Holdings plc,
- EUKOR Car Carriers (consortium established by Norwegian shipping company Wilhelmsen Lines, Swedish owners Wallenius Lines and Hyundai Motor and Kia Motors car manufacturers of South Korea in December 2002, which immediately became the largest operator of the car carriers fleet)
- NYK (Japan)
- „K" Line (Japan).

Further, remaining units contracted so far from the 8168 series, will enhance the fleets of the above mentioned operators, as well as another market leader – Wallenius Wilhelmsen, which so far has been employing the ships built in the Far East only.

The vehicle carriers built at Gdynia Shipyard are renowned on the global shipping market, not only because of their innovative, superior design features and solutions, but also owing to high quality of yard's craftsmanship. Only the weakness of Polish system of promotion of export production (through proper financing solutions) and the limited (significant, but already fully utilized now) production capacity do not allow the yard to accept more orders for these advanced ships.

Besides the economy of the scale in series production of the profitable 8213 and 8168 designs, additional advantage provided by this shipyard.s product line is the opportunity to promote best Polish marine equipment manufacturers in the global markets.

Polish components in Gdynia Shipyard's vehicle carriers include main and auxiliary engines manufactured by H. Cegielski - Poznań, anchor windlasses and mooring winches from Towimor, pumps supplied by GZUT, furniture and interior panels from Famos and Meblomor, to name just a few from a wider spectrum.

The Gdynia Shipyard built car carriers incorporate many innovative design solutions, such as fuel saving and course stability improving hydrodynamic hull appendages or wake improvement fins fitted behind the propeller beneath the stern.

The propulsion system features modern engine room and electric power plant arrangement, fulfilling the latest requirements of the classification society (Det Norske Veritas) and those of most demanding owners.

Both main engine and auxiliary engines are manufactured in accordance with newest regulations regarding the emissions control. Integrated automation system facilitates the control and monitoring of all essential propulsion processes from the computers in engine control room and deck office.

Top standards have been also applied to design and outfitting of communication and navigation systems. Obviously the ship is also equipped with „black box" (Voyage Data Recorder) and Automatic Identification System.

Cargo access and handling system includes two external doors / ramps – quarter type stern ramp (150 t SWL) and side ramp serving alternatively two decks (22 t SWL) and a system of fixed and moveable hydraulically controlled internal ramps, as well as four hoistable decks allowing for flexibility in setting heights of some of fixed decks.

The hoistable decks are hoisted up and lowered by means of two self-propelled (truck based) deck lifts.

The accommodation spaces are available for up to 36 persons, including 30 crew members and officers in single cabins with own, separate sanitary blocks and apartments for senior officers. The integrated office spaces are provided, too.

Ships from the 8168 series have 13 internal decks. The accommodation block is one level structure placed 33 m over the ship's bottom plate. Additional level of superstructure houses the bridge.

The huge dimensions of the 8168 type car carriers from Gdynia Shipyard may exemplified by their deck area, reaching 54 500 m$^2$ (almost 5.5 hectares) on each ship, and total carrying capacity of 6 600 cars of standard Japanese dimension type RT-43 (equivalent of Nissan - Bluebird).

■

## Principal characteristics

| | |
|---|---|
| Length over all | 199.98 m |
| Length between perpendiculars | 188.00 m |
| Breadth | 32.26 m |
| Depth to main deck (main / ramp deck - no 5) | 14.00 m |
| Depth to deck no 12 | 32.64 m |
| Draught (maximum) | 10.00 m |
| Deadweight (at max. draft) | 21 000 t |
| Cargo decks area (including hoistable decks) | 54 500 (17 000) m$^2$ |
| Main engine (HCP manufactured) | 7 RTA 62 U or 7 S 60 MC-C |
| Main propulsion output | 15 540 or 15 820 kW |
| Service Speer | 20.2 kn |
| Generating sets (HCP) | 3 × 7 L 28/32 H |
| Ship.s electrical power plant power | 4200 kW |
| Classification: Det Norske Veritas | DNV ✠ 1A1, „CAR CARRIER" (RO/RO, MCDK), |

## Propulsion / Machinery

Weight of steel used for the construction of one 8168 type PC/TC - over 16 000 t
Fuel tanks capacity - over 3 300 m$^3$
Daily main engine fuel consumption - abut 60 t
Balast tanks capacity - 7 000 m$^3$
Total length of pipelines serving engine room
(with diameters ranging from 10 to 600 mm) - 8,6 km
Total number of valves - 680
Total length of cabling onboard a single PC/TC - over 300 km
Automation control points and sensors - abort 2000 units
Fire detection sensors in cargo spaces - over 1000
Installed power of cargo spacer ventilation fans - over 1000 kW
Paints and protective coatings consumed for one vehicle carrier - over 290 000 liters


Photo: Piotr B. Starenczak

# Modern ro-ro feeder

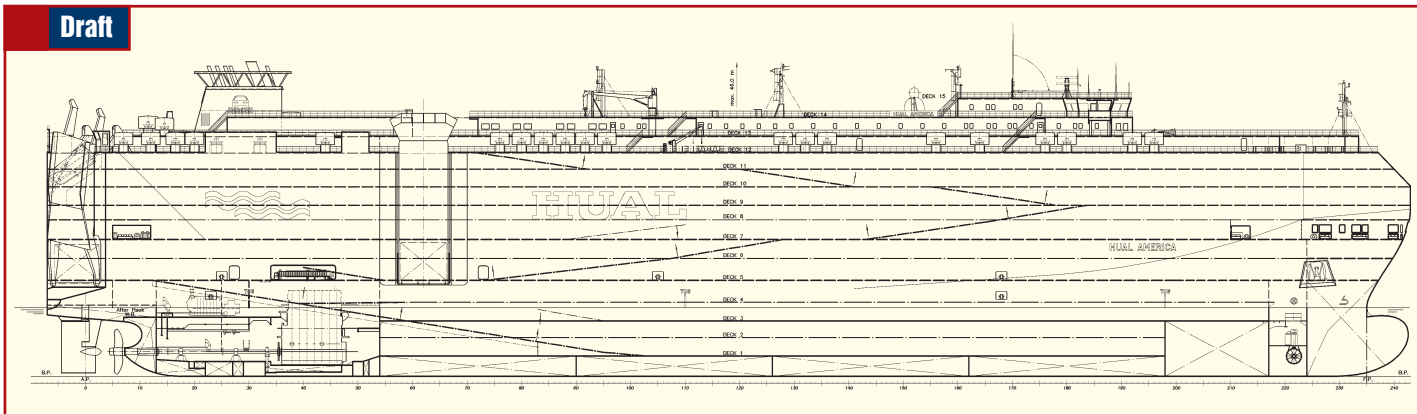
***Aerial snapshot of* Elbe Highway *during sea trials.***

Gdynia Shipyard SA, known in recent years for its long series of very large car carriers, has also entered the market for smaller, feeder and local, short sea trades vehicle carriers.

The 8245 type ship, named *Elbe Highway*, launched on July 16, 2005, was delivered to Ray Car Carriers Ltd. of the Isle of Man for charter in KESS („K" Line) service last year, when also the second unit was handed over to owners, namely the *Thames Highway*. There are 4 similar ships more on order and under construction now.

The 148 m long, 25 m wide 8245 type Pure Car / Truck Carrier features a dead-

**Draft**



weight of 7 750 t, allowing the ship to carry 2130 car units of Japanese RT-43 standard (equivalent to Nissan-Bluebird car) on its 8 internal decks with a total area of about 17 400 m$^2$. These will include two hoistable decks of abt. 4.100 m$^2$. The arrangement of moveable decks allows for flexible allocation of cargo space for full or mixed shipments of cars, bigger vehicles such as trucks and other cargoes including heavy units.

Loading and discharge is facilitated by two stern ramps with 70 t SWL each. One of them is axial, another - a quarter ramp.

The living quarters with navigation bridge is located 25 m above the ship's bottom. It offers accommodations for 25 persons, including the crew of 23. Life saving equipment includes a 25 persons lifeboat, life / rescue boat for 25 persons and 4 life rafts for 16 persons each and one 6 persons raft.

The main propulsion is effected by MAN B&W 7S46 MC-C type engine, manufactured by H. Cegielski - Poznan, developing 9170 kW at 129 r.p.m. This is expected to allow the ship to achieve service speed of 18,9 knots. Ship.s electric power plant comprises three diesel alternators with total mechanical output of 3360 kW at 900 r.p.m. providing 440 V, 60 Hz electric current.

For enhanced maneuverability a rotary vane type steering gear was used, and thrusters installed fore and aft, with power rating of 660 and 365 kW respectively.

■

## Main particulars

| | |
|---|---|
| Length O.A. abt. | 145.60 m |
| Length B.P. | 133.20 m |
| Breadth moulded | 25.00 m |
| Depth to deck no. 4 (entr.) | 11.80 m |
| Depth to deck no. 9 | 25.20 m |
| Design draught | 7.00 m |
| Scantling draught | 7.70 m |
| Design draught deadweight | 5800 t |
| Scantling draught deadweight | 7750 t |
| Car capacity: (RT 43) abt. | 2130 pcs |
| Main engine: | MAN B&W / Cegielski 7S46MC-C |
| Main engine power (mcr) | 9170 kW |
| Fuel oil | 1400 m$^3$ |
| Diesel oil | 150 m$^3$ |
| Lub oil | 70 m$^3$ |
| Potable water | 150 m$^3$ |
| Ballast water | 3500 m$^3$ |
| Endurance | 13 000 Nm |
| Class: | DNV ✠ 1A1 "car carrier" (ro/ro, mcdk), Ice 1a, e0, naut-oc, pwdk |




Photo: Cezary Skórka

# Innovative con-ro vessel from Szczecin New Shipyard

***Aerial photo of* Timca *performing her maiden voyage from Szczecin to Antwerp.***

From this year through the first quarter of 2009 a series of eight multipurpose con-ro newbuildings will enter trade with Baltic and European ro-ro operator Transfennica of Finland in its Trafexpress service. Contract for the initial four units was signed in October 2003 and extended later to total of 8 units. The per unit price tag seems to be somewhat above USD 50 million according to unofficial sources. The vessels, ordered by Transfennica's main shareholder, Spliethoff of Amsterdam, are a start of the sixth generation of ro-ro vessels in Finnish operator's fleet.

These new, 6th generation ships, are incorporating features enabling fast and reliable service even in heavy ice conditions. The Transfennica operated vessels of the sixth generation will be more versatile and have a carrying capacity of about the double in containers and trailers in comparison to Baltic shipowner's present successful fifth generation of 20+ knot fleet. New vessels of B201 type from Szczecin New Shipyard feature speed of 22 knots.

The latest addition to Spliethoff's Befrachtingskantoor B.V. / Transfennica fleet is *Timca*, the first unit from the B201-II series, delivered by Szczecin New Shipyard on July 11. She departed from Szczecin based shipyard for maiden voyage to Antwerp on July 12. Then the ship sailed to Finland. The namegiving ceremony of m.s. *Timca* took place after a few trips, on 23 August 2006 at Katajanokka in Helsinki. The ship's godmother, Mrs. Ann Wahlroos-Jaakkola, broke the traditional bottle of champagne and named the ship. On June 10, *Kraftca*, the second unit from B201-II series, was successfully launched.

The vessels are unique combination of a ro-ro vessel with four cargo hold levels for vehicles and rolling cargoes transportation and of a containership with hatchless container cellular hold in fore part and (re)movable cellguides on trailer deck aft of the superstructure. The whole weather deck can be used for alternative transportation of vehicles and / or containers.

## General arrangement

*Timca* is a twin screw motor vessel, with wide transom stern with duck tail, and single centre line skeg underwater configuration aft. The ship features bulbous bow and covered fore mooring deck. Engine room and accommodation for crew of 28 and 12 drivers has been arranged three quarters aft.

Cargo spaces, access and other cargo systems

The B201 type con-ro is well suited for transportation of:

- 20, 30, 40 and 45 ft containers,
- trailers and semitrailers,
- Mafi trailers and/or cassettes
- commercial vehicles and cars,
- sto-ro cargo (paper reels, etc.) on closed decks,
- dangerous goods of 1-8 classes,
- INF 2 cargo.

Hold ventilation with reversible explosion-proof fans ensures 25 air changes per hour for ro-ro spaces. These spaces are also fitted with air drying systems and air mixing system.

The Transfennica newbuildings from Szczecin will have faster turnaround times in port, thanks to all cargo decks, including a new fourth deck, being immediately accessible once the stern ramp is lowered.

Access to cargo spaces is arranged with:

- one watertight, winch operated stern ramp, 25 m wide, SWL 340 t, ensuring simultaneous loading of ro-ro cargo to all levels,
- three fixed internal ramps leading to tank top, trailer deck and weather deck.

The vessel is prepared for ro-ro cargo handling by two-level shore ramp.

Anti-heeling system with two side ballast tanks compensates ship's heel during cargo loading/unloading operation. The system reacts at heeling angle of 0.3 deg. It also enables determination of actual GM value. Separate trimming reversible pump is also provided.

## Deck machinery

The vessel is fitted with two high efficiency rudders, improving propulsion efficiency.

