

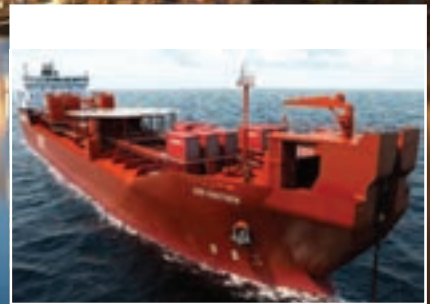
SPECIAL ISSUE

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maritime magazine

REVIEW OF THE POLISH MARITIME INDUSTRY



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Poland at SEA

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Platform Supply Vessels from REMONTOWA Shipbuilding S.A.

In full swing!



PSV Lewek Andes – one of the series built for EMAS on sea trials.

Over the recent years one major production line at Remontowa Shipbuilding SA is offshore support vessels. Previously the yard delivered a long series of AHTS vessels to such owners as Tidewater, Edison Chouest Offshore, GulfMark and Marnavi - some 35 units within 2003-2010. Currently the company is occupied with orders for advanced, high-specification platform supply vessels (PSV).

It started with EMAS (Ezra Holding) contract. Then orders from renowned owners Edison Chouest and GulfMark followed...

Large platform supply vessels for EMAS

First of versatile PSV vessels for Ezra Holdings was delivered at the end of Q1 last year. On March 29, 2012 in Gdansk, REMONTOWA Shipbuilding SA

(RSB) together with the Owners, hosted the christening ceremony of *Lewek Andes*. The ship was the first of a pair of modern, versatile Platform Supply Vessels (featuring also anchor handling capability) to be operated by Ezra. As the Owner stated, describing these units "the ships have been built with the latest leading edge technology".

Construction of these two units (combining their major supply duties with ocean towage and anchor handling

capabilities) for Ezra group - Singaporean owners and operators is based on Polish design MMC 887 CP supplied by MMC Ship Design & Marine Consulting Ltd. The first of these two ships - PSV *Lewek Andes* - was delivered in April 2012, while the second one - *Lewek Aquarius* - was at the outfitting quay at that time, to be eventually christened and delivered on May 31st 2012.

The MMC 887 CP type vessels are designed and built to meet the highest operation demands with the most cost efficient solutions, while conforming to most recent MARPOL environmental requirements, according to class requirements and under supervision of American Bureau of Shipping.

The versatile ships serve predominantly as supply vessels, however they also have anchor handling and ocean towage capabilities. The vessels are able to fulfill general supply service needs of contemporary offshore industry such as carriage of dry bulks, general supplies



PSV Bongo – the first unit built for ECO moored at the Remontowa Shipbuilding's quay.

and liquid mud, general cargo, pipes on the open deck as well as special products like methanol. Owing to structural stainless steel tanks equipped with hydraulic driven submerged pumps, fixed deck foam system and nitrogen as inert gas installation - methanol and other dangerous goods can be carried in safe manner.

Measuring 87.90 metres in length, 18.80 metres wide and 8 m deep, the 5200 dwt vessels have a spacious deck area exceeding 900 sq m and an accommodation capacity for 60 persons.

In order to conduct oilfield support features, the vessels comply with Fi-Fi 1 and are equipped for oil recovery and safety standby assignments. Moreover, the vessels have been equipped for safety standby rescue missions (up to 300 survivors) and oil recovery operation.

The vessels are designed so that they can carry out towage and anchor handling duties and are well suited for these tasks owing to features of the main deck (i.e. stern roller, towing winch), as well as due to hybrid propulsion drive provided.

The combination of electric drive used in supply mode and possibility of engagement of additional power from main engines directly via shaft lines to CP propellers gives the Owners necessary operational flexibility. In the supply mode, the vessels operate on electric drive. DP2 (IMO Class 2 dynamic positioning system) gives adequate station keeping properties.

The new MPSV have been also built in accordance with the latest SPS code. Moreover, emphasis has been given to observe regulation of ABS ENVIRO class notation, a clear, internationally recognized credential that can be used to demonstrate Owner's commitment to operating with minimum adverse impact on the environment.

A series of eight ships for Edison Chouest

Currently, RSB is also executing two contracts for the construction of PSV type offshore ships being built for Edison Chouest Offshore (ECO) and for GulfMark.

As of around mid-April, when we went to press, the most recent delivery for ECO was that of *Kudu* - the second unit from series of eight.

These vessels are being built for the one of the American leaders in offshore industry - ECO. The company is one of the industry's largest, most diverse and dynamic marine transportation solutions providers, which also runs its own shipyards.

The first unit of the series, *Bongo*, was delivered in December 2012. Further vessels are at various stages of construction and outfitting with the nearest deliveries expected to take place late May and late August 2013 while all the remaining units from the series of eight are expected to be delivered successively until the 3rd quarter of 2014. Some of the names chosen for these ships are *Kudo*, *Sable*, *Oryx*, *Eland*, *Gemsbok* and *Wildebeest*.

The vessels are designed with diesel-electric propulsion system, which enables most cost efficient operation, reduction of fuel consumption and lower emission of NO_x and SO_x to the atmosphere. However the design does not utilize a standard type of diesel-electric propulsion, to be seen commonly on-board diesel-electric driven ships built so far. Instead, it is equipped with an innovative medium voltage (4.16 kV) electrical network, and novel technologies for electrical frequency control for propulsion drives utilized "Current Source Inverter". Application of these technologies puts RSB at the forefront of modern shipbuilders in Europe and worldwide.

The vessel can fulfill common requirements of the offshore industry, such as carriage of liquid mud, dry bulk, and special products like methanol, as well as pipes and other general, break-bulk cargo and offshore containers on open deck.



Illustr.: IMC/Remontowa Shipbuilding SA

This is how a PSV for Gulf Offshore N.S. will look like...

The ship being built under supervision of American Bureau of Shipping and according to the design (MMC 887 L) elaborated by MMC Ship Design & Marine Consulting Ltd from Gdynia, Poland, will rank among the largest ones in her class. Deck area of some 1050 sq. m capable of taking load of 10 t / sq. m allows for carriage of goods in the range of well above 2500 tons, while dangerous goods may be carried in tanks under the deck with the vessel achieving a total deadweight capacity of some 5500 tonnes.

The vessel is to be equipped with advanced control systems, dynamic positioning (DP2 class) as well as fire-fighting equipment (FiFi-1 class) and equipment for oil recovery operations.

GulfMark trio

Another contract related to advanced platform supply vessels, that RSB is currently occupied with, is the one signed in August 2011 with renowned offshore support fleet Owner and Operator - Gulf Offshore N.S., Scottish branch of Houston-based GulfMark Offshore, Inc., listed on NYSE as GLF.

The three units, coming in two designs, are scheduled for delivery by the end of this year. The initial MMC887CD type vessel (yard no. B850/01, featuring 1000 square meter deck area) is expected to be delivered in the second quarter of 2013. The second vessel of the same design along with somewhat smaller MMC879CD vessel (featuring deck area of over 800 square meters) are expected to be delivered in the third quarter of 2013. The two larger vessels will be more versatile, being - by design - prepared for other roles than offshore supply alone. The conceptual design and all technical documentation for the trio is provided by Polish design office MMC Ship Design & Consulting Ltd., Gdynia.

The construction of the first unit (B850/01) commenced on January 10, 2012 with the ceremony of the first steel cutting, while late May, the keel was laid for the second Gulfmark ship (B850/02). The launching of the first unit took place on December 1, 2012. The second ship of this series was launched mid-February 2013.

The larger vessels will be able to fulfill the general demands of the offshore in-

dustry as carriage of liquid mud, dry bulk and other general cargo on open deck. The vessel of this type is designed for typical supply services between shore base, drilling sites and other ships as well as for Firefighting and Oil Recovery operations. Over 1000 sq. m working deck area as well as deadweight of 5100 t, ranks this unit between the biggest platform supply vessels.

These modern vessels will be equipped with diesel-electric propulsion consisting of four main generating sets supplying total of 6800 kW. IMO Class 2 dynamic positioning system allows for operations even in the most difficult weather conditions. Another contractual feature will be the speed of 14.3 knots.

The vessel will provide up to 40 places in accommodation consisting of 28 cabins. She will meet the highest standards of classification societies required for operating in the North Sea. The vessel will also feature "clean design" certificate and class notation along with so-called "green passport" - the document confirming the environmentally friendly origin of materials used for vessel's construction.

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Diversity is our strength!

“It is not only a slogan. It is the strategy strongly implemented by REMONTOWA SHIPBUILDING S.A. for many years” told us Chairman of the Shipyard – Mr. Andrzej Wojtkiewicz.

REMONTOWA SHIPBUILDING S.A, member of REMONTOWA Group is the biggest shipbuilder in Poland. Belonging to the Group allows to offer the most sophisticated products – from design to fully equipped vessel.