Containers are carried in movable (40, 45 ft) cell guides in fore hold, on Weather Deck, secured with loose lashing material, and on Trailer Deck aft in (re)movable cell guides (30, 40 and 45 ft).

To improve manoeuvrability, two 850 kW, controllable pitch propeller bow thrusters are provided, with anti-suction tunnel improving the effectiveness of the thrusters.

## Propulsion and power generation

Main propulsion is effected by two single acting, four stroke, supercharged diesel engines of Wartsila 12V46C type, each developing 12600 kW at 500 rpm, driving two controllable pitch propellers via reduction gear. Each gear box is provided with power take off to drive shaft generator.

Electric power plant provides 440V, 60 HZ electric current and consists of:

- 2 main generators 1600 kVA each, driven by 1360 kW/900 rpm diesel generators,
- 1 550 kVA emergency generator, driven by 465/1200 rpm diesel generator,
- 2 shaft generators, 2125 kVA each.

Thermal oil heating system comprises one oil fired heater, 1500 kW output and two exhaust gas economizers, 1000 kW each.

Engine Room is prepared for future installation of Selective Catalytic Reduction (SCR) system.

## Safety

Life saving equipment includes two lifeboats for 40 persons each, two 20 persons rafts and one 6 persons raft situated fore.

Fire fighting systems include fixed $CO_2$ system for holds and engine room and fixed, seawater sprinkling system for holds. Fire detecting system is provided in engine room and each hold.

Retractable fin stabilizers, with an area of 9 $m^2$ each, ensure roll reduction in heavy sea conditions, thus improving ship and cargo safety.

## Marine electronics and automation

The ship features up-to-date marine electronics. This includes radio communication equipment according to GMDSS, for A3 area of operation, satcom C (two pcs), weather fax, Navtex as well as Inmarsat F and AIS. Two radars (X- and S-band, with ARPA), GPSand DGPS receivers, electronic chart system, Doppler speed log, echosounder, gyrocompas, autopilot, and magnetic compass system as well as VDR are provided for safe navigation.

The vessel is fitted with monitoring and control systems for periodicaly unmanned engine room and one man bridge operation, as per Lloyd's Register UMS and respectively NAV1 class notations. Industrial television system covers all ro-ro decks as well as stern ramp. ▶


*M/v Bute was the first ferry delivered by the Remontowa Group to the Scottisch owner. She has been placed on the prestigious list of "Significant Small Ships of 2005" of RINA.*

Photo: Remontowa SA

# Car and passenger ferries *Argyle* and *Bute*

Ferry operator Caledonian MacBrayne Limited celebrated the launch of another new addition to its fleet - m.v. *Argyle*, the sister ship of m.v. *Bute*.

The introduction of *Argyle*, alongside *Bute*, which was delivered by the Remontowa Group in the summer of 2005, concludes an important stage in renewing the fleet on the Upper Clyde for MacBrayne. *Argyle* is the second vessel for the Wemyss Bay / Rothesay route and will further improve the standards and quality of service that owner provides to customers on this route.

Following the completion and fitting out of *Argyle*, it is expected that trials will be run by the end of November and the vessel to be delivered to the Company in the middle of December.

*Bute* entered service on the Wemyss Bay to Rothesay service on July 11, 2005. Since entering service she has carried approximately 500,000 passengers and 100,000 cars and has been welcomed by the communities that she serves. And what is more, she has been placed on the prestigious list of "Significant small ships of 2005", published by the Royal Institution of Naval Architects.

CalMac believes that *Argyle* will be just as successful and concludes a very important stage in the Company's fleet renewal programme for the service and support we provide to the communities on the Upper Clyde.

Funding of up to 8.75 million pounds for a new ship for CalMac's Rothesay / Wemyss Bay service - the Company's busiest route - was announced late in 2003, by the Scottish Executive. The ordering of new vessel was conducted in accordance with EU public procurement procedures. Value for money, reliability and delivery were the key factors in awarding the contract to the Remontowa yard. There were 4 bids for the project in the end and the Remontowa option clearly offered the best value for the investment. The new vessel will be identical to *Bute*. She will carry 60 cars and 450 passengers on CalMac's busiest route, and will enter service early in 2007.

Car and passenger ferry *Bute*, B 338/1 type and *Argyle* (B338/2 and 1333/2) have been built at Northern Shipyard on order from Gdańsk Shiprepair Yard Remontowa S.A.

The shipyard has built a ferry-boat which is small, but modern with superstructure made of aluminium and innovative engine room and shafting made of glass fibre. The whole design of the vessel was prepared in Shiprepair Yard's Design Office, employing the most up to date technology including three-dimensional modeling techniques for steel and outfit production.

*Bute* and *Argyle* may each carry up to 60 cars, which compares with the 38 carried by Streakers currently operating on the Clyde. The ship will carry 450 passengers with seating provided internally for 250. She sails at 14 knots and has stabilisers.

The ship's design takes account of the needs of disabled customers and DPTAC guidelines. There is a lift with priority for the disabled and customers with impaired mobility. Priority car parking is also identified on the car deck.

The vessel is equipped to carry 44 tonne vehicles and dangerous goods. She has roll-on/roll-off facilities with additional side loading ramp. Vessel engine controls, alarms and monitoring are carried from engineer's control station on the bridge.

## *Bute* and *Argyle* characteristics

| | |
|---|---|
| Contracted | by Gdansk Shiprepair Yard Remontowa SA |
| Built at | Northern Shipyard |
| Length B.P. | 67.75 m |
| Length O.A. | 72.01 m |
| Breadth moulded | 15.30 m |
| Depth moulded to main deck | 5.00 m |
| Draught | 3.00 m |
| Frame spacing | 600 mm |
| Car capacity | 66 PBE |
| Passenger capacity | 450 |
| Crew | 10 |
| Deadweight | 400 t |
| Gross tonnage | 2612 |
| Contract speed | 14 knots |

### Propulsion

two main engines Type MAK 6M20 rated at 1140 kW and 8M20 rated at 1520 kW both operating at 1000 rpm and driving Schottel Rudder Propellers type STP 1010 and STP 121 forward and aft respectivey.

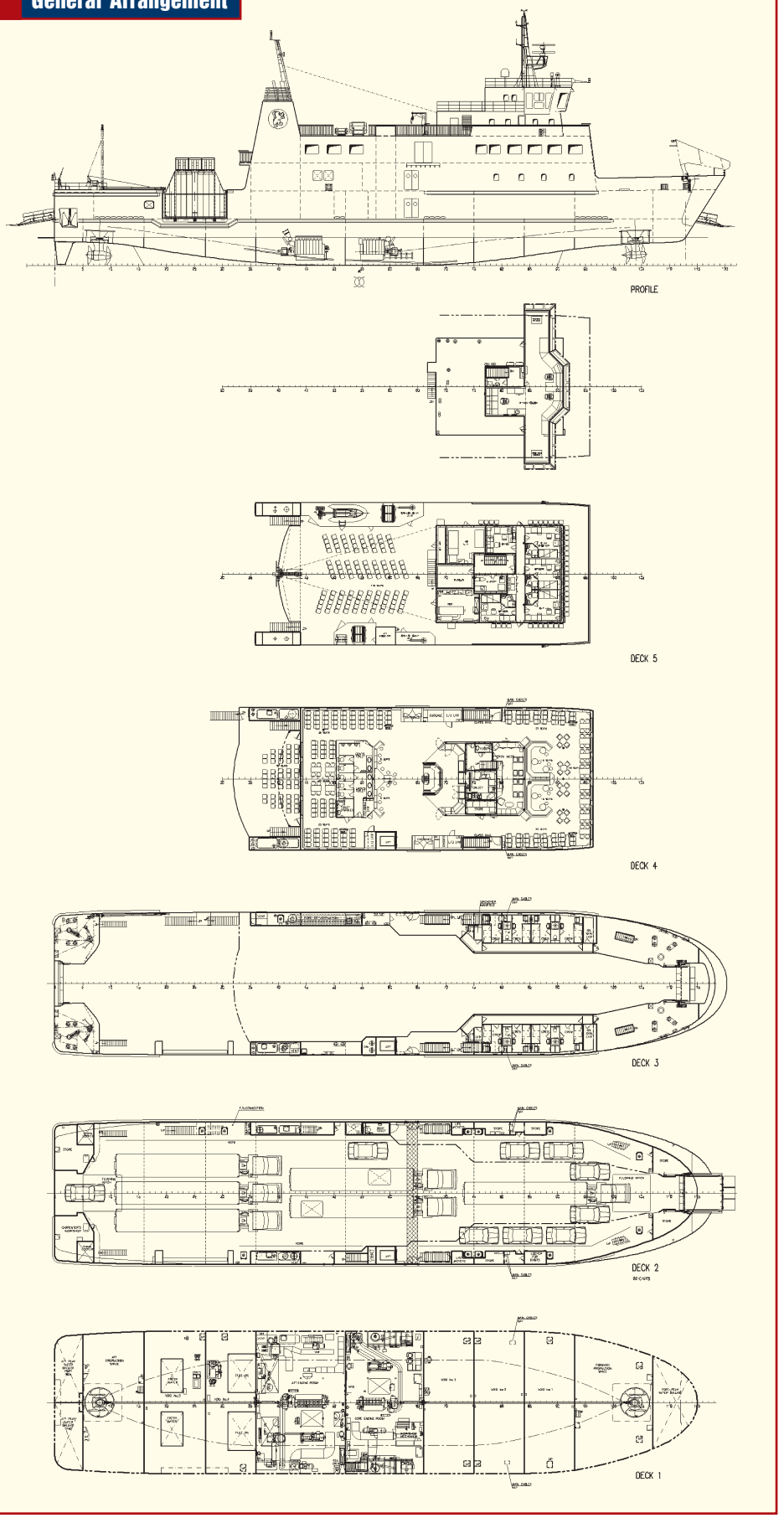
### Power

Two Auxiliary Generators Type Scania / Stamford each rated at 200 kW/250 kVA. Emergency Generator Type Sisu / Stamford rated at 120 kW/150 kVA.

### Class

Lloyds Class ✠ 100 A1, ✠ LMC Ro-Ro Passenger and Vehicle Ferry with EP and IWS Notations MCA Class IV&V.

## General Arrangement



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# Quality and Reliability


Photo: Jakub Bogucki

# Big double-ended ferry

**Bastø III** ***from the Remontowa Group has also been placed on the list of "Significant Ships of 2005" published by RINA.***

In February 2005 *Bastø III* ferry left for Norway. The ship had been built at Northern Shipyard, part of the REMONTOWA Group, and delivered to Bastø Fosen A/S, its Norwegian owner. It has been the largest ferry built in the shipyards of REMONTOWA Group so far, the largest of all ferries operating in the Norwegian fiords region, and the largest of the three ferries owned by Bastø Fosen A/S.

With the crew consisting of 15 persons, it carries 550 passengers and 212 cars on the Horten-Moss route in the Oslofjord. The double-ended ferry measures 116.2 m in length, is 19.5 m wide, and features depth of 9.95 m.

Gdańsk Shiprepair Yard Remontowa SA entered into a contract with a Norwegian owner, Bastø Fosen A/S, for building *Bastø III*, the SKS 212 drive through ferry, on July 10, 2003. This event followed competition, in which Remontowa defeated 20 yards, including the Norwegian ones: Fosen, Fiskerstrand and Brattvaag.

The draft design was created by the Norwegian Kverndokk & Eldøy AS (KEAS).

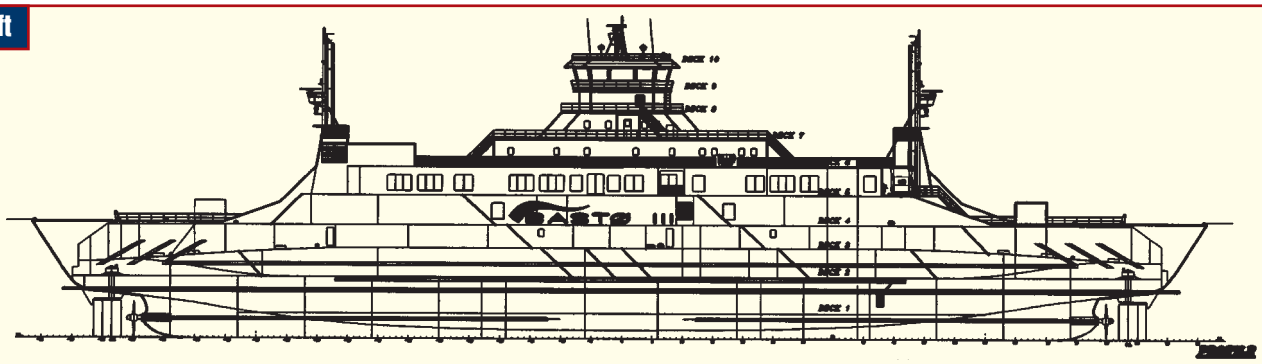
The ship was classified by Det Norske Veritas.

On 16 July 2004, the ship was launched sideways at Northern Shipyard without the upper part of its superstructure. Among other parts of the superstructure to be added at a later stage, also a wheelhouse was installed only after launching the ship.

The ship was built and equipped so as to observe requirements set by the following regulations:

- NMD Regulations of 15.09.92 no. 695 for building of passenger ship,
- International convention for stability of life at sea, SOLAS 974/1987/1981/1983,
- International Convention on Load Line, 1966
- International Tonnage Rules, 1969
- International Convention for the Prevention of Pollution from Ships, 1973, Protocol of 1978 and amendment of 1984,

**Draft**



- Convention on the International Regulations for Preventing Collisions at Sea, 1972 and amendment of 1983,
- Radio Regulations of the International Telecommunication Union 1974 and latest edition of 1982,
- Radio equipment according to GMDSSA3

Due to its big size as for a ship of this class, as well as to its relatively long passage, the ship was equipped with conventional propellers. *Bastø III* has two controllable pitch propellers and two rudder blades. The propulsion shafting system is installed virtually across all the ship right to the reduction gears and main drive engines amidships. The high lift blade rudders and steering gear were provided by Rolls-Royce, while the propulsion system (shaftlines, propellers, gears and main engines) by Wärtsilä.

When working on the design of the ship, noise and vibration analyses were carried out to trace and eliminate the focal areas of this kind of undesirable phenomena.

There are two through-decks. The top deck is designed to carry heavy vehicles, whilst the main deck is a place for passenger cars. Providing an excellent field of vision, the superstructure together with the wheelhouse is to be found amidships.

The ship has also found her place on the prestigious list of "Significant ships of 2005" published by the Royal Institution of Naval Architects.

## Main particulars

| | |
|---|---|
| Length O.A. | 116.20 m |
| Length B.P. | 99.60 m |
| Car deck length | 106.60 m |
| Breadth, moulded | 19.00 m |
| Breadth, extreme | 19.50 m |
| Depth, mld, to main deck | 5.60 m |
| Depth, mld, to top deck | 8.45 m |
| Draught, extreme | 5.00 m |
| Frame spacing | 0.60 m |
| Tank capacity | |
| - fuel about | 350 $m^3$ |
| - fresh water about | 120 $m^3$ |
| Service speed | 17 knots |
| Gross tonnage | about 6000 GT |
| Passengers | 550 |
| Freight-carrying capacity | 212 |

Class notation:
DnV ✠ 1A1 , R4 ,
Ice C , Car Ferry A , Clean , E0

Propeller, rudder and shaft Ice 1 B- Class (plus additional BIS notation, informing of the hull marking as a means of preparing it for the inspection of its underwater part with no drydocking but on the water)

Photo: Jakub Bogucki


# *Folkestad* - double-ended ferry SKS-86

**Folkestadt *was delivered to the owner in January 2006.***

Double-ended passenger car ferry SKS-86/NB 1543 contracted by Gdansk Shiprepair Yard Remontowa SA, Poland, was delivered in January this year. The ship was built at Northern Shipyard. It has been ordered by Norwegian owner Nor-Ferjer Volda A/S, a joint venture - Stavangerske and HSD set up to serve a new route between Volda and Folkstad in Norway from 1 January 2006.

The 87-metre ferry is operated at Norway fjord. It can carry 300 passengers and 85 cars or 8 trucks. The ship was built with symmetric hull and deckhouse of welded steel construction, a continuous car deck (main deck), diesel engines powered with azimuth thrusters on each end, side house on each side with upper deck for carrying of the cars, fixed ramps for loading/unloading on each end of the side house.

On side, on each end, as continuation of side house decks, it is arranged a mooring deck. The Main deck - free deck - is dimensioned for trailers with load of 15 tons on double wheeled axles.

Side house decks and ramps are to be dimensioned for holding of 1,5 ton axle load on single wheels. The ferry will be propelled by six main engines 404 kW each, driving two azimuth thruster through belts connected to shaftlines.

There are fore and aft engine rooms with three main engines in each engine room. It is designed to achieve 13 knots at 3,3 m draught. Electric power will be generated by two gensets 295 KWe (in each engine room). The vessel will be equipped with foam extinguishing system for cargo hold and water mist system for engine rooms.

There are two passengers lounges on the main deck. PS lounge with 48 seats and SB lounge with kiosk and 70 seats. Passengers can communicate between sides via perpendicular passage midships. Modern Koppernes MES system with three stations on the main deck is provided for evacuation passengers.

ECR is arranged on a tank top level.

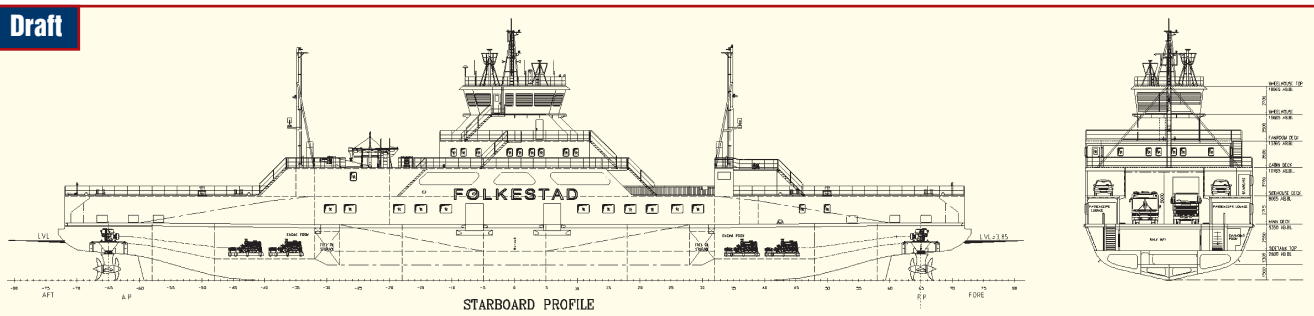
Norwegian and Polish yards competed for the contract. The deal is a further boost for Remontowa Group, best known worldwide for its repair and conversion operations but increasingly focused on ship construction. The hull, machinery and electrical installation will are installed under special survey and in accordance with the Rules and Regulation of Det Norske Veritas for notation: ✠ DNV * 1A1-R4-Class Ferry B-PWDK-E0-RP

The vessel will be registered in Norway and will comply with the requirements of the Norwegian Maritime Directorate (NMD), The Flag Authority NMD TRADING AREA 2.

## Main particulars

| | |
|---|---|
| Contracted by | Gdansk Shiprepair Yard REMONTOWA SA |
| Builder | Northern Shipyard |
| Home port: | Ålesund |
| Length over all | app. 87,60 m |
| Length on car deck | app. 84,40 m |
| Length between PP | 78,00 m |
| Breadth moulded | 16,00 m |
| Breadth over all | 16,40 m |
| Draught DnV, CWL | app. 4,50 m |
| Draught LWL | app. 3,85 m |
| Frame spacing | 0,60 m |

## Draft



Pict.: Remontowa SA

# Good-looking shuttle

**Visualisation of a pax ferry of the 1064 – type.**

Norwegian owner Moltzaus Tankrederi AS has ordered in Gdansk two modern passenger ships, in their architecture resembling more luxury mega-yachts rather than shuttle ferries.

NB 264/1064/1 and NB 264/1064/2 Sundbusserne are 400 passenger shuttle ferries to be operated for the transportation of passengers between Ellsinore in Denmark and Helsinborg in Sweden with speed of 14 knots. Both are to be delivered in the first half of 2007.

The 400 pax shuttle ferry will be built with modern shape of all welded steel hull and deckhouse of welded steel / aluminium structure.

The 1064 type vessel is equipped with a diesel electric propulsion system consisting of 3 generator sets, 711 kVA each, and two azimuth thrusters aft with two electric motors with power of 600 kW each.

There is one boiler for heating. The machinery also include emergency genset 220 kW, bow thruster 300 kW, one pair of heeling tanks and one pair of fin stabilizers.

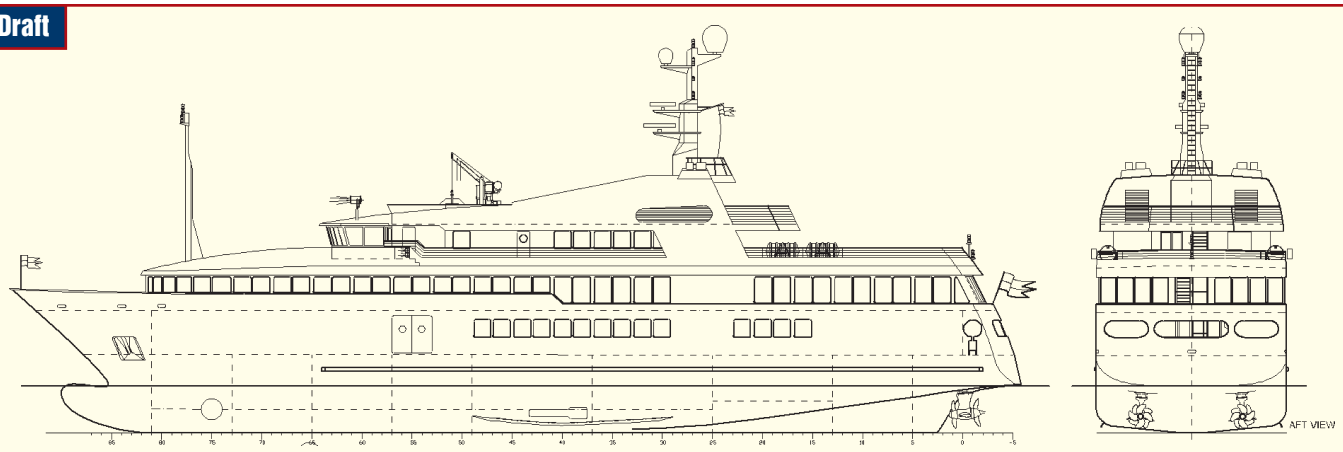
The ferry will be able to carry maximum 400 passengers. Space for passengers will be arranged as follows: shopping area and game arcade on shopping deck (main deck), café area with 56 seats, pub area, with 96 seats and two restaurants with 54, seats each on cafeteria deck (upper deck), sun deck - with 70 seats.

An area for the crew is arranged separately on the bridge deck. For communication between four decks there will be fast passenger lift. Special attention is to be taken for low level of noise and vibration.

## Main particulars

| | |
|---|---|
| Length O.A. | approx. 60.40 m |
| Length B.P. | approx. 51.20 m |
| Breadth | 11.40 m |
| Depth (to main deck) | 4.70 m |
| Design Draught | 2.80 m |
| Passenger Capacity | 400 |
| Speed | 14 knots |
| Propulsion | 1200 kW, diesel-electric |
| Class | LRS, ✠ 100A1, Ice 1C, ✠ LMC, UMS |

## Draft



# Second Trinity House vessel launched in Gdańsk


Pict.: Grzegorz Nawrocki

***THV* Galatea *on painting of Polish artist.***

The second new ship for Trinity House was launched on 26 July by Mrs Jane de Halpert, wife of the Executive Chairman, Jeremy de Halpert at Gdansk Shiprepair Yard Remontowa SA.

Trinity House's new Multi-Function Tender (MFT), *Galatea*, marks the final stage of a GBP 38 million investment on three new vessels by the UK and Irish General Lighthouse Authorities (GLA's).

Speaking after the ceremony Jeremy de Halpert, said, „These ships are being built to the high technical standards that we all demand in order for us to complete our exacting operations around the coastline of Britain. They will also allow us to continue to give a top class service with excellent ships at a highly competitive price thus ensuring the ship owners continue to get the best value for money."

The *Galatea* is scheduled for delivery early in 2007 and will replace the 1987 built THV *Mermaid*.

The Northern Lighthouse Board, the General Lighthouse Authority for Scotland and the Isle of Man, has also ordered an 84 -m MFT which is anticipated to be delivered in the autumn of 2006. On Friday 3 February 2006, Her Royal Highness The Princess Royal performed the ceremony of naming and launching of the Northern Lighthouse Board's Multi Function Tender *Pharos* at the Northern Shipyard, member of the Remontowa S.A. Group, Gdansk, Poland.

The contract, signed on March 11, 2004 in London, with the Remontowa S.A. called for the construction and delivery of two 82 m Multi-Function Tenders (MFTs), one for Northern Lighthouse Board (*Pharos*) and one for Trinity House (to be named *Galatea*), as well as one 35 m Rapid Intervention Vessel (RIV) for Trinity House (*Alert,* described elsewhere in this issue of „Ships built in Poland"). The ships are being built to the high technical standards demanded by the General Lighthouse Authorities for the exacting operations they conduct around our coast.

On completion, later this year, *Pharos* will make the 1200 mile passage from Gdansk to the Board's base at Oban, on the West Coast of Scotland, where she will be based.

The first of the two Remontowa built MFT's is destined for work mainly in Scottish and Manx waters (the area covered by the Board) servicing over 200 automatic lighthouses, buoys, beacons and will act as a working platform for aids to navigation project work as well as carrying out commercial work under contract. On occasion she will travel south to assist the other General Lighthouse Authorities, Trinity House and Commissioners of Irish Lights, in their waters through long-standing co-operation and exchange arrangements.