During last years REMONTOWA SHIPBUILDING proved that they are not scared even the most difficult tasks successfully building modern vessels of different types and parameters such as: car-passenger ferries, offshore support

vessels, multipurpose vessels, cargo vessels, technical ships and others.

In December 2012 REMONTOWA SHIPBUILDING completed construction of the series of four gas powered “green” ferries built on order of Torghatten Nord AS.

Ferries LANDEGODE, VÆROY, BODØ, and LØDINGEN operate in difficult weather conditions beyond the polar circle, serving the local communities, tourists and the industry. Operating

in such conditions defines high demands to the vessels. Each of the ferries can accommodate on board 390 passengers and take 120 cars.

The ferries were applauded by the public, appreciating their high standard, architecture and outfit. All ferries are successfully operated and received recognition of the Owner and passengers. First of the series - LANDEGODE won ShipPax Award for the innovative environmental design including LNG propulsion concept.

Currently, there are being built another two gas powered ferries.

Contrary to previously delivered ferries using diesel or gas power, these ones will be driven only by LNG and emergency CNG gas. Such solution enables reduction of harmful emissions into the atmosphere. The vessels will be the biggest ones in their class.

In March 2013 the new contract for building modern, double-ended, car-passenger ferry with Gas-Electric propulsion was signed. It is the result of winning the tender announced by SAMSØ Kommune, located in Denmark, in the region of Jutland Peninsula.

Selecting of REMONTOWA SHIPBUILDING was caused by high quality of offered vessels as well as experience in construction similar gas powered ferries.

Construction of innovative gas powered ferries meeting restrictive, ecological rules has become one of the main specialties of REMONTOWA SHIPBUILDING S.A.

This specialization was appreciated by the Owners from Denmark, Norway and United Kingdom.

“The next, very important area of our activity is building of modern, multipurpose offshore support vessels for Owners from different countries” – stressed Mr. Andrzej Wojtkiewicz.



A PSV vessel built at Remontowa Shipbuilding S.A. See details on pages: 3 - 5.



Last year, two multipurpose Platform Supply Vessels "LEWEK ANDES" and "LEWEK AQUARIUS" were delivered to the Owner from Singapore – EZRA Holding.

The vessels were equipped with hybrid propulsion which enables most cost efficient exploitation, reduction of fuel consumption and low emission of NOx and SOx to the atmosphere. The vessels meet highest operation demands with the most cost efficient solutions. The vessels are designed for regular supply services between shore base, drilling sites and other ships, handling of anchors and mooring lines consisting of wire and chain. Vessels are equipped with IMO Class 2 dynamic positioning system and destined for world wide services. More over the vessels are equipped for Fi-Fi 1, Safety Standby Rescue missions (up-to 300 survivals) and Oil Recovery operation. Actually, vessels are operated on the West Coast of Africa.

Currently, next nine offshore vessels are being built in REMONTOWA SHIPBUILDING for well-known clients such as Edison Chouest Offshore and Gulf Mark Offshore.



**A ferry recently contracted by Remontowa Shipbuilding S.A.
See details on pages: 12-13.**

First two vessels of this series have already left REMONTOWA SHIPBUILDING, next, are expected to be delivered in the sequence of three months.

The vessels will be equipped with Diesel – Electric power system and will fulfill the general demands of the offshore industry as carriage of liquid mud, dry bulk, and special products like methanol, pipes and other general cargo on open deck.

New Platform Supply Vessels are destined for use in all sea areas, regardless of weather conditions.

Long - term cooperation with the largest Owners of the offshore fleet - confirms the undisputed position of REMONTOWA SHIPBUILDING S.A. as a market leader in construction of the vessels for the offshore industry.

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 - PSV,
 - rescue vessels,
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 - open deck carriers,
 - LNG / LPG / LEG carriers,
- multipurpose vessels:
 - hydrographic ships,
 - patrol boats,
 - multi-function buoy tenders,
 - tugs,
- fishing vessels;
- navy ships.



This specialization was appreciated by the Owners from Denmark, Finland, Germany, Gibraltar, Great Britain, Italy, Norway, Poland, Singapore, Vanuatu and USA. We welcome cooperation with the Owners from all over the world!

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www.remontowa-rsb.pl

Landegode sailing the Polish domestic waters on sea trials.

Photo: Remontowa Shipbuilding S.A.

*A series of four modern
LNG-fuelled ferries
from Gdansk*

Landegode in the limelight

Among 75 Norwegian owned and operated LNG fuelled vessels as many as eight ships (or approx. 11 percent) have been delivered by Polish shipyard REMONTOWA Shipbuilding.

The most recent LNG-fuelled ships for Norwegian owners delivered from Gdansk based REMONTOWA Shipbuilding (RSB) were a series of four innovative ferries for harsh environment operations of the far North Norwegian waters built during 2011 and 2012.

The first delivery from this series took place early October last year.

Quoted by Norwegian media, Bjørn Laksforsmo, Torghatten Nord CEO, said on that occasion: - *This is a big, long-awaited day for us employees and our company, our client, the Public Roads Administration, and not least for the locals who will finally get the opportunity to see the new ferry with their own eyes.*

After its departure, on October 9, 2012, *Landegode* was scheduled to visit Sandnes, Risavika (Stavanger), Bergen, Ålesund, Brønnøysund, Sandnessjøen and Bodø. On its way to Norway, she experienced almost gale force winds and



Photo: Remontowa Shipbuilding S.A.

Landegode. The passenger area.

Photo: Remontowa Shipbuilding S.A.

**Landegode. The back of the dining area.**

4 m high waves, however, as reported by ship's master to Norwegian media, the ship performed very well. *Landegode* arrived to Bodø, regional capital in the Norway's North, on Sunday, 14 October 2012.

The ship was welcomed with great interest in Norwegian media and the public. One of the headlines in regional media was "Almost like a Hurtigruten". Hurtigruten is a ferry service along the coastline from Bergen to Norway's far North, today served mostly by high standard cruise-ferries.

Due to its size, to different purpose and mode of operation, *Landegode* cannot be a true Hurtigruten ship, however the expression "almost like a Hurtigruten" is an example of how the ship was applauded by the public, touring the vessel inside and appreciating its high standard architecture and outfit during an "open ship". Torghatten Nord made its brand new ferry open to the public in Brønnøysund and in Bodø and regional media reported the people being impressed by the new ship.

"Nice chairs and large windows with great views, make the new ferries absolutely more tourist friendly, comparing to old ferries on the route, and it gives some Hurtigruten associations" - said one of the visitors during the "open ship" hours, when asked about impressions by local media.

However *Landegode* and her sisters, were designed to serve tourist traffic in their own right, as they operate in the region popular among tourists (especially for picturesque Lofoten), and are used not only by locals and commuters, but also by tourists to the high extend.

By the time, when *Landegode* was delivered, all the three remaining ferries from the series, yard numbers B 612 / 2-4, had been launched earlier and were at various stages of outfitting and preparations for delivery. For example the second ferry, *Vaerøy* was launched on January 17, 2012, becoming the first ship to be launched by RSB in 2012. It was already the sixth vessel built in the shipyard for the same Owners. Another launching for this series of vessels, namely for *Lødingen*, took place on May 11.

After *Landegode*, the next delivery came very soon. The ceremonial flag hoisting on *Vaerøy* took place at RSB on Monday, 15th of October 2012. The ferry is named after one of the islands belonging to the Lofoten archipelago and port lying on the served route. The remaining two ferries named *Barøy* and *Lødingen* were delivered by the turn of 2012 and 2013. All the ferries are successfully deployed in Vestfjord area.

Principal characteristics

length over all	93.00 m
length b.p.	89.98 m
moulded breadth	16.785 m
max breadth	17.295 m
depth to main deck	5.50 m
design draught (approx.)	4.00 m
airdraught	27.40 m
deadweight (approx.)	650 t
GT	5695
NT	2363
passengers	390
crew	9 persons
personal cars capacity	120 units

Let us remind that In August 2010 Norwegian transport company Torghatten Nord AS won the contract from State Road Administration to operate ferry services lines in Vestfjorden region (Torghatten Nord AS was selected as the operator of the lines Bodø-Værøy-Røst-Moskenes and Road 85 Lødingen-Bogne). To fulfill its commitment, one of the leading Norwegian ferry operators turned to REMONTOWA Group to build a series of state-of-the-art "green" ferries.

The new ferries are employed in high traffic density Norwegian waters, but what is probably more important - they have to operate in difficult weather conditions beyond the polar circle, serving the local inhabitants, tourists and the industry. Operating in such conditions defined high demands to the vessels. They each take 80 up to 120 personal cars on-board and easily accommodate 390 passengers. The service speeds in two variations of the design (with main engines of varied power installed) are 12 up to 19 knots.



Photo: Remontowa Shipbuilding S.A.

Landegode. The captain's bridge.



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Two innovative LNG fuelled ferries from Poland

The green breakthrough

A pair of innovative LNG fuelled ferries are under construction at REMONTOWA Shipbuilding.

Following the signing, in February 2012, of the newbuilding contract by REMONTOWA Shipbuilding and Norled AS of Stavanger, Norway, regarding SKS 165 type double-ended car and passenger ferries destined for Stavanger-Tou route, the construction of the first unit from the new series of gas powered car and passenger ferries began, marked by the first steel cutting on July 25, 2012.

The first steel for the second unit was cut late August. Then, on the last day of October 2012, the first keel laying ceremony was performed, with the symbolic keel being in fact two bottom, central sections of the hull.

The first hull was launched on March 8. The hull for the second unit is being assembled and partially outfitted prior to its launch provisionally scheduled for May 9, this year. The second ferry is expected to be launched, similarly to the first unit, with a spectacular splash, from building and sideways launching berth of REMONTOWA Shipbuilding.

The vessels under construction are destined for one of the largest public transport providers in Norway to serve public transport routes along Norwegian coast. The ferries' area of operation and today's environment protection culture as well as regulations require usage of innovative technology enabling to reduce emissions of NOx and SOx to the atmosphere. The vessels, powered exclusively by natural gas (with no marine diesel oil fuelled engines installed) will be the world's first of this kind as well as among the largest ones in their broader class of "green ships".

The ferries, currently under construction, each taking 165 cars onboard, will replace three smaller ships with 110 car capacity. The higher service speed will also increase the Owner's transportation capabilities. The propulsion will be gas - electric with four generating sets fuelled with LNG, two of which will be supplied with fuel from CNG tanks in emergency.

It is also worth to note that ferries, at about 124 m in length, are designed and will be equipped for operation by reduced crew comparing to ships in operation nowadays. It will be made possible owing to the most modern automation systems applied, lead to significant reduction in operational costs.

The two ferries will be built to LMG Marin basic design, however - following the agreement between the Yard and the Owners - Remontowa Marine Design & Consulting (RMDC) received from Remontowa Shipbuilding an order for detailed documentation for these vessels while LMG Marin, Bergen entrusted RMDC with part of the classification design, namely electrical drawings (**see details on page 25**).

Construction of new LNG fuelled ferries duo confirms that REMONTOWA Shipbuilding S.A. belongs to the elite group of leading and largest European builders of ships equipped with the latest "green" propulsion technology.

The first hull was launched on March 8, 2013.

Photo: Piotr B. Słomczak

*New LNG powered
ferry to be operated
in Denmark*



For an eco – friendly island

On March 18, 2013, representatives of the board of REMONTOWA Shipbuilding S.A. signed new contract for the construction of modern, double-ended, car and passenger ferry with gas-electric propulsion.

This resulted from winning the tender, with a deadline set on the end of January 2013 and announced in September last year by Samsø Kommune, located in Denmark. Contenders included four European shipyards, including German Meyer Werft.

The operation of new ferry is expected to commence in September 2014, while the delivery is scheduled for September 15, 2014.

Selection of REMONTOWA Shipbuilding (RSB) to perform construction a new ferry for Samsø Kommune was based on strong track record of Gdansk - located yard in the area of double-ended and LNG fuelled ferries. So far, RSB has built or has under construction not less than 10 LNG fuelled ferries which puts this yard on the premier position in this shipbuilding market sector in Europe and worldwide. Another decisive factor in winning the tender is the high quality of offered vessels.

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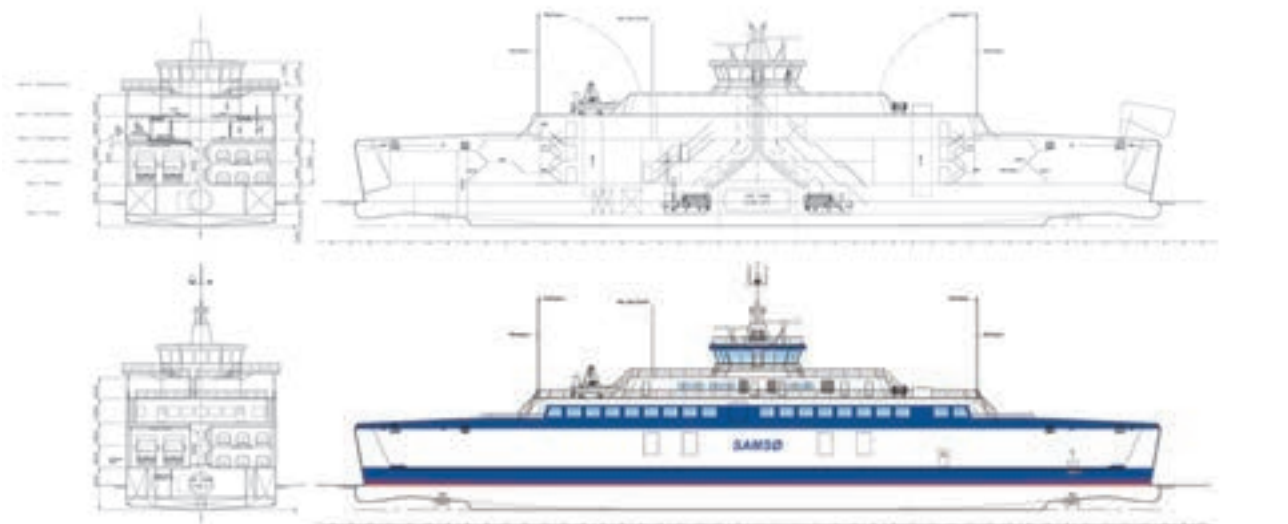
- It is a large and well-reputed company based in Gdansk, Poland. They have built many ships and have vast experience. There will be no problems with the new ferry - I dare to say even now, before the construction begins - said Jørn Nissen, mayor of Samsø Kommune to local Danish media.

Samsø authorities put strong emphasis on environmental protection. Almost 100 percent of island's electricity comes from wind power. In accordance with generally accepted pro-environmental policy, the ordered ferry will also meet high requirements related to environment friendliness. The ferry will be also cheaper to operate due to its LNG fuel available at prices competitive to that of traditional marine diesel fuel.

The vessel is designed for year-round service in local car and passenger traffic between island (Samsø) and the mainland (Jutland), namely on the route Sólvg - Hou.

She will be able to take up to 160 cars and 600 passengers on board. The vessel, at 100 meter length and speed of 16 knots, will be one of the largest gas powered ferries built at RSB so far. At the same time it will be first ferry with similar propulsion built at Remontowa for the Owner from Denmark and the first domestic ferry in Denmark to sail on LNG. The ship will be equipped with dual fuel engines that can operate on both marine diesel and environmentally friendly LNG (gas).

The concept design was developed by consulting naval architects and marine engineers OSK-ShipTech A/S, while the basic and detailed design was entrusted to Remontowa Marine Design & Consulting (**see details on page 27**).



Fjord Line's Bergensfjord launched

The luxury cruise ferry

Photo: Jakub Bogucki



Bergensfjord while being towed from Gdansk Shipyard to Rissa, where the Bergen Group Fosen yard is placed.

The Owners and the Yard must have ordered the proper weather for the ceremony, as the day of launching the ferry *Bergensfjord* was shortly preceded as well as followed by nasty weather days, including large snowfall. On the day of planned launch however, a beautiful spring weather attracted crowds to the B1 slipway operated by Gdansk Shipyard.

After successful launching and a couple of days of final works at Gdansk based yard the partly outfitted hull of *Bergensfjord* (newbuilding no. 88) was towed to Rissa, near Fosen, where the Bergen Group Fosen yard is placed, and where the first of two sister ships - *Stavangerfjord* - (launched in 2012) was nearing completion and delivery to be followed by outfitting works and delivery of *Bergensfjord*.

In Shipowner's marketing nomenclature, the ship is a cruise ferry. From technical point of view - with significant ro-ro lane capacity and modest passenger number, it would probably be justified to categorize this ship as a ro-pax.

The launch marked the completion of partly outfitted hull by Gdansk Shipyard in case of both delivered Fjord Line

ferries. However, the Gdansk based yard's range of delivery is not limited to steelwork as it included installation of cable racks and piping, painting of many internal compartments, installation of main engines, auxiliary engines (gen sets), engine room equipment, steering gear, shaftlines, internal and external ro-ro ramps, stairs and accommodation ladders, doors, windows, manholes, etc. Similar range of work, as specified above, was accomplished in case of both hulls in Gdansk. However the second unit - *Bergensfjord* - left the Gdansk based yard in somewhat more advanced stage of technical readiness, which was especially evident from the external hull and superstructures paint coating applied.

Outfitting of *Stavangerfjord* and *Bergensfjord* in Norway includes furnishing

each of the two ships with restaurants for every taste, cafés and bars, a large tax-free shop and well-equipped facilities for courses and conferences. As the Owner assures - great entertainment - for young and old - will make the trip a very special experience.

The new ships are 170 meters long, perfectly designed in hull shape and length to handle North Sea waves and provide passengers with a smooth and stable voyage. The ships will each accommodate 1,500 passengers, offer 306 cabins (many of which will be suites) and have space for 600 cars or a smaller number in combination with larger trucks and cargo, at a deadweight of 3,900 tons.