Both vessels are designed and built for service as Multi Function Tenders operated throughout all seasons round the coasts of

## Main dimensions

| | |
|---|---|
| Length overall | 84,20 m |
| Breadth moulded | 16,50 m |
| Depth moulded to main deck | 7,20 m |
| Design draft | 4,25 m |

## Accommodation

7 officer's cabins
23 petty officer's / crew cabins

## Working deck layout

ATNs: capacity for carrying of 16 navigation buoys and associated ground tackle
Container carriage: 10 × 20 feet standard containers (6 of them can be refrigerated)
Towing: 1 × 36 tons towing winch
Builder: Remontowa S.A., Gdansk, Poland
Flag: United Kingdom
Port of registry: Leith (*Pharos*) and London (*Galatea*)

## Registered owner

Northern Lighthouse Board (*Pharos*)
Trinity House Lighthouse Service (*Galatea*)

## Propulsion

2 azimuthing units of 1500 kW each (Rolls Royce make)
2 bow thruster units of 750 kW each
Service speed 12,50 kn

## Diesel generating plant

3 diesel engines of abt 1270 kW each (Wärtsilä)
2 diesel engines of abt 685 kW each (Wärtsilä)
1 emergency diesel alternator of 200 kW for *Pharos* and 380 kW for *Galatea*
1 harbour diesel alternator of 300 kW for *Pharos*

## Dynamic positioning system

Kongsberg Simrad SDP22 system to Lloyd's DP (AA) standard
Integrated navigation bridge

## Hydrographic survey installation

Kongsberg Simrad installation EA 400 single beam & EM 3002 D multi-beam units plus Kongsberg's Neptune Triton and Poseidon software for processing the data
Nautikaris tide recorder system
Simrad SL 35 sonar
Nautikaris Side Scan
Simrad hydrographic system Seapath 2000

## Classification

Lloyd's Register ✠ 100A1, ✠ LMC, ✠ UMS, CAC, DP(AA), MCM, NAV, IBS, LA, EP - Buoy and Light Tender

Photo: Remontowa SA

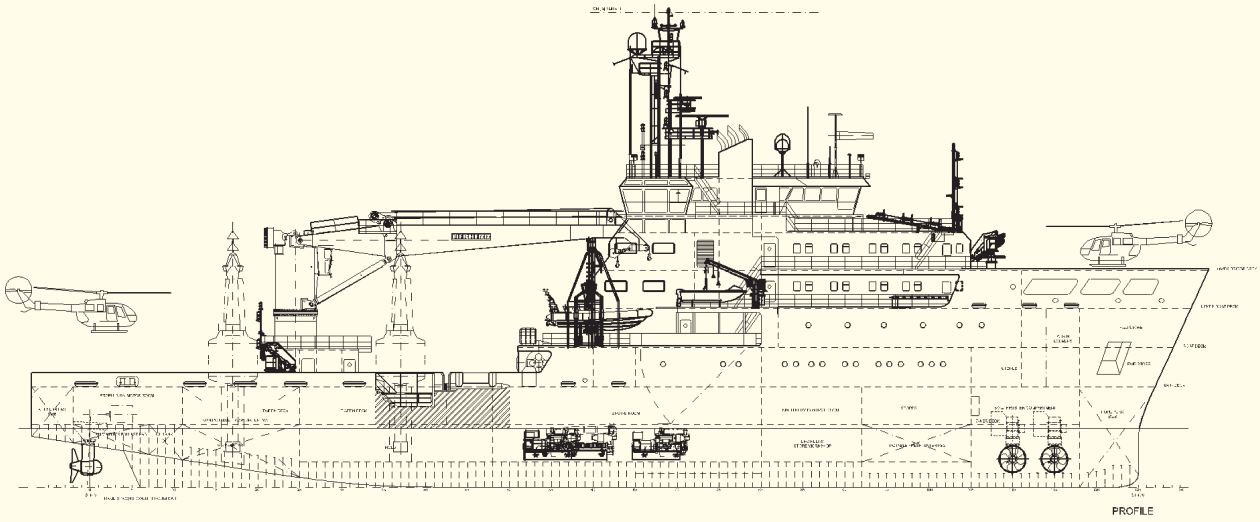

**NLV Pharos *was side-launched at Northern Shipyard in February 2006.***

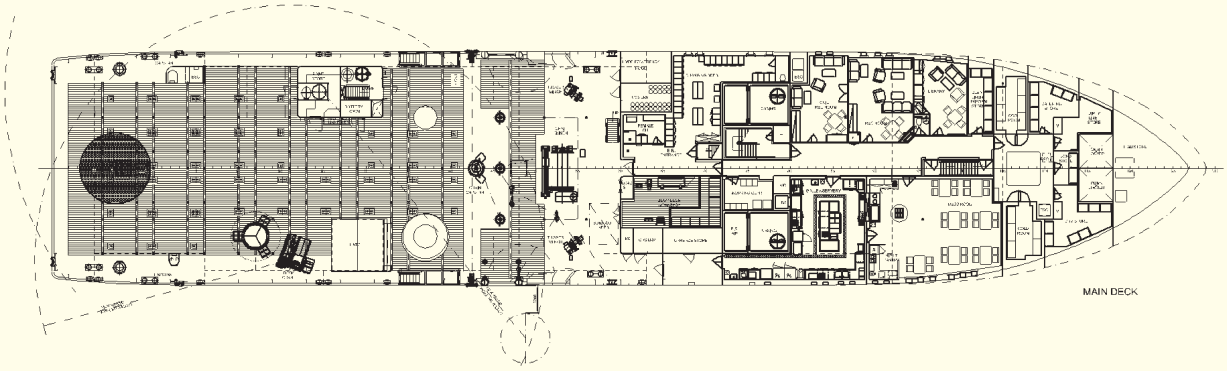
Scotland and the Isle of Man by the Northern Lighthouse Board and the coasts of England, Wales and the Channel Islands by Trinity House Lighthouse Service. The vessels will be interchangeable and be capable of supporting each other's roles.

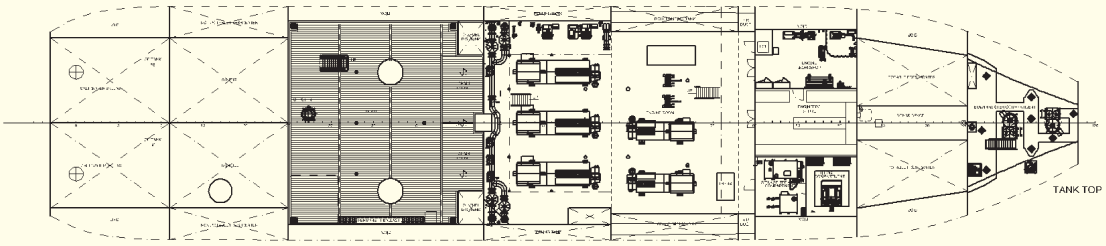
The primary functions of both vessels is to lay, retrieve and maintain navigation buoys together with their associated moorings. In addition, the vessels will be designed with the capability to carry out other offshore roles, including towing, hydrographic surveys, attendance at wrecks and wreck finding, lighthouse support, transportation of personnel, plant and equipment to offshore stations and support of safe workboat and helicopter operations.

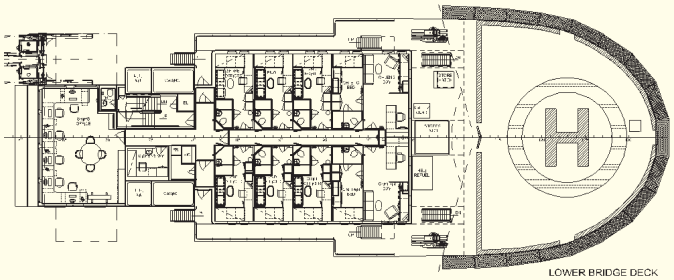
Vessels will be capable of slow speed close quarters manoeuverability for accurate station keeping up to Beaufort Force 6. Vessels will be fitted with double redundancy Dynamic Positioning system (DP2) maintaining station ±2m for the deployment and recovery of navigation buoys and other roles. ▶

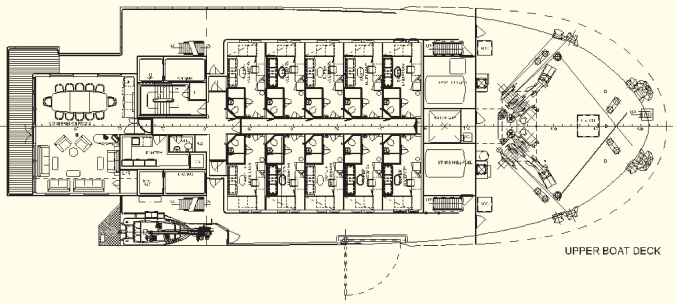
## General Arrangement



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# NORTHERN SHIPYARD

**NORTHERN SHIPYARD specializes in building of technologically advanced vessels, contracted by Remontowa S.A., such as: LNG/LPG carriers, car-passenger ferries, container vessels, AHTS and other offshore vessels, multi-function buoy tenders, hydrographic ships, research and patrol vessels for American, British, Dutch, Finnish, German, Norwegian and Polish shipowners.**


**The NORTHERN SHIPYARD has certified quality systems and concessions:**

- Quality Management System complies with the requirements of ISO 9001:2000 certified by Polish Register of Shipping,
- Internal Control System for Dual Use Goods certified by Polish Centre for Testing and Certification (PCBC)
- Concession for building of naval vessels and military equipment granted by Ministry of Interior and Administration
- NATO Commercial and Government Entity Code

**The NORTHERN SHIPYARD builds vessels under supervising classification societies such as: American Bureau of Shipping, Bureau Veritas, Det Norske Veritas, Lloyd's Register of Shipping, Polish Register of Shipping with their approvals.**


**www.northship.com.pl**

REMONTOWA GROUP

# Norwegian Coast Guard to receive five modern patrol boats from Gryfia SA


Pict.: Skipteknisk AS

***Illustration of the ST 610 – type patrol vessel.***

The Szczecin based shiprepair yard Gryfia SA holds a contract for five ST-610 type OPVs for the Norwegian Coast Guard - Kystvakt. Option covers five more patrol vessels. The contract had been signed on February 12, 2005 between Gryfia and Remøy Management AS (3 units in firm contract with 3 options) and Remøy Shipping AS (2 ships + 2 options) reportedly against stiff competition from Norwegian and Spanish yards. The contract which was signed between Gryfia and Remøy Shipping, is worth USD 54 million. Construction work of the first ship is to be completed in Autumn 2006, while the other 4 ships will be ready in 2007. The ships will be named KV *Nornen* (christened early July, nearing completion as we went to press), KV *Farm*, KV *Heimdal*, KV *Njord* and KV *Tor*.


Photo: Adam Woźniczka

***Snapshot of* Nornen *at Gryfia Shiprepair Yard.***

The ships have been designed by Skipsteknisk AS, Alesund, Norway in close co-operation with the owners.

The vessels will be armed in Norway and shall operate up to 330 days per year along the entire coast line, featuring DP Dynamic Positioning system, a helicopter deck and a work deck aft.

As the tasks of the vessels will include rescue and salvage operations, the patrol ships have bow equipped and reinforced for pushing.

The propulsion, allowing for the service speed of 16 knots, will be diesel-electric with two azimuth thrusters in the stern plus a bow thruster. The crew will be 20 persons.

Each of the DNV classed vessels will have two Fast Rescue Crafts reaching speeds up to 40 knots.

## Principal particulars

| | |
|---|---|
| Length O.A. | 47.20 m |
| Length B.P. | 42.00 m |
| Breadth | 10.30 m |
| Depth | 5.00 m |
| Design draught | 3.25 m |
| Displacement | 700 t |
| Main engine output | 2000 kW |
| Thrusters | 1 - bow |
| Bollard pull | 20 T |
| Speed | 16 kn |
| Working deck area | 100 $m^2$ |
| Deck load up to | 2,5 $t/m^2$ |
| Oil tanks volume | 107 $m^3$ |
| Fresh water | 95 $m^3$ |
| Locker | 90 $m^3$ |
| Accommodation | 20 persons |
| Classification Det Norske Veritas | DnV ✠ 1A1 ICE-1C, E0, Dynpos AUTS OilRec |

# Fishery protection vessel for Scottish Fisheries Protection Agency

After winning the open EU tender, November 2005 saw Remontowa S.A. signing a contract with Scottish Ministry represented by Scottish Fisheries Protection Agency for design, construction and delivery of fishery protection vessel (FPV). Delivery is scheduled for 4Q 2007.

Special, technically complex and highly sophisticated ships of various types and functions, have become a new specialty on offer from the shipyards acting under the REMONTOWA Group banner. The vessels are being built basing on the own projects conceived by Remontowa's in-house Design Office.

The primary function of the vessel is fishery protection in waters surrounding the mainland and islands of Scotland. In addition, the ship will operate in the North East Atlantic Fisheries Commission waters beyond the 200 mile limits. The areas of operation include open sea, shallow coastal waters and estuaries and sounds with strong tidal streams.

Vessel is a mono-hull design with a hull, superstructure and all appendages constructed of all welded mild steel. The vessel is single screw, with diesel electric propulsion comprising three generators, and two propulsion motors. Marine gas oil will be the fuel used throughout. Vessel is to be built to meet the unmanned machinery space standards with full bridge control.

The vessel is to be arranged with an open clear working deck aft. The arrangement of the working deck and associated deck machinery, have been designed for safe operation utilizing a minimum crew on deck.