The engine compartment in the new Fjord Line cruise ferries is designed to allow the ships to run on LNG (liquefied natural gas). Fjord Line's new cruise ferries will be equipped with fuel-efficient machinery in order to minimize emissions of harmful substances into the air and water. Bergen Group Ship Design and Bergen Group Fosen have designed the ships and Finn Falkum Hansen is the architect for the project. Hansen's previous design work has included two of the ships in the Hurtigruten fleet, *Trollfjord* and *Midnatsol*.

Stavangerfjord is expected to commence its first scheduled commercial journey in Bergen, on May 29, 2013. *Bergensfjord*, in turn, is expected to be put in service in September 2013.

With both ships on stream, Fjord Line will offer every-day departures on the Bergen - Stavanger - Hirtshals and Langesund - Hirtshals routes.

Principal characteristics

Year of construction	2012, 2013
Place of construction	Stocznia Gdansk, Bergen Group Fosen
County of registry	Denmark
Home port	Hirtshals
Gross tonnage	25 000
Length	170.00 m
Width	27.50 m
Draught	6.35 m
Operating speed	21.5 knots
Class	Det Norske Veritas

Changing industry by providing better tools for selling and sourcing

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Local business – global market

SHIPSU is a one stop shop for marine industry and because it's web-based both providers and buyers can access it from anywhere in the world through a web-browser. The service has been developed and tested by future users and it has designed and tested to work even with onboard satellite connections. It offers businesses the ability to be contacted and trade with international and national companies. For further information please contact us to find out how we can help you.

Contact:

Mikko Varjanne
SHIPSU
mikko@shipsu.com
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Firmy stale potrzebują łatwiejszych i bardziej przystępnych sposobów nawiązywania kontaktów i wymiany handlowej.

Pomoc dla dostawców

Portal internetowy gromadzi informacje o uczestnikach rynku w jednym miejscu, co pozwala na dostarczenie wiedzy o produktach i usługach bezpośrednio do największych odbiorców gospodarki morskiej. Wymiana handlowa staje się łatwiejsza, gdy firma ma możliwość ekspozycji precyzyjnych informacji o produktach i usługach.

Wiedza zgromadzona w jednym miejscu i zweryfikowani użytkownicy to bezpieczniejsze i łatwiejsze prowadzenie biznesu.

Wsparcie dla nabywców

Zdobywanie informacji o produktach i usługach związane jest z czasochłonnym poszukiwaniem kontaktów w wielu różnych miejscach i źródłach. Tymczasem dostęp do bazy wiedzy o produktach i usługach zapewniony w jednym serwisie internetowym, pozwala zaoszczędzić cenny czas, potrzebny firmie na prowadzenie normalnej działalności operacyjnej.

Biznes lokalny – rynek globalny

SHIPSU to serwis dedykowany specjalistom z branży morskiej. Oparty na sieci internetowej, umożliwi zarówno dostawcom jak i nabywcom bezpośredni dostęp z dowolnego miejsca na świecie za pomocą przeglądarki. Działanie Portalu zostało przetestowane przez jego potencjalnych użytkowników, którzy mieli możliwość pracy z systemem także poprzez łącza satelitarne. SHIPSU oferuje firmom możliwość nawiązywania kontaktów z międzynarodowymi i krajowymi firmami. W celu uzyskania szczegółowych informacji prosimy o kontakt.

Contact:

Agnieszka Diak
SHIPSU
adiak@shipsu.com
Phone: +48 58 735 65 55



SHIPSU attended Cruise Shipping Miami 2013 to attain valuable contacts with both buyers and providers of the service.

SHIPSU uczestniczyło w Cruise Shipping Miami 2013, aby uzyskać cenne kontakty zarówno z kupującymi jak i dostawcami usług.

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Fabrication of modules for oil platforms and wind farms

A steel mill

As mentioned on a previous page, Gdansk Shipyard's other activities, besides shipbuilding, will be further expanded and developed. The two major market areas, where the company intends to increase its business are wind farm towers manufacturing as well as offshore structures, such as topside modules, etc.

Among the most recent tasks Gdansk Shipyard (GS) was entrusted with is the construction of modules for offshore gas platform. Production of offshore structures is not a new job for GS. The present project involves two contracts, one for the Shipyard and one for the Chojnice division as both divisions fabricate completely different elements, although for one project.

The prefabricated steel structures will be a part of a giant oil platform on the North Sea, which is currently being modified. Apart from the modifications, completely new modules are to be assembled, and the elements manufactured in Poland have become parts of these new modules. In Gdansk, walls and decks of the total weight of almost 400 tonnes have been prepared. Chojnice division produced box structures

- prefabrication of 6 sections, and the grillage. In total, the structures supplied by Chojnice weighed 560 tonnes.

Earlier, large topsides of so called "trafo-platform", have been delivered from Gdansk Shipyard, with official ceremony of handing over the completed structure to the customer held on November 15, 2012. The "trafo-platform" topsides weighed some 850 tonnes and was among the largest one-piece structures of this kind built in Poland so far.

The wind farm Borkum Riffgrund covers the area of 35 square kilometres. Over 80 wind generators are to be placed there.

The aim of the "trafo-platform", which is a part of the farm is to collect the electricity from the farm and transmit it to land. Customers expressed their satisfaction: - *We appreciate the efforts*

of the Gdansk Shipyard to perform all activities in accordance with all very high HSE standards required for this project - said Christian Hald, Project manager from the Bladt Industries. - The trafoplatform built in Gdansk Shipyard will be a part of one of the biggest wind farms in Germany. It will produce energy allowing to supply 330,000 households in Germany with electricity.

Works on the project began in March 2012 in Chojnice. Smaller elements were prefabricated there. Next stages of the works took place in Gdansk. Owing to the new production facilities and equipment, the elements were first joined into assemblies and then into a complete structure.

The resulting topsides was 38.5m long, 16.6m wide and almost 27 m high, which correlates to a multi-story block of flats.

The structure, assembled at the quay, was sled onto a heavy-lift barge, then towed to Denmark for final outfitting at Bladt production facilities, where - among other equipment - electrical transformers have been installed.

The wind farm towers production, effected through Gdansk Shipyard's subsidiary Gdansk Shipyard Group Towers (GSG Towers) also thrives. Recently, the company acquired order for leading turbine manufacturer, the Danish company Vestas Wind A/S. The contract includes 35 wind towers fully outfitted, with a length of 94 meters and the width of the base at 4,3 m. The weight of each tower will be around 200 tons.

The towers will be part of a wind farm with a capacity of 105 MW, where each tower will have a capacity of 3 MW. The farm will be built in the Ukraine region Zaporozhye on the south eastern shores of the river Dnieper.



The "trafo-platform" from the Gdansk Shipyard has been among the largest one structures of this kind built in Poland so far.

Photo: Piotr B. Sierenczak

Safe Caledonia
accommodation rig
redelivered after extensive
refurbishment



Safe Caledonia after conversion.

As good as new!

At the turn of first and second quarters 2012, the *Safe Caledonia* accommodation rig of the market leading provider of such kind of offshore floating units, Prosafe, came to the Remontowa S.A. for a major refurbishment.

After successful upgrades and conversions of offshore platforms accomplished by Remontowa S.A. in previous years, with semi-sub accommodation unit (*Safe Bristolia*) and a jack-up (*Safe Esbjerg*) among them, Prosafe decided to have another accommodation rig rejuvenated entrusting the job to the Remontowa shipyard.

The scope of work absorbed a wide range of capable yard's trades and departments. The refurbishment of the *Safe Caledonia* carried out by the shipyard's Conversion Division, resulted in an "as good as new" rig, ready for 20 more years of operation on the UK Continental Shelf.

With, amongst others, new diesel generators, boilers, cranes, helideck, lifeboats, heating and ventilation system



PHT SUPON S.A. jest firmą z ponad **50** letnim doświadczeniem w zakresie ochrony przeciwpożarowej.

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IN HV-52-15-LA

and sewage treatment plant, the rig is presently not only more cost-efficient and reliable, but also more environmentally friendly. As part of the upgrade, old engines have been replaced with low NOx engines, thereby cutting the vessel's annual NOx emission. This has also resulted in a reduction in diesel and oil consumption, contributing to a reduced environmental impact.

At the final stage of upgrade at Gdansk based yard, the rig was docked onto Remontowa's proprietary submersible heavy-lift barge *REMLift 25 000* (ex Smit's *Giant 4* of sunk Russian nuclear submarine *Kursk* hull salvage fame). The construction of the dock-barge has been enhanced with added stability owing to side sponsons installed at Remontowa. Docking of *Safe Caledonia* was the first job of *REMLift 25 000* at Remontowa. The operation went smoothly on November 21, 2012. Lifting the offshore structure, weighing some 12 000 tons, on board the submersible barge, was mainly to enable maintenance and painting of the underwater part of *Safe Caledonia*'s hulls (pontoons) and columns.

After works had accomplished with *Safe Caledonia* docked up onboard *REMLift 25 000*, the reverse operation took

place. However, as largest floating docks of Remontowa were busy and towing them away (with ships under repairs and maintenance) to make the dock deep available for *Safe Caledonia* undocking would be inconvenient, it was decided that the rig would be towed out of the yard and the inner port of Gdansk first and then undocked from *REMLift 25 000* in the protected, but deep waters of the outer Gdansk port (Northern Port). The tow and Remontowa's first undocking of the semi-sub from the heavy-lift submersible barge was performed smoothly during January 26-27, 2013. This provides a good example of added docking flexibility gained by Remontowa with its new asset - *REMLift 25 000*, which might be available also for other uses.

Following completion of extensive and wide-ranging refurbishment at Remontowa, the *Safe Caledonia* accommodation rig has undergone a series of sea trials on the Gdansk Bay and anchorages of the port of Gdańsk, followed by a tow to the Northern Sea by *Stril Commander* AHTS, which had already assisted the rig during sea trials.

After recent conversion at Remontowa SA, the platform has a maximum of 454

beds, 9 offices and 78 workstations, a high level of accommodation and a fully articulated, automated gangway. The *Safe Caledonia* has DP 2 station keeping abilities and can also deploy a 10-point wire mooring pattern, managed by a POSMOOR thruster assisted online mooring system. She is able to serve the most demanding charters in all geographical areas. The refurbishment has not only enhanced the vessel's facilities as an accommodation rig, but has also extend the structural life time of the vessel with 20 years.

Within the last period, Remontowa S.A. has serviced, repaired or upgraded 12 offshore platforms of various types (self-elevating units and semi-sub, accommodation and workshop, as well as drilling units). The shipyard is also active in other sectors of offshore market, performing such works as conversions of tankers into shuttle tankers with bow loading systems and to FPSO vessels, conversions of offshore support vessels (to diving support and other types / purposes), conversions and upgrades of seismic vessels, repairs and maintenance of any kind of offshore ships, etc.

Photo: Remontowa SA



The rig docked by *REMLift 25 000*.



Cermar INDUSTRY
est. 1993

Cermar Industry Sp. z o.o. was established in 1993. At the beginning, when the seat was in Trzebież, we produced motor fishermen boats to fish at the Baltic Sea and at the Szczecin Lagoon. At the same time, we also produced and delivered elements of deck equipment for shipbuilding. In the year 2000 we expanded our activity and, to simplify the delivery of our goods, we moved our production both with our infrastructure, to Szczecin.

In the year 2003 we put to our offer, steel construction offshore type, building and bridge construction, furnace construction for power and steel industry. In order to produce larger elements produced by Cermar, in the same year we moved our production to the production halls which are located at quayside, which enables us to use the sea transport to deliver our products to clients all over the world. Our managerial and technical staff consists of highly qualified engineers with various specializations and long-lasting experience in the implementation of engineering projects. This enables development of the cooperation with our contractors in the country, and above all abroad.

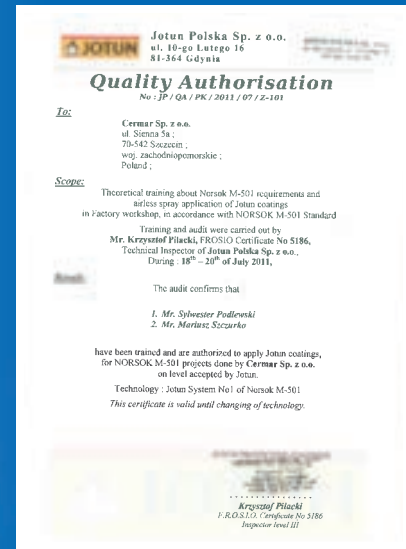
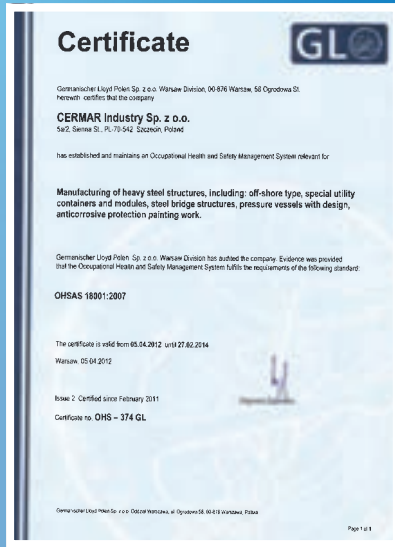
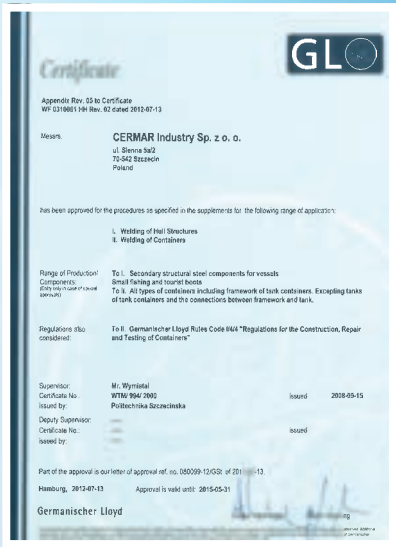
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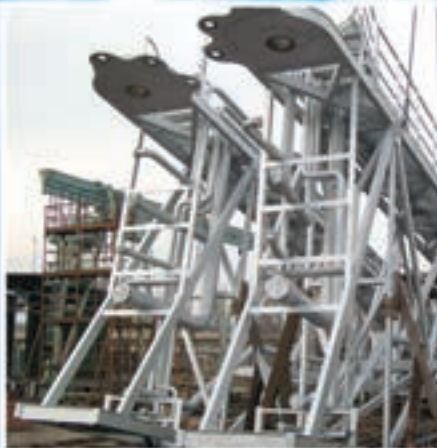
- Integrated Quality Management System 90001:2008 certified by Germanisher Lloyd;
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- authorities to draw up declaration of compliance CE GSI SLV according to standards EN ISO 1090-, 1
- welding quality authorisation according to the Codes and Regulations written in Germanisher Lloyd;
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- - penetration: PN-EN 571-1; PN-EN 1289; ISO 345-2; AR-PT-EN Magnetic: PN-EN 1290; PN-EN 1291; AR-MT-EN Radiograph: PN-EN 1435; PN-EN 12517; AR-RT-EN Ultrasonic: PN-EN 1717; PN-EN 1712; AR-UT-EN.





Main core staff in the workshop is highly skilled, proofed by obtained top skills certifications issued by Polish Registry of Ships and Germanischer Lloyd registry institutions.





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- Container module 4X8X8,8m – 20 tons,
- Burners for drilling platforms 28m, 20 ton each,
- Pipe crane for platforms with 25 m span,
- Series of rotary foundations - 85 ton,
- Series of underwater hatchways 30 ton,
- Construction of airport buildings, ferry ramps, railway ramp towers - 1060 ton,
- Construction of road steel bridge - 270 ton,
- Steel hall construction - 60 ton,
- Offshore frames for construction protection - 210 ton and offshore containers - 250 ton,
- Straw combustion plant line - 42 ton,
- Furnace for aluminum heat treatment - 37 ton.



Corsetto II Transport platform



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*Shuttle tanker
Siri Knutsen has become
the world's largest
Well Stimulation Vessel*



Siri Knutsen during conversion into a WSV at Remontowa S.A.

A new type of conversion

Earlier this year, shuttle tanker *Siri Knutsen* was prepared for a pilot project that she would carry out for Statoil and partners on the Snorre offshore oilfield. In fact, she was converted into a new role by Gdansk Shipyard Remontowa S.A.

In result of works carried out at Remontowa, *Siri Knutsen* has become what might be called the world's largest well stimulation vessel (WSV) so far, while retaining its shuttle tanker capabilities.

The ship's task is producing fresh water, to which silicate is added, followed by water injection into the oil reservoir. The objective of this process is to increase the rate of oil recovery from the field.

Due to this challenging task, as many as 19 various major items of equipment, mainly components of well stimulation system, have been installed onboard *Siri Knutsen* during conversion at Remontowa S.A. in addition to new dedicated piping and electrical systems. The well stimulation equipment installed includes facilities for the production of fresh water, equipment for mixing and addition of chemicals and high pressure pumps. Furthermore, a new accommodation module was installed (aft of existing main accommodation block) to house the well stimulation system control

room and quarters for additional crew of 18, as well as a new helideck amidships. Tunnel thruster has been replaced with retractable azimuthing unit and the engine room expanded to enhance the ship's dynamic positioning system (upgrade to DP2 class).

Knutsen NYK Offshore Tankers AS (KNOT, headquartered in Haugesund, Norway) owned and managed *Siri Knutsen* tonnages have changed slightly in result of the conversion due to installation of additional volume compartments and weights of new equipment.