The vessel is to operate throughout the patrol area in all seasons and to achieve

## Main particulars

| | |
|---|---|
| Length overall | 84.00 m |
| Length between perpendiculars | 72.00 m |
| Breadth moulded | 13.00 m |
| Depth to main deck | 8.20 m |
| Draught midships | 4.5 m |
| Draught – max | 5.5 m |
| Cruising speed | 12 knots |
| Maximum service speed | 18 knots |
| Crew | 22 persons |
| Deadweight | 430 t |

## Capacities

| | |
|---|---|
| Fuel capacity | 230 t |
| Fresh water | 90 t |
| Lubricating oil | 6 t |
| Hydraulic oil in storage tanks | 2 t |
| Provisions and stores | 20 t |
| Roll damping tank | 77 t |

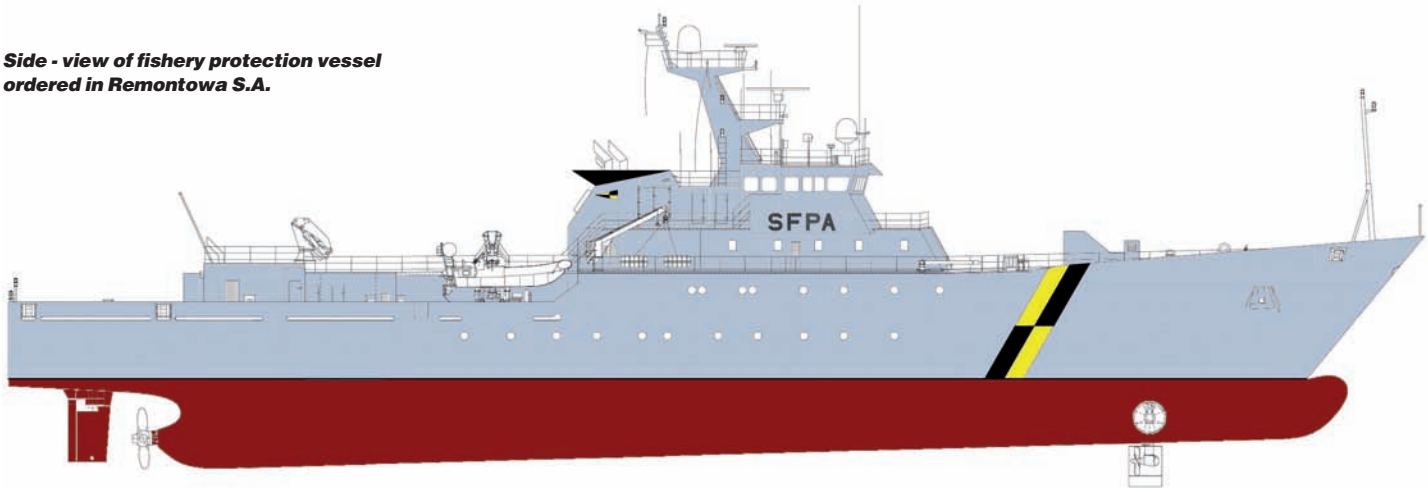
## Machinery

| | |
|---|---|
| Propulsion motors | 2 × Rolls-Royce squirrel cage induction type |
| Power (each) | 2000 kW / 1000 rpm |
| Main gearbox | Wartsila type TCH240, twin input/single output |
| Propeller | Warstila / JC Lips, 3600 mm dia |
| Main generating | 3 × Wartsila type 9GL20 |
| Power | 3 × 1620 kW / 1000 rpm / 660 V / 50 Hz |
| Harbour generating set | 1 × Volvo Penta type TAMD 165A |
| Power | 296 kWe / 1500 rpm / 415 V / 50 Hz |
| Emergency generating set | 1 × Cummins type 6CT8.3D (M) |
| Power | 99 kWe/1500 rpm/415 V/50 Hz |

## Deck machinery

| | |
|---|---|
| Bow thruster | Brunvoll rectractable combi thruster / 500 kW |
| Stern thruster | Brunvoll, 51 kN / 350 kW |
| Rudder | Rolls-Royce Ulstein high lift type; 7,6 $m^2$ |
| Steering gear | Rolls-Royce Tenfjord, rotary vane type, 170 kNm |
| Deck crane | Palfinger PK 48000 MD/2, 8 t × 14 m |
| Capstans | 2 aft, 1 fwd, each of 4 t |
| Windlass | 8.1 t × 10 m/min |
| Boarding / rescue boats | 2 × RIB 7, 5 m / 20-25 knots / 4 crew / Halmatic |
| Rescue davit | 2 × 3, 5 t |
| Roll damping system / tank volume | 75 $m^3$ |

***Side - view of fishery protection vessel ordered in Remontowa S.A.***

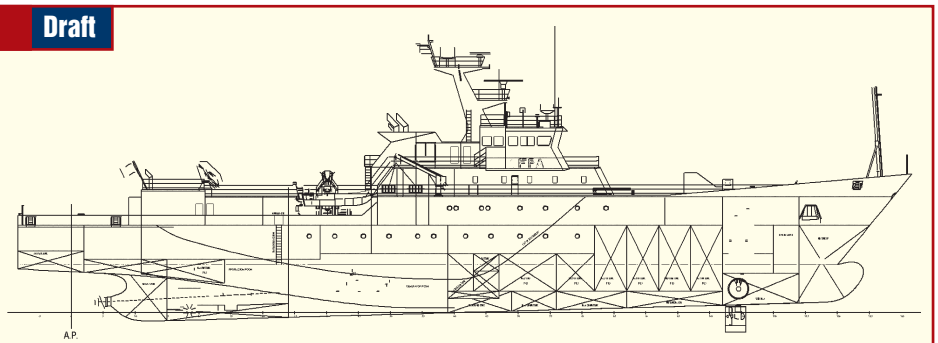



Piot.: Remontowa S.A.

## Navigation and communication

1 Bridge master ARPA S-Band radar, 1 bridge master ARPA X-Band radar, 1 electronic chart system, 1 conning display, 1 Differential Global Positioning System (DGPS), 1 automatic identification system (AIS), 1 echo sounder. 1 Doppler speed log, 1 autopilot, gyrocompass, magnetic compass, 1 wind system; 1 area 3 GMDSS installation with two off SAT C, including handheld radios, 1 broadband VSAT system, 1 fixed iridium system, 1 temper proof fisheries monitoring SAT C, 1 additional fixed VHF set with extension speaker, 1 cellular telephone system, 1 weather fax receiver, 1 Navtex receiver; 1 emergency positioning radio beacon (EPIRB), 2 GMDSS search and rescue radio transponder (SART), 1 satellite television system,
1 common aerial system TV & radio, 1 computer network, sound powered telephone system,
1 cellular telephone system, 1 automatic telephone system/public address system and 1 ship security alert system.

## Draft




Piot.: Remontowa S.A.

## Classification and regulations

The vessel to comply with the requirements of the U.K. Maritime and Coastguard Agency (MCA), the Flag Authority, for a Class VII vessel to allow registration by the Owner in the United Kingdom.
The ship is classed by and is being constructed under survey by Lloyd's Register to obtain the notation:

✠ 100A1, LMC, UMS, CAC, EP, SCM - Fisheries Protection Vessel.

maximum efficiency for boarding boat operations, the deck arrangement, stability and sea-keeping properties have to be optimised and co-ordinated to provide a safe working platform in conditions up to winds of Beaufort force 6 and sea state 5-6.



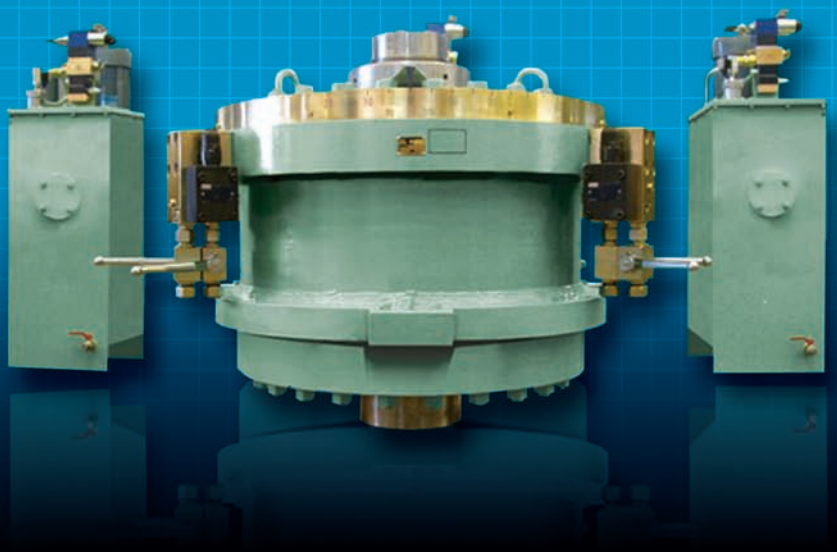



Photo: Piotr B. Stareńczak

# Complex conversion at Naval Shipyard Gdynia

**EDT Protea *during the towout from the floating dock.***

Naval Shipyard Gdynia is occupied both with naval work and commercial shiprepair, newbuildings and partly outfitted hulls, hull sections and blocks and other steel structures manufacturing. The company is also often involved in complex conversions or in completion of ships commenced in other yards and fully outfits them for turn-key delivery.

One of the most complex jobs Naval Shipyard Gdynia has ever accomplished, producing state-of-the-art, very sophisticated and modern ship, was the *EDT Protea* project, nearing completion with final outfitting touches as we went to press mid-September and the ship expected to enter service shortly. It might even be regarded more as a new construction rather than conversion.

The Gdynia based yard was contracted by the Cyprus based shipowners, managers and operators that recently changed its name from EDT *Towage* and *Salvage* to EDT *Offshore*. The Limassol-based company specializes in towage and salvage as well as subsea operations and HDP pipeline installations predominantly in the Mediterranean.

The conversion of the former *Geco Sapphire* to DP3 ROV / survey and light construction vessel has been under way in Poland for some time, and has taken far longer than originally anticipated (one of the earlier anticipated completion date was in 2004). However it is understood the reason behind that was intentional lay-up by the owners, lack of financing or lack of employment for the prospective new conversion. However, after a considerable time of idleness onboard the ship at the yard, it seems the owners eventually worked out employment for the ship and works commenced again a couple of months ago. According to information released by shipbroking company Seascope Offshore, *EDT Protea* is the subject of a two-year charter in the Gulf of Mexico with Phoenix International.

## Main particulars

| | |
|---|---|
| Length over all | 91.20 m |
| Lenghth between perpendiculars | 81.60 m |
| Breadth moulded | 14.80 m |
| Depth to shelter deck | 8.59 m |
| Depth to main deck | 5.89 m |
| Draught | 6.20 m |
| Gross tonnage | 3746 |
| Net tonnage | 1123 |
| Deadweight | 3054 t (TBC) |
| Deck Area | TBC (circa 610 m$^2$) |

Phoenix, for which Gdynia built ROV support and survey vessel will be working, is a market leader in special and emergency underwater tasks ranging from underwater survey and repair or construction works for offshore industry, through fallen / sunk aircraft recovery, including passenger airplanes and military aircraft after accidents, to submarine rescue support for the navies. Phoenix has also been involved in collecting unprecedented video inside *RMS Titanic* resting on the seabed and has space shuttle parts recovery support among its references.

Such complex tasks require special, advanced and well equipped vessel, which has been recently completed by Naval Shipyard Gdynia. The Cypriot vessel *EDT Protea* (ex *Geco Sapphire*) was completely converted into a high specification ROV support, survey dive support and light construction vessel with dynamic positioning system. *Geco Sapphire* was a Norwegian built seismic research vessel, which sunk after an accident, at the quay in Norwegian yard Mjellem & Karlsen during alongside repairs in October 2001. After salvage and recovery it was bought in auction by EDT Towage and Salvage and brought to Gdynia, Poland, for conversion.

A new section of more than 15 m was inserted by Naval Shipyard Gdynia into the

14.8 m wide ship bringing the length of the previously 75.6 m long vessel to more than 90 m. The vessel has a highly raised forecastle, with accommodation and bridge located midships and a low open aft deck with moonpool and A-frame.

The yard is reported to say sub-contracts included changing the conventional drive to a diesel-electric azimuthing propulsion system.

The ship has a new helideck installed fore, along with a ROV hangar with door on forward deck, 50-ton Hydramarine knuckle boom crane with active heave compensation, capable of working at depths of 2,500m and accommodation for 70-90 persons. She has a deck area in the region of 600 square metres. The heli-deck is capable of receiving Bell 214 and Super Puma AS 332L according to 1991 Regulations.

Reception room is located on the same deck as the helipad and the main entrance points while the vessel is in port. There is also a large conference room at the same deck as the on/fff line rooms and the ROV hangar. On- and fff-line survey rooms are large-size and arranged next to the ROV hangar.

## Propulsion / Machinery

| | |
|---|---|
| Diesel Generators | 4 × 2445 kW Rolls Royce Bergen BRG-6 (in 2 separate engine rooms) |
| Propulsion Inverters | 2 × Alstom MV 3000 |
| Total Electrical Power | 8800 kW of 440 V 60 Hz |
| Auxiliary Generators | 2 × 250 kW Iveco |
| Emergency Generator | 1 × 300 kW Cummins KTA19G3 |
| Main Propulsion | 2 × Schottel azimuth thrusters SRP 2020, 2200 kW each |
| Bow Thrusters | 2 × Brunvoll tunnel FU 80 LTC-2000 at 1100 kW each<br>1 × Brunvoll retractable azimuth at 880 kW |
| Maximum speed | 15 knots (estimated) |
| Operation range | World-wide |
| Endurance | 45 days |

## Classification

| | |
|---|---|
| Germanischer Lloyd | GL ✠ 100 A5 E3 Research Vessel DP3<br>✠ MC E1 AUT „Dynpos Autr" (Class III) |

The accommodation is arranged for 89 persons in single en-suite cabins for 9 persons and 40 double en-suite cabins. There are two laundry rooms with ample equipment. Other facilities include hospital, sauna and gymnasium. The vessel is fully air conditioned throughout. For environmentally friendly waste disposal, there is Team Tech supplied incinerator.

## General Arrangement

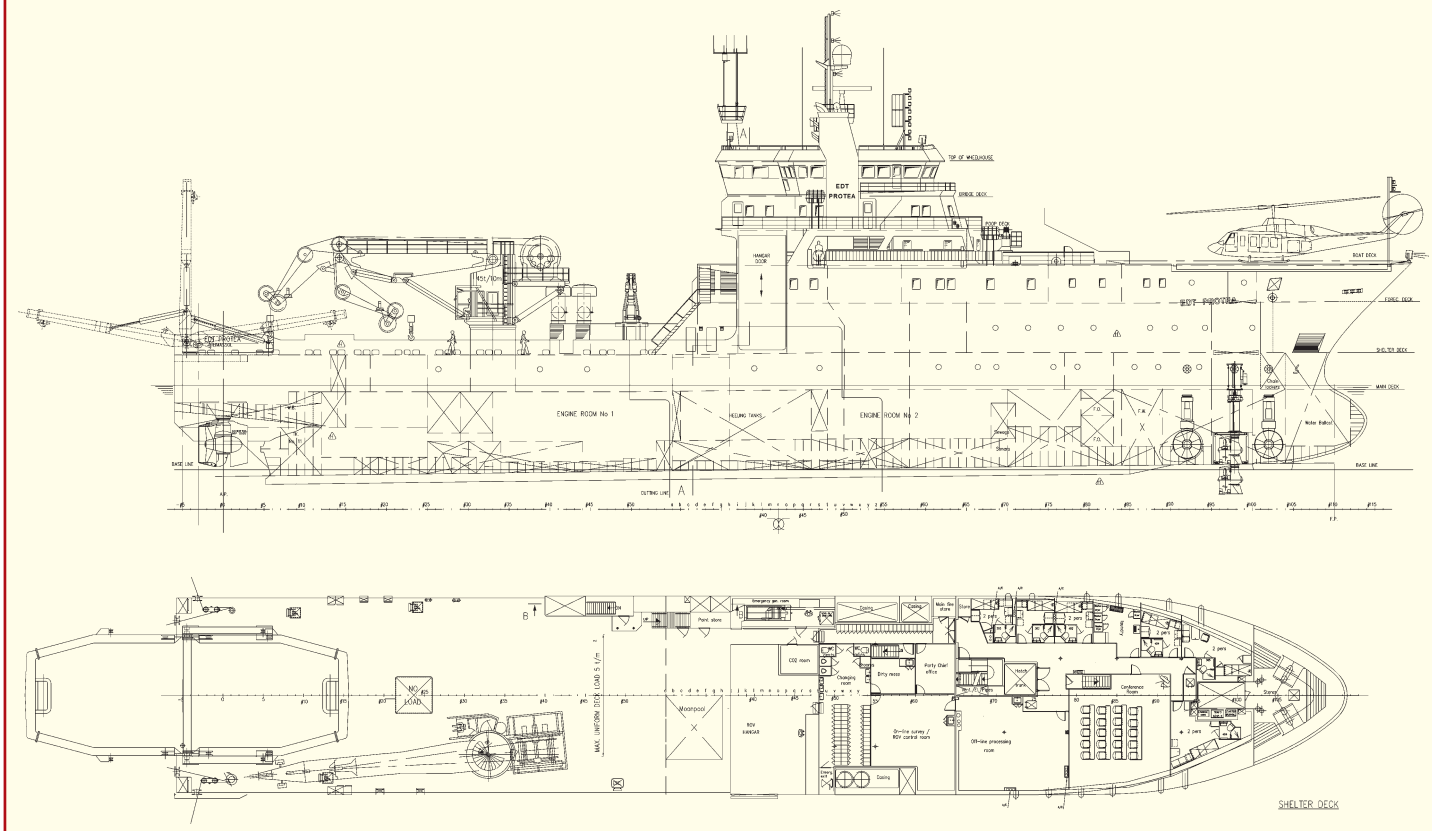


Photo: Remontowa SA


**The 120 T bollard pull AHTS ship de Moulin Tide, during sea trials.**

# Another AHTS delivered to renowned US operator

On August 14, 2006, christening of a modern offshore support vessel took place at Remontowa S.A. After christening ceremony and sea trials the 120 T bollard pull AHTS ship *de Moulin Tide* was delivered to Tidewater Marine Inc. - the world leader in offshore support services. In all as many as six similar vessels will be delivered to New Orleans, US based operator until 2008.

The construction of first units for Tidewater at REMONTOWA Group commenced in January 2004. So far - 3 units have been delivered, including de Moulin Tide, however the two initial units were of a slightly smaller sized design with smaller bollard pull figures (100 T). The current batch of more powerful AHTS vessels was contracted in the first half of 2005, which proved fruitful for the Offshore Department of Remontowa as Tidewater Marine LLC decided to continue cooperation in newbuildings with Gdansk Shiprepair Yard Remontowa S.A. Tidewater Marine, based in New Orleans, USA, placed an order for a pair of type NED 8167 L anchor handling towing supply vessels (AHTSV) with options for two more ships, later turn into firm order, even with additional units ordered up to 6 units, of which the first one, *de Moulin Tide*, has meanwhile been delivered – as mentioned above..

The new vessels will be based on a project, NED 8167, that has already been completed for the same owner. These vessels have been improved for this new endeavor through the base of experience gained during the construction of the previously delivered pair, the *J Hugh Roff Jr* and the *Big Joe Tide*. Both of those vessels were delivered last year by Remontowa.

The main change of the earlier design is reflected in the length of the vessel. The new revision has a length of 70.0 m, but the breadth and depth remain at 15.50 m and 6.60 m, respectively. Just as for the previous vessels, the recently contracted NED 8167 L series is designed to operate in shallow waters. Due to a limited rearrangement of the aft part of the ship, the continuous bollard pull has been increased to 120 tonnes with a simultaneous increase of the vessels' capacities, meanwhile keeping other vital features of the ship operating at the highest possible level.

The AHTS vessels in question are modern multipurpose vessels designed for anchor handling and rig towing with significant cargo capability for rig and offshore platform supply. As was the case with previous ships for Tidewater, Remontowa is using the same design office, Remontowa's own Naval Engineering & Design Ltd. NED.

Propulsion is based on American two stroke twin Diesel main engines. Each of the two engines delivers 5000 BHP at 900 rpm through reduction gears to controllable pitch propellers in Kort nozzles. The machinery is designed to provide a service speed of 13 knots, and a maximum speed to exceed 15 knots. The overall power plant efficiency will be improved through the adoption of 1200 kW shaft generators. New vessels are to be classed as DP-1, but shall be ready for upgrading to DP-2 if so required by a potential client. In order to ensure that the vessel is ready for this upgrade, two 800 HP side thrusters shall be installed along with two 250 kW auxiliary generator sets.

A waterfall-type towing winch with 300 tonnes loading capacity is driven by a low pressure hydraulic system, and shall include two de-clutchable towing and anchor-handling drums, each with a holding capacity of 1500 m of 72 mm diameter wire. The towing outfit will also include a single storage reel to accommodate 1000 m of 64 mm diameter wire, two 10 ton capacity tugger winches, a 500T capacity shark jaw, and towing pins.

The stern roller will have main dimensions of 4.0m long and 2.5m diameter and should accommodate a 400 tonnes design load.

Besides anchor handling and towing functions, the new ships will be suited for rig and platform supply services by means of an open deck capacity for 1000 t of equipment and cargo. The ships are also being outfitted with tanks located under the main deck for drill water, potable water, liquid mud, fuel oil and dry bulks (cement, bentonite, barites etc.) Also, both vessels will have the possibility to be used as auxiliary fire fighters due to their two 1200 cubic meter / hour fire monitors installed on top of the wheelhouse.

It is worth recalling the beginnings of Tidewater - Remontowa co-operation. When Tidewater Marine LLC of New Orleans, Louisiana, USA called in June 2002 for bids for three series (80, 100 and 120T bollard pull) of AHTS, Remontowa's American & Offshore Commercial Department, which is responsible for further development of offshore sector services, had to decide the best way of attitude. Analysis of technical conditions lead to the conclusion, that Customer's expectation is to have rather small vessels in size, but with comparatively large cargo capacities. In addition, the smallest bollard pulls vessel looked as limited water depth operator. Available on the market, typical AHTS projects did not fulfil those conditions, while famous, independent consultants offered only theoretically customised design, since they were providing rather geometrically converted hull forms and / or compilations of previous solutions. Basing on the above, it was decided to prepare own and new concept despite the call for the bids clearly stat-

ed that only proven design would be accepted. Finally, contract for newbuilding acquired, proved such Remontowa's attitude suitable and successful.

„Cost cutter" was the nickname given by Tidewater to the vessels, as the guiding principle of projects. It meant not only simple construction and lower construction cost, but also considerably lower recurring, operating costs. As long as demanded vessel's dimensions and bollard pull are observed, the only way to satisfy operating costs lowering expectations is to increase the speed, deadweight and cargo capacity, in terms of maintained propulsion power level. In such case the cost of cargo unit transfer is for sure lower, comparing to competing solutions. Bigger cargo capacity and increased number of voyages, within the same period of time and with comparable fuel consumption, should attract potential clients by offering an advantage in form of vessel's flexibility with her special hull form design, allowing operation either on shallow or deep water oil fields. Opportunity in offering of lower service rates would further sharp operator's competitive edge on extremely tough market at present.

Locally sited Naval Engineering and Design's team, chosen by Remontowa as authors of new concept, examined number of different propulsion systems, sophisticated solutions of ship's body forms, as well as vessel's layout, what resulted in more than thirty well-developed project versions. This would eventually help to fulfill specific needs of other, potential clients, as well as have resulted in compromised and well balanced solution, finally presented to the owners.

Limited vessel's breadth and draft on one hand, with increased deadweight, bollard pull and speed on the other, seem to contradict strongly and form rather ambitious challenge. Therefore, local Ship Design and Research Centre (CTO) has been employed and extensive programme of tank testing was performed, to prove assumed parameters and to ensure satisfactory seakeeping characteristics as well.

Additional cost cutting gain, important for shipbuilders, is homeliness of applied body shape, which spares labour cost of the hull's erection.

Moreover, promising results of this type of ship, gave excellent hull form for shallow water platform supply vessel (PSV) or other OSV concept, where cargo capacity and vessel's speed may be further, significantly increased, comparing to AHTS results.

## Principal particulars

| | |
|---|---|
| Length O.A. | 70.00 m |
| Length B.P. | 66.60 m |
| Breadth moulded | 15.50 m |
| Depth to 1st deck | 6.60 m |
| Design draught | 5.10 m |
| Bollard pull | 120 MT |
| Class | ABS ✠ A1 (E), Offshore Support Vessel, ✠ AMS, ✠ DPS-1, ✠ FFV Class 1 |

## Capacities

| | |
|---|---|
| Deadweight at draught of 5.10 m | 2050 t |
| Deck cargo area | 437.0 m² |
| Dry Bulk | 193.6 m³ |
| Fuel oil | 730.0 m³ |
| Water Ballast / Drill Water | 885.0 m³ |
| Potable Water | 100.0 m³ |
| Cargo Fresh Water | 535.0 m³ |
| Liquid Mud (s.g. 2.5) | 485.0 m³ |
| Accommodation | 28+1 berths |

## Propulsion / power system

| | |
|---|---|
| Rated output | 2 × 3730 kW (5000 HP) at 900 rpm |
| Gearbox | 2 × (165 rpm; 5.45:1) |
| Shaft line with propeller | 2 × CPP, Ø 3400 in nozzles |
| Shaft generators | 2 × 1200 kW at 1800 rpm |
| Generating set | 2 × 250 kW at 1800 rpm |
| Emergency/harbour generator | 1 × 150 kW at 1800 rpm |

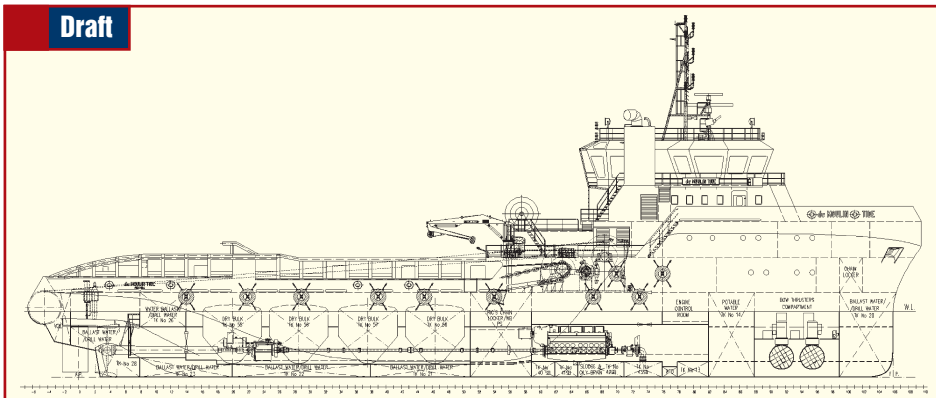
## Deck equipment

| | |
|---|---|
| Hydraulically driven towing winch | 300 t |
| Tugger winches | 2 × 10 t |
| Stern roller | 400 t / dia 2.5 m, length 4.0 m |
| Shark jaws & towing pins | 1 set |
| Deck crane | 1 electro-hydraulic knuckle arm 2 t/10 m |

## Cargo pumps

| | |
|---|---|
| Fuel oil | 1 × 150 m³/h-9 bar el. dr. |
| Fresh water | 1 × 150 m³/h-9 bar el. dr. |
| Ballast/Drill Water | 1 × 150 m³/h-9 bar el. dr. |
| Liquid Mud | 2 × 150 m³/h-7 bar el. dr. |
| Bulk Handling System | 2 × bulk mud compressors each 1100 m³/h at 8 bar |

## Draft



# Harbour tug from Northern Shipyard

By the end of this year WUŻ Gdynia ("WUŻ" - Shipping and Port Services Gdynia Co. Ltd.) is expected to take delivery of its harbour tug, currently on order from Northern Shipyard of REMONTOWA Group. The tug's hull has already been launched at Gdansk Shipyard, where it was sub-contracted and brought to Northern Shipyard for completion and outfitting.