The ship, previously described as crude oil / shuttle tanker, arrived to Remontowa SA for its recent conversion as a 2004, Naval Gijon (Spain) built, DnV classed (1A1 Taker for OIL ESP BOW, LOADING E0 DYNPOS-AUT) ship with the following principal particulars: length over all - 186.96 m, breadth - 27.40 m, depth - 16.90 m, design draft - 10.20 (moulded), deadweight - 35 181 t, gross tonnage - 24 242, speed - 15 knots, main engine - 1 × 8580 kW, MAN B&W, aux. engines - 3 × 1280 kW, MAN B&W Holeby.



Fig.: Knutsen OAS

This is how WST *Siri Knutsen* will look like after conversion at Remontowa SA.

It is probably noteworthy that recent *Siri Knutsen* conversion has been already the second similar operation on this ship carried out by Remontowa SA. The first conversion

- from product and chemical tanker into a bow loading shuttle tanker - took place in 2004.

PBS

***Siri Knutsen* moored at Remontowa SA - view from the aft of the ship.**



Photo: Piotr B. Sierenczak

REMONTOWA MARINE DESIGN & CONSULTING

EXPECTS A VERY GOOD YEAR

INTRODUCTION

Remontowa Marine Design & Consulting (RMDC) is a large and experienced Polish ship and offshore design office employing more than 130 engineers. Till the end of 2011 the company was mainly rendering services to shipyards within Remontowa Group. Year 2012 was the first when orders from outside of the Group became really significant. This reflects the company's strategy to go worldwide and aim towards large projects for offshore and wind farm industries. In the same time RMDC shall continue to support Remontowa Shipbuilding S.A.(RSB) in as far as possible complete designs of vessels up to 120 m in length and Remontowa Shiprepair Yard S.A.(RSY) in detailed engineering of large conversions of offshore rigs and vessels. On the other hand RMDC intends to promote strongly its own concept designs of ships and conversions. For the time being RMDC is focusing its attention to the most promising Scandinavian, UK, German and Brazilian markets.

CURRENTLY REALIZED PROJECTS

LNG Double Ended Ferry SKS165

In February 2012 RSB and Norled, Norway signed a contract for two SKS165 type double ended car passenger ferries according to LMG Marin concept design. Soon after RMDC received from RSB an order for a part of basic design as well as complete detailed design while from LMG Marin an order for a part of classification design including complete basic design of electrical systems. The hull of prototype vessel was launched in the first quarter of 2013. The electric energy for the main propulsion will be provided by four gen sets with all en-



Length, o.a.	123.20 m
Breadth,	mld 17.65 m
Passengers	550
Personal cars	165
Trucks	18
Service Speed	16 kts
+1A1 Car Ferry B R4 E0 Gas Fuelled (NOR) NMD Trade Area 2	

gines working exclusively on LNG. In emergency two of the gen sets can also be supplied from CNG tanks.

The design is the third consecutive LNG double ended ferry type built by RSB and designed partly or completely by RMDC. The track record of RSB as a builder and RMDC as a designer is imposing and includes a dozen double ended and bow loaded ferries delivered since year 1999 what indicates that RSB is the unquestioned market leader.

Drilling Ship ESPADON 200 EAS

The most important project started by RMDC in 2012 was the design of a drilling ship. In April 2012 the Norwegian office LMG Marin signed a license agreement with Brazilian shipyard Estaleiro Atlantico Sul, Suape (EAS) for the preparation and delivery of a complete design of drilling vessel according to its concept design ESPADON 200 EAS. As LMG Marin did not have enough capacity to offer complete design it agreed even before this event to join forces with RMDC. In consequence LMG Marin ordered from the office in Gdansk complete detailed design of marine systems as well as basic and detailed design of electrical systems. Later on RMDC received orders for further parts of basic design, procurement assistance, detailed design of utility systems and for a part of drilling systems. In total it can be estimated that RMDC will be responsible for more than 70 per cent of manhours needed to design the vessel. The project is scheduled to take four years and seven units worth \$ 500 Mio each are to be built by EAS for Sete, partly owned by Petrobras. The current status is that steel cutting of the prototype unit has been already started.

Participation in such a large offshore design is an extremely valuable experience and gives a track record being a springboard for even larger offshore projects like FPSOs or offshore rigs. It also opens the door to the lucrative and large Brazilian market.

Length, o.a.	202.20 m
Breadth, mld	40.00 m
Depth	19.50 m
Draught,	max 12.00 m
Gen Sets	6 x 7200 kW

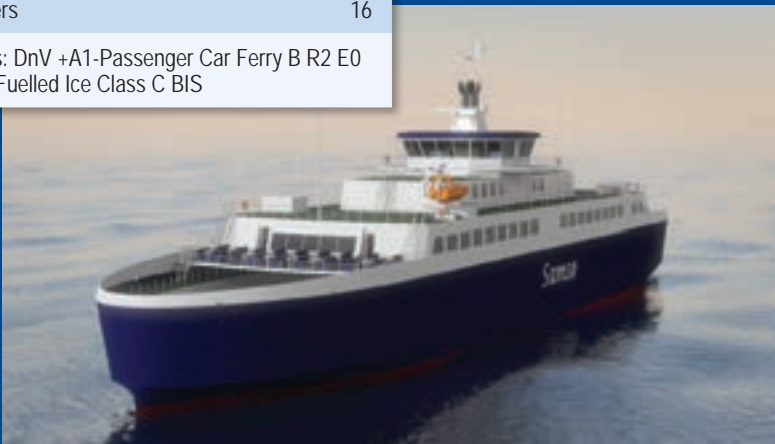
Class: ABS+1A1 Drillship,
+AMS, +ACCU,+DPS-DS,
CRC, HELIDK,
UWILD



NEW RMDC CONCEPT DESIGNS

Out of the numerous concept designs developed recently by RMDC and being in different stages of negotiations with potential shipowners one should mention the following most interesting ones:

Length, o.a.	99.91 m
Breadth, mld	18.50 m
Trial Speed	16 kts
Passengers in Summer/Winter	600/405
Personal Cars	160
Trailers	16
Class: DnV +A1-Passenger Car Ferry B R2 E0 Gas Fuelled Ice Class C BIS	



LNG Double Ended Ferry SAMSØ FÆRGE

In March 2013 RSB received a contract from Samsø Commune, Denmark an order for one open LNG Double End Ferry SAMSØ FÆRGE. The basic and detailed design was entrusted to RMDC. The ferry will be the first LNG driven vessel navigating the Danish domestic waters. The idea reflects the “green profile” of the tourist attractive Samsø Island. Propulsion will be ensured by four electrically driven azimuth rudder propellers. The main power station will consist of four gen sets with dual fuel LNG/MGO engines.

This order is reflecting the extensive experience of RSB in building and RMDC in designing double ended ferries for Norwegian shipowners. Moreover RSB is among only seven yards in the World which have experience in building LNG fuelled ships. All four types of such vessels built by RSB were partly or completely designed by RMDC.

Seismic Support Vessel

Large seismic vessels are very expensive in operation and thus usually remain at sea as long as possible. Therefore their crews are often changed at sea. Same refers to supply of fuel, oil, provisions and water. The ship dimensions and speed are to be matched to the size and shape of the serviced seismic vessel. Maneuverability and propulsion redundancy are to be high to enable operation in heavy seas and when the main seismic vessel is still advancing. Till today ineffective old vessels were used for this purpose. Therefore a special ship design labeled RMDC 8657 with double skin, two mechanically powered c.p. propellers, one bow thruster and relatively high crew capacity was prepared and agreed with a well known Scandinavian owner.



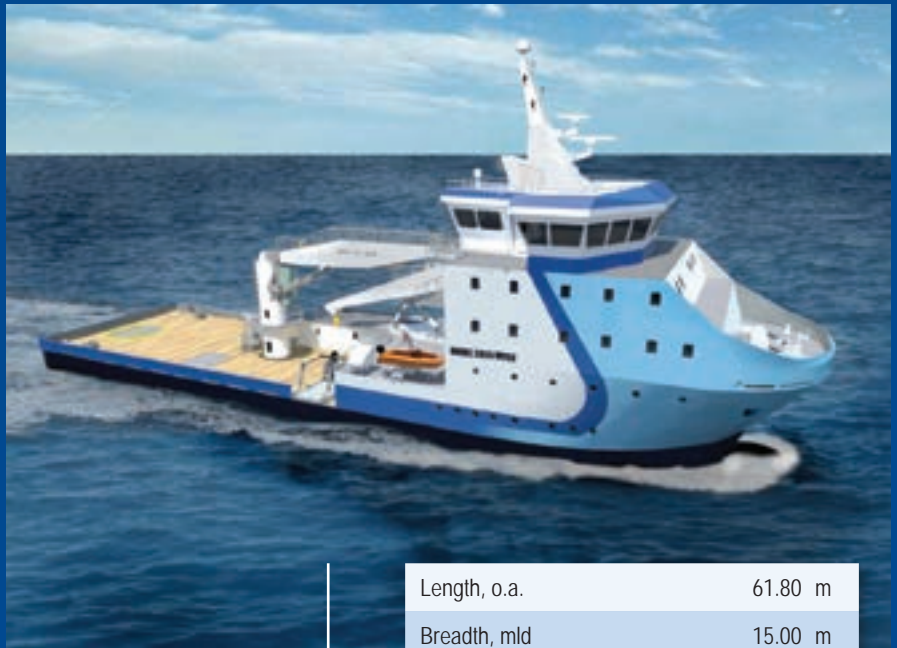
Length, o.a.	57.00 m
Breadth, mld	12.50 m
Deadweight	1500 t
Trial Speed	13.7 kns
Bollard Pull	50 t
Work Deck Area	300 m ²
HFO	880 m ³
MDO	440 m ³
Cargo Fresh Water	125 m ³
Complement	8+37
Class: ABS + 1A1, (E), Offshore Support Vessel, +AMS +ACCU	