The contract was signed in November 2005. Remontowa won the tender against several competitors, including Damen Shipyard Gdynia and Nauta Shiprepair Yard. The first steel for the tug was cut on March 30, this year. As Andrzej Bienkowski, chairman of the board at WUŻ emphasized - the tug will be a truly modern ship, perfectly suited to operator's requirements.

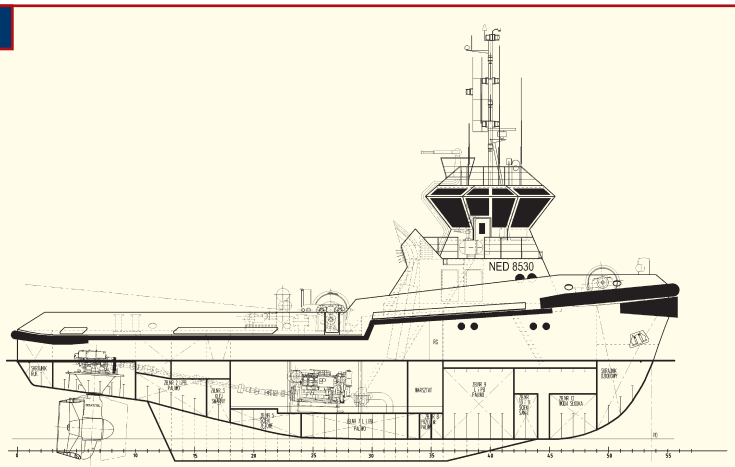
The tug under construction for WUŻ is in-house designed in REMONTOWA Group by NED naval architects and marine consultants, and features twin azimuthing stern drive. The tug is destined for harbour and roadsted ship handling and assist tasks. The ship will have an ice class. In addition to its ordinary towage and assist tasks in ports and in the range of Baltic Sea and Northern Sea, she will also be equipped for fire-fighting operations.

■

## Main particulars

| | |
|---|---|
| Length O.A. | 30.30 m |
| Beam | 10.40 m |
| Displacement | 410 t |
| Max draught | 4.80 m |
| ME power | 2 × 1425 kW |
| Speed | 13.5 kn |
| Bollard pull | 45 T |
| Complement | 5+3 |

## Draft



# Damen ASD 2509 type harbour tugs *Vikhrevoy* and *Moschnyi*

Damen Shipyards Gdynia continues with their ASD tug production line. Just another ship was delivered to a Russian owner Baltic Tugs Cyprus (part of Baltic Basin Emergency-Rescue Management - DGUP Baltiyskoye Basseynoye Avariyno-Spasatelnoye Upravleniye) at the turn of June and July. It is a ship assist tug of Damen ASD 2509 type for coastal and harbour services, sea towage and fire extinguishing.

In a christening ceremony, attended and performed by the godmother Alina Serebrjakowa of Baltic Tugs and Jurij Aleksiejew, the consul of Russian Federation in Gdansk, and an orthodox priest, the tug was named *Vikhrevoy*. The tug features gross tonnage of 198, 410 t displacement and 110 t deadweight. The ship's length overall is 25.86 m, length between perpendiculars 22,75 m, moulded breadth 8.94 m and extreme beam is 9.25 m. The ship's draught is 3.35 m with depth of 4.30 m.

The main propulsion comprises two diesel oil engines (Caterpillar Inc. built 3512B-TA, 4-stroke, single acting, vee 12 cylinder units of 1305 kW (1774 HP) MCR) reduction geared to propeller shafts driving two Z-propellers. The total power is 2,610 kW (3,548 HP). This propulsion configuration allows the ship to achieve max. speed of 12.70 knots and service speed of 11.00 kts and the tug's bollard pull is 36.7 T.

The first tug built for Baltic Tugs was the *Moschnyi*, a sistership to *Vikhrevoy*, delivered in March 2006. ■


Photo: Damen Shipyards Gdynia

## Main particulars

| | |
|---|---|
| Basic functions: | towing, mooring and fire fighting |
| Classification: | ✠ 100 A1 tug specified coastal or route service, Ice class 1A FS, UMS LMC (without cross) with the descriptive note: strengthened for ice class 1AS FS |
| Flag: | Russia |
| Owner: | Baltic Tugs Limited |
| Builder: | Damen Shipyards Gdynia, Poland |
| Designer: | Damen Shipyard, Gorinchem, The Netherlands |

| Dimensions | |
|---|---|
| Length o.a. | 25.86 m |
| Beam o.a. | 8.94 m |
| Depth at sides | 4.30 m |
| Draught aft | 4.30 m |
| Displacement | 420 ton |

| Tank capacities: | |
|---|---|
| - fuel oil | 72.1 m³ |
| - fresh water | 12.1 m³ |
| - foam | 6.7 m³ |
| - sewage | 1.6 m³ |
| - lubrication oil | 1.6 m³ |
| - dirty oil | 1.6 m³ |
| - sludge | 1.6 m³ |
| - bilge water | 5.5 m³ |

| Performances (trials): | |
|---|---|
| Bollard pull ahead | 36.7 ton |
| bollard pull astern | 35.0 ton |
| speed ahead | 12.7 knots |
| speed astern | 12.2 knots |

## Propulsion system

| | |
|---|---|
| Main engines | 2 × Caterpillar 3512B HD TA/B |
| Total power | 2610 kW (3500 HP) at 1600 rpm |
| Azimuth thrusters | Rolls Royce US 205 |
| Propeller diameter | 2000 mm |
| Forced ventilation | 40 000 m³/hr |

## Auxiliary equipment

| | |
|---|---|
| Main generator sets | 2 × Cat 3056 T, 230/400V, 105 kVA, 50 Hz |
| Bilge pumps | 2 × Sterling SIHI AKHK 5101 20 m³/hr |
| Fuel pumps | 2 × Sterling SIHI AOHA 3101 4.5 m³/hr |
| Cooling system | fresh water through cooling channels |
| Hydraulic system | double main engine driven pumps |
| Fi-fi set | 1 × Cat 3306B TA, pump 600 m³/hr, 10 bar |
| Fi-fi monitors | Sopot Purga 83, 2 × 300m³/hr, water/foam |
| Deck lay-out: | Anchor |


Photo.: Remontowa S.A.

# Rapid Intervention Vessel *Alert* built by Remontowa S.A. for Trinity House

**Alert *during sea trias.***

The signing of delivery documents related to Rapid Intervention Vessel Alert took place on Monday, April 10, 2006, followed by British flag hoisting and a small delivery celebration meeting of the representatives of parties involved in the construction of vessel at its bridge. RIV Alert was built at Northern Shipyard, part of REMONTOWA Group for Trinity House, United Kingdom. On the next morning, the ship departed for Harwich.

Delivery follows launching of THV *Alert*, outfitting and extensive programme of sea trials performed during March 2006. On Tuesday, 11 October 2005, Mrs Janet Melson, wife of Peter Melson, Director of Operations and Asset Management at Trinity House, launched the new Trinity House Rapid Intervention Vessel *Alert* in front of a large gathering at the Remontowa SA shipyard in Gdansk, Poland.

The vessel is equipped with 3000 kW main engines and is 52.5 tonnes deadweight. She has twin CCP drives, bow thrusters and a dynamic positioning system. *Alert* is a coastal working vessel and will, in addition to maintaining aids to navigation, provide a fast response to incidents and carry out emergency wreck marking and hydrographic survey services. Her primary area of operation will be the busy shipping routes of the Dover Strait, English Channel and Southern North Sea.

The *Alert* marks the first stage of an investment of GBP 38 million on three new vessels by the General Lighthouse Authorities (GLA's) of the United Kingdom and Ireland. The contract, signed on March 11, 2004 in London, with the Remontowa S.A. called for the construction and delivery of two 82 m Multi-Function Tenders (MFTs), one for Northern Lighthouse Board (*Pharos*) and one for Trinity House (to be named *Galatea*) – both to be delivered by the end of 2006 / early 2007, as well as one 35 m Rapid Intervention Vessel (RIV) for Trinity House (*Alert*). The ships are being built to the high technical standards demanded by the General Lighthouse Authorities for the exacting operations they conduct around our coast.

The tendering process to select the shipyard to build the vessels followed the requirements of the EU Procurement Directives. Remontowa SA have won the contract in fierce competition with five premier European yards.

## Trinity House RIV Technical Description

Vessel is designed as a Rapid Intervention Vessel (RIV) capable of flexible operation, carrying out a wide range of attendance activities in addition to its prime task of emergency wreck intervention and wreck and obstruction location and marking.

Vessel is a mono-hull design with a hull of welded steel construction and deckhouses of welded aluminium construction. Steel hull incorporates additional strengthening in way of overside working areas. The ship has a transom stern and raked bow.

Vessel is be propelled by twin diesel engines driving twin controllable pitch propellers through reduction gearboxes. *Alert* is fitted with twin high aspect ratio cantilevered rudders and a transverse tunnel bow thruster forward to give high levels of ma-

noeuvrability and control. Vessel in service will be capable of operating at infinitely variable speeds varying from zero up to maximum speed. Vessel is designed to achieve a trial speed of not less than 16,5 knots and is to achieve a minimum bollard pull of 25 tonnes with the main engines developing not more than 100 % MCR. Main engines were designed as not rated at more than 3000 kW total. Auxiliary electric power is generated to give 400V, 50 Hz, 3 phase, 230V 1 phase and 110 V 1 phase.

*Alert* is, however, much more than a fast standby vessel. Besides its day to day duties, the ship is also well prepared for commercial role, being available for hire to conduct survey work. The vessel is equipped with ample and sophisticated equipment for hydrographical survey. Multi-beam echo sounder, single beam echo sounder, side scan sonar, sound velocity sensors supported by most precise positioning system and post processing hardware/software enable wide range of survey activity.

Thermal night vision system, motion stabilized, allows to carry out search and rescue action at any time of the day and at any weather.

Any mode of sailing or position keeping can be realized both manually and automatically with using Dynamic Positioning System, which engages all components of the propulsion system - both controllable pitch propellers, both rudders and bow thruster.

Fully air conditioned, high quality accommodation for a total complement of 10 persons (6+4) is arranged forward. The galley, messroom, changing room and galley store are arranged in the forecastle deckhouse. Sleeping cabins and washrooms will be arranged on the lower deck.

■ ■ ■

Trinity House is the General Lighthouse Authority for England, Wales and the Channel Islands, providing nearly 600 Aids to Navigation ranging from lighthouses, buoys and beacons to the latest satellite navigation technology. It is also a major maritime charity, wholly funded by its endowments, and spends around GBP 2m each year on its charitable activities including welfare of mariners, education and training, the promotion of safety at sea, and its role as a Deep Sea Pilotage Authority.

■

## Main particulars

| | |
|---|---|
| Contracted by: | Remontowa S.A., Gdańsk, Poland |
| Builder: | Northern Shipyard, Gdańsk, Poland |
| Length Overall Mld Hull | 39.30 m |
| Length b.p. | 34.20 m |
| Breadth Moulded. | 8.00 m |
| Depth Moulded to Main Deck | 4.00 m |
| Depth Moulded to Lower Deck | 2.70 m |
| Depth Moulded to Forecastle Deck | 5.20 m |
| Design Draft Moulded | 2.40 m |
| Draft Scantling Moulded | 2.60 m |
| Air Draught | 18.00 m |

The hull, machinery and electrical installations are built and installed under special survey and in accordance with the Rules and Regulations of Lloyd's Register of Shipping for notation:

✠100A1, SSC Workboat, G4, ✠LMC, UMS, MCM, EP, LA, DP, CM

Vessel is registered in the United Kingdom, port of registry London and will comply with the requirements of the U.K. Maritime & Coastguard Agency (MCA), the Flag Authority, for a Class VIII vessel.

## General Arrangement

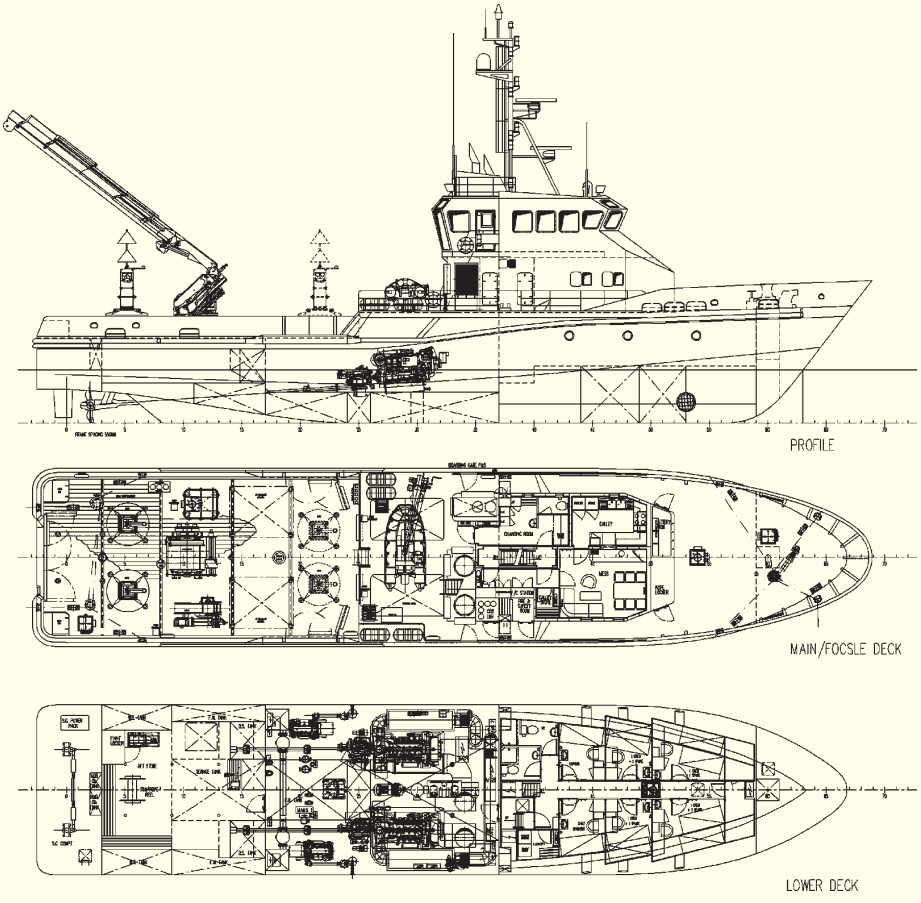



Fig.: Remontowa S.A.

# Unique icebreaking emergency evacuation vessels from Remontowa

Pict.: Remontowa S.A.

*Ilustration of icebreaking emergency evacuation vessels from Remontowa.*

Discovered in July 2000, Kashagan could prove to be the world's fifth largest oilfield. It is owned by a group of partners led by Agip.

Agip KCO, a fully owned Eni company, is the operator of the offshore Kashagan oil field on behalf of a consortium of seven companies.. The members of the Consortium are: Agip Caspian Sea B.V. (Operator 18.52%), KazMunayGas (8.33%), Eni 18.52%; ExxonMobil 18.52%; Shell 18.52%; Total 18.52%; ConocoPhillips; 9.26%; INPEX 8.33%.

The entire Caspian Sea is around 30m below sea level and while the mean water depth as a whole is 208 m, this is considerably shallower to the north-east. The field, 75 km SSE of Atyrau, lies in just 3.7m of water. Temperatures can fall below -20˚C in winter and a coating of ice, several metres thick, forms in this part of the Caspian Sea for many months of the year.

Such adverse weather conditions, adding to shallow water, put exceptional demands on the design of a floating unit to provide effective emergency evacuation.

The very special craft is being built at Remontowa S.A. yard in Gdansk, Poland.

On July 22, 2005, Gdańsk Shiprepair Yard „Remontowa" S.A. and Agip KCO signed a contract for the construction and delivery of four specialised Ice Breaking Emergency Evacuation Vessels (IBEEV), becoming yard numbers B 843/1-4. Moreover, the contract provides Agip KCO with an option to order four additional vessels.

The last unit from the first batch of these unique vessels was launched mid-August. All four evacuation vessels should be delivered by November 2006.

The vessels would be used to carry out the emergency evacuation of personnel from offshore installations located in the Kashagan Field, which is currently one of the largest offshore developments in the world.

IBEEV represents state-of-the-art technology and complies with Det Norske Veritas class notation X 1A1 ICE 1B DAT (-30˚ C).

The vessels measure 45.10 m in length, 8.0 m in beam and 3.60 m in depth. The specific requirements of Agip KCO as well as the onerous environmental operating conditions have challenged the Yard to develop tailor made solutions for this project. The craft was designed by Naval Engineering & Design Ltd, Poland.

Special focus has been put on the development of the propulsion solution, allowing the vessels to operate safely within a toxic / hydrocarbon environment. Combustion air will be provided by a specialized installation consisting of 16 high pressure cylinders storing air compressed to 350 bar, decompressed via pressure reducing panels and supplied to the engines.

The Det Norske Veritas classed IBEEV will have diesel electric propulsion, consisting of two 800kW diesel-electric prime movers running at 1500 rpm and driving twin azimuth thrusters rated at 550 kW at 1500 rpm.

The winter ice conditions prevailing in the North East Caspian resulted in the designers developing a hull form with the capability for vessel operation in „first year" ice (0.6 m thick), which was proved by extensive model tests. The shallow waters of Caspian Sea also required tight design control over the draught of the vessel, which is not to exceed 2.0 m in summer and 2.1 in winter conditions. Environmental factors were also taken into account, resulting in the application of „no discharge" equipment and fulfilment of requirements of MARPOL as well as other International conventions.

The evacuees will enter the vessels through evacuation tunnels linking each vessel to an Island facility. Evacuees will enter the vessel via an air lock, which will be purged using stored air from cylinders, after purging, the evacuees will proceed forward through the vessel, to one of three hermetically sealed evacuee compartments. During evacuation, personal $CO_2$ scrubbers and re-breather sets will be provided to each of the evacuees. Solid-state chlorate candles will be used to generate additional oxygen in the evacuee compartments as the oxygen levels are depleted by the evacuees.

■

## Principal characteristics

| | |
|---|---|
| Length overall | 45.10 m |
| Length, waterline | 42.34 m |
| Breadth moulded | 8.00 m |
| Depth to main deck | 3.60 m |
| Depth to upper deck | 5.80 m |
| Draught, summer | 2.00 m |
| Draught, winter | 2.10 m |
| Ice breaking capability | 0.60 m |
| Class | DNV ✠ 1A1 ICE 1B DAT (-30°C) |
| Fuel oil | 9.50 m³ |
| Water Ballast / Auxiliary Cooling Water | 25.0 m³ |
| Potable Water | 4.20 m³ |
| Sewage /Grey Water | 1.00 m³ |
| Crew | 2 |
| Evacuees seated | 328 |
| Evacuees (stretcher-borne casualties) | 10 |
| Diesel-electric output power | 2 × 800 kW at 1500 rpm |
| Azimuth thrusters | 2 × 550 kW at 1500 rpm |
| Radio Station | GMDSS Sea area 3 |


Gdańsk Shiprepair Yard REMONTOWA S.A.
NORTHERN Shipyard S.A.
INVEST – REM S.A.
HYDROSTER Ships Machinery Works Ltd – *marine hydraulic systems*
RUMIA Marine Equipment Factory Ltd – *boilers, heat exchangers*
POLAM – REM S.A. – *lighting fittings*
FAMOS Ship Furniture Factory Ltd
PBUCH Enterprise for Manufacturing of Refrigeration Equipment S.A.
KLIMOR Refrigerating and Air Conditioning Plant Works Ltd
MORS Marine Radio Service Ltd – *radio-nautical systems*
IT – REM Ltd – *IT services*
STAL – REM S.A. – *steel constructions*
KMK Ltd – *steel constructions*
HOLM Construction Ltd – *steel constructions*
TRANS – REM Ltd – *transport services*
PAINT INVEST – REM Ltd – *anticorrosion protection*
SHIP PAINTERS Ltd – *anticorrosion protection*
TAK – REM Ltd – *machining services*
RAMO – REM Ltd – *electrical services*
GAZ – REM Ltd – *technical gases supplies*
ENERGO – REM Ltd – *energy equipment services*
CAPITAL Ltd – *scaffolding services*
TMX Technical Works Ltd
NED Naval Engineering and Design Ltd
POLSHIP Trading GmbH, Hamburg – *spares and steel supplies*
SHIPBUILDING & SHIPPING Ltd – *publisher of Shipping Magazine*

**26 COMPANIES ■ 6 THOUSAND EMPLOYEES ■ 4 THOUSAND CO-OPERATORS**

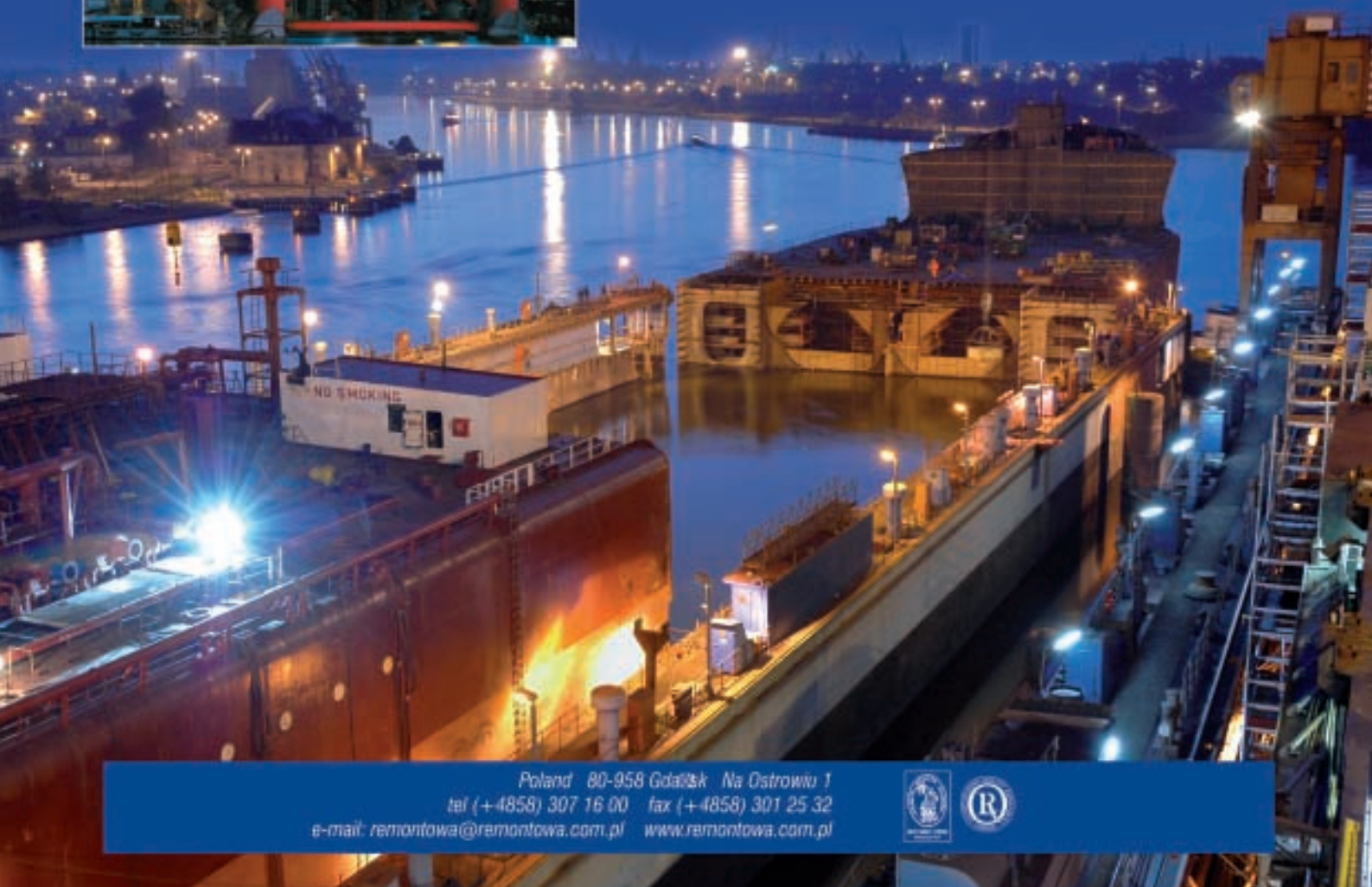
# REMONTOWA

Gdańsk Shiprepair Yard "Remontowa" S.A.

ship conversions and repairs

design, engineering, shipbuilding

offshore projects, steel structures

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