Wind Farm Maintenance Vessel

The Wind Farm Maintenance Vessel design RMDC2855 is the most compact of several similar designs developed by the Gdansk office during the last two years. Currently operated wind farm fields are situated close to the shore and thus maintenance of wind turbines can still be easily performed using small often aluminum craft. Nevertheless major wind farm operators are already ensured themselves rights to build wind farms as far as 200 NM from shore. RMDC believes that when building these farms would start new types of vessels will urgently be needed.

The described design was conceived in order to fulfill the following conditions:

- ♦ Safe gangway allowing transfer of maintenance personnel from vessel to wind turbine and back,
- ♦ Comfortable accommodation for large number of specialists, Elastic power plant providing low fuel consumption during transit between wind turbines,
- ♦ Good maneuverability allowing safe operation of crew handling system.



Length, o.a.	61.80 m
Breadth, mld	15.00 m
Work Deck area	270 m ²
Deadweight	1500 t
Crew	10
Special Crew	50
Class: DnV +1A1 Offshore Service Vessel SF E0 DYNPOS-AUTR, SPS Code	



Length, o.a.	91.20 m
Breadth, mld	23.00 m
Deck area 10 t/m ²	600 m ²
Bollard Pull	360 t
Triple Drum AHT Winch:	
One AH drum	500 t
Two towing drums	130 t
Deadweight	6850 t

Class: DnV +1A1 Tug SF E0 DYNPOS-AUTR
Fire Fighter 1 Ice -1C SPS Code

Anchor Handling/Towing Vessel

The AHT360 T BP design bearing RMDC 2881 project No is a continuation of the previous extremely successful own but much smaller design of which 23 units have been built by RSB and delivered to Tidewater and several other world known shipowners. The new vessel is much more powerful because its bollard pull is to be as much as 360 T. With double skin in the way of fuel tanks the vessel is also eco-friendly. Additional features include external fire fighting and oil spill response capacity.

For further information please visit our web site www.remontowa-mdc.com.pl



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- 2. Assembly, maintenance and overhaul of stationary water, water-foam and carbon dioxide firefighting devices (SUG) installed on ships and ashore.**
- 3. Halon System replacement by CO2 Fire Extinguishing System or Hi-Fog systems on ships. SUPON offers Design, Supply, Installing, Commissioning and Testing of CO2 Fire Extinguishing System, which will replace Halon and approval certificate by the class.**
- 4. Assembly and maintenance of fire-signaling system.**
- 5. Overhaul of oxygen and air respirators together with filling up tanks.**

We have got the approbation of the following for rendering of our services: PRS, LR, BV, DNV, ABS, RMRS, GL, NKK, RINA.

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*Oil and water
cooler*

We have more than 60. years of expertise, experience and a long tradition of presence in the shipbuilding market worldwide. The company was established in 1945. However, we have been involved in the maritime industry since the beginning of the 60's. Since that time we have been improving our abilities in heat exchangers manufacturing based on either our own or our clients' documentation.

We have been awarded with certificates of compliance with both a **Quality Management System** and an **Environmental Management System**. Since 1997 we have been certified by Germanischer Lloyd, having **fulfilled and implemented** the ISO 9001:2008 standard requirements. In 2013, the same Classification Society has certified us for the ISO 14001:2004 standard. Our commitment to health and safety

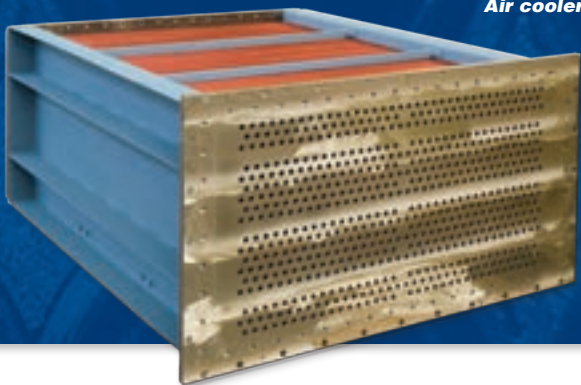
Oil heater



Shell and tube heat exchanger



Air cooler



Economisers – series ECO



of our employees makes **our company put every effort** to ensure that its operations are safe to the employees and the surrounding environment alike.

We have been certified by leading classification societies, enjoying collaboration with UDT (Polish Office of Technical Inspection), Det Norske Veritas, Russian Maritime Register of Shipping, Lloyd Register, Bureau Veritas and Germanischer Lloyd.

We offer high quality **automated welding, including orbital boiler tube to heat exchanger tube-sheet welding** with ESAB and Kempi welders.

We guarantee a high quality standard and competitive prices of the products offered. Our stock of specialized machine tools allows us to manufacture all our products using **top quality materials**.

We have highly skilled and qualified staff making every effort to meet our Customer's expectations.

We offer the following products:

- tube and shell heat exchangers and inserts
- oil and water coolers
- oil, water and fuel heaters
- condensers, evaporators
- pressure vessels
- steel structures
- dry bulk tanks
- air coolers

Having **considerable experience** in manufacturing various pressure devices, and enjoying the support of **our own design office** alongside cooperation with a few renowned engineering companies, we also offer **units and tailor-made solutions** suited to individual requirements of our Customers.

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Pressure vessels





Commandor Calum on stream

Conversion and upgrade of the former Royal Navy's auxiliary service ship was completed early March by Gdynia based EPG Shipyard.

After a series of sea trials *Kommandor Calum* was redelivered to her owners early March 2013, however the ship remained at Gdynia based yard, owned by Energomontaż Północ Gdynia, for final fitting, by the Owners themselves, of moveable research equipment. After final, Owner's, sea trials, the ship eventually left Gdynia on March 27.

EPG Shipyard of Gdynia, Poland has been contracted by Hays Ships of Aberdeen, UK, to carry out modification and repair on one of its geophysical survey ships (with the contract arranged by Marine Marketing International, of the UK.). However the operator of newly upgraded *Kommandor Calum*, in long term charter, is UK based Calegeo (the ship will be operated by its division - Calesurvey).

The LR-classed *Kommandor Calum*, formerly named RMAS *Salmaid* (A187) and based in Royal Navy base in Portsmouth, was built in 1986 by Hall Russel Ltd. shipyard as one of a series of mooring and salvage ships of the "Sal" class.

Basic scope of modification works performed at EPG shipyard consisted of:

- removal of bow horns and forecastle rearrangement,
- removal of old deck equipment and replacement it with new one including 140 t crane,
- mounting of stern thruster in addition to existing bow thruster to achieve DP ability,
- mounting of new moonpool on a fore deck,
- upgrading of navigation systems,
- raising of superstructure by additional deck with fully equipped accommodations,
- rearrangement of existing accommodations aft superstructure,
- repair in the scope of fifth special survey.

Following completion of conversion and upgrade, the ship has become a geophysical research vessel, also able to perform some basic seismic survey.

After the conversion at EPG shipyard, the ship emerged as a robust multi-role survey vessel designed for efficient survey capability. It features extensive and spacious dedicated deck, labs and accommodation. The ship is equipped with A-frames and large crane. It also provides dedicated streaming and sampling deck facilities, integral compressors and storage, three client staterooms and conference room, high speed internet, phone and Sat-TV and last but not least leisure centre comprising a cinema, large gymnasium, sauna, gaming and internet rooms.

As a new, significant addition to Calegeo fleet *Kommandor Calum* will contribute to the capabilities of a geotechnical focused marine survey and contracting company able to provide total site investigation services to the offshore energy and submarine telecommunications markets.

Calegeo with partners provides project management, marine and vessel superintendency, navigation, seabed mapping and geotechnical investigation & engineering. The company operates a DP2 geotechnical vessels fleet capable of providing borehole, PCPT and core sampling, with expertise also covering initial specification, final data processing, sample analysis, testing and geotechnical engineering.

Kommandor Calum - principal particulars

call sign GAAM

IMO 8402010

built 1986, rebuilt / converted 2012

flag: British

Classification Lloyds Register +100A1 +LMC

length 76.00 m

width 15.00 m

draught 4.20 m

forward working deck 200 sq.m.

aft working decks 250 sq.m.

processing Room 50 sq.m.

wet Lab 50 sq.m.

winch Room 40 sq.m.

moonpool 1m x 1m.

upper hold 400 cu. m, lower 375 cu.m.

conference room, cinema, gymnasium, sauna

accommodation with total 49 berths, ensuite,
fully air-conditioned, including 5 staterooms,
22 single berth cabins and 10 double berth cabins**machinery and maneuvering:**2 x 1490 kW Ruston diesels, single 4 blade CPP,
single spade rudder, 1 x azimuth thruster forward (GillJet 700 kW),
1 x tunnel thruster aft (400 kW),
4 x diesel generators (400 kW, 440 V / 60 Hz)**main handling Equipment:**forward crane 10 Te @ 14 m, steamer booms 3 Te SWL,
aft davits frame 3 Te SWL;**stern handling equipment:** sidescan winch x 2,
heavy lift winch, auxiliary lift winch;**below deck equipment:**

forward A-frame 10Te SWL, CPT umbilical winch, VC umbilical winch

navigation equipment:

dual veripos DGPS, Meridian gyro, Coda F180, ROVINS INS;

bathymetric equipment:

Reson 8160 (3000 m), R2Sonic 2024 (500 m), Simrad EA400;

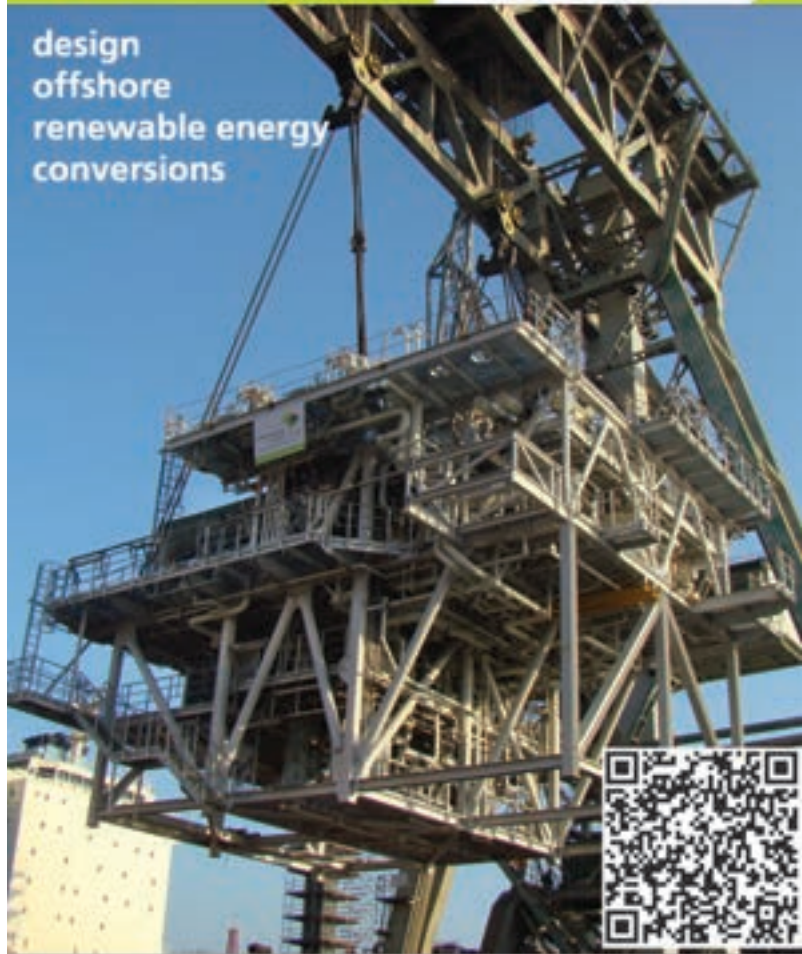
geophysical equipment:Edgetech 4200 SSS, magnetometr Geometrix 882,
9 element pinger array, mini airgun, subtow profiler,
96+ trace Seal Seismic package, source 150 cu - 4 x 40 cu;**geotechnical equipment:** CPT 3-20 m, up to 3000 m W.D.,
vibrocoring 3-6m, piston-gravity to 10 m,**environment research equipment:**

Double Day & Van Veen Grab, Seabug towed camera

ROV support capability: TMS Tiger to Panther

Energomontaz-Polnoc Gdynia Ltd. was established in 1953 and Gdynia Branch was then called Great Construction Team No 4. At the beginning our Gdynia Branch was significantly involved in construction, installation and maintenance of various projects, mainly within the scope of power generation industry. The turn of 80s and 90s was a time of profound economic and political transformation that changed the company's face. Energomontaz-Polnoc expanded the service offer to marine sector, i.e. ports, offshore, shipbuilding and shiprepair industry. Now the company operates in the offshore steel structures manufacturing industry, including steel structures and pipelines for repairs, outfitting and building of ships. The EPG Shipyard has at its disposal a dry dock of 240 x 40 x 8 m with a gantry crane of 500 t capacity among other facilities.

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VARIETY OF INTERESTING DESIGN AND ENGINEERING OFFERINGS FROM

GSM DESIGN GROUP
WWW.GSMDG.COM



GSM Design Group was established in 1999. Now they have a significant potential with 55 experienced specialists - naval architects and marine engineers specialized in various disciplines of ship and offshore technology. Company facilities are based in two design offices - in Pruszcz Gdanski and Szczecin.

The main activity of the group is supporting shipyards as well as leading international naval architecture and marine engineering consulting offices in designing both small and large ships and other floating objects. Highly committed and motivated engineers team does complete the work on project with documentation delivery. The company cooperates with shipyards during ship construction and offers support in solving a

variety of technical and production process challenges.

For some 12 years GSM Design Group closely cooperates with renowned Papenburg based Meyer Werft, for which the Poland based company develops mainly cruise ships documentation. Another important market for GSM Design Group, utilizing its ships and offshore structures documentation is Norwegian offshore oil & gas related shipbuilding and fabrication industry.

GSM Design Group offer also includes designs and engineering services for smaller, but highly innovative ships, such as special aluminum craft - catamarans, electrical drive ferries, diving support bases, feeding barges for salmon farms, etc.

Recently GSM Design Group has developed interesting concept for a 24-metre catamaran with capability of salmon intake at the fish farming facility and carriage of fresh fish in slush ice in special containers.

The ship has space foreseen available for arranging initial fish processing plant or a laboratory. The vessel is to be equipped with 20 t SWL multipurpose deck crane, which, besides shipboard cargo handling operations may be utilized also in other operations, eg. on a fish farm facility.

In line with the ship's significant power demand, it is designed with flexible diesel-electric propulsion and power plant. The concept design was developed for one of the World's largest salmon producers.



length overall	23.95 m
breadth	12.60 m
depth to main deck amidships	4.40 m
max. draft amidships (SWL)	2.50 m
max. speed	12 knots



GSM Design Group has also participated in structural design and engineering of another innovative, interesting vessels type, namely newest projects from Fjellstrand AS. This Norwegian Shipyard ordered in GSM Design Group documentation for two very interesting vessels.

One of those is Windserver, which comes in two size variations (overall length of 25, or 35 m) and is a unique concept trimaran suitable for servicing wind farms in rough conditions.

Slender side hulls with integrated motion damping plates provide stability yet significant roll and pitch reduction. The large fore wing provides significant vertical inertia forces and motion damping. The hull thus behaves like a considerably larger vessel, both during transit and in service condition. Careful design of water lines and reserve buoyancy allows for a large freeboard which gives a smooth ride through the waves. The entire superstructure can be configured just about anywhere along the large deck area.

Depending on superstructure location, a wind turbine gangway can be located on both fore and aft deck. This innovative design with built-in flexibility, featuring unconventional hull shape as well as non-typical internal subdivision and structure put special demands on structural design engineers successfully met by GSM Design Group team.

Second of Fjellstrand project is world's first double ended roll-on roll-off batteries ferry.

GSM Design Group team participated in design and engineering of numerous interesting, often widely trade press publicized vessels. However the company is active not only in the marine sectors. GSM Design Group is also engaged in design and engineering work for Oil & Gas Offshore industry and meets challenges in wide ranging mechanical design.

Each of GSM Design Group designs may be suited and adapted for special applications and owners' requirements during agreeing a common concept for the construction on order. Owing to this floating units developed by GSM Design Group fulfill all the requirements as regards functionality meeting the expectations and needed to accomplish plans and tasks envisaged by owners and operators of GSM Design Group developed vessels and structures.

CAR FERRY POWERED BY ELECTRIC DRIVE SYSTEM

length overall 80m
breadth 20,8 m
Aluminium hull and superstructure
120 Car units PBE- 360 passengers
2 x 450 kW Azimuth thrusters with feathering propellers
1 MWh battery package



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