

SPECIAL ISSUE

# poland at SEA

maritime magazine

REVIEW OF POLISH MARITIME INDUSTRY



## Ships worthy of your trust!

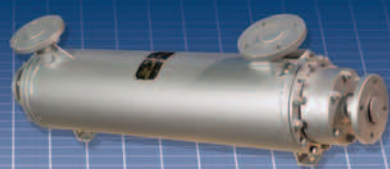
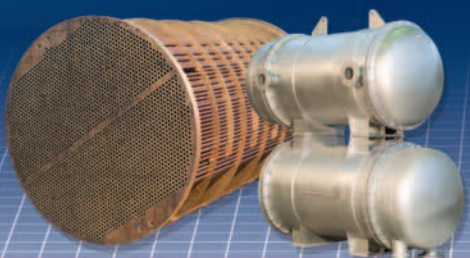
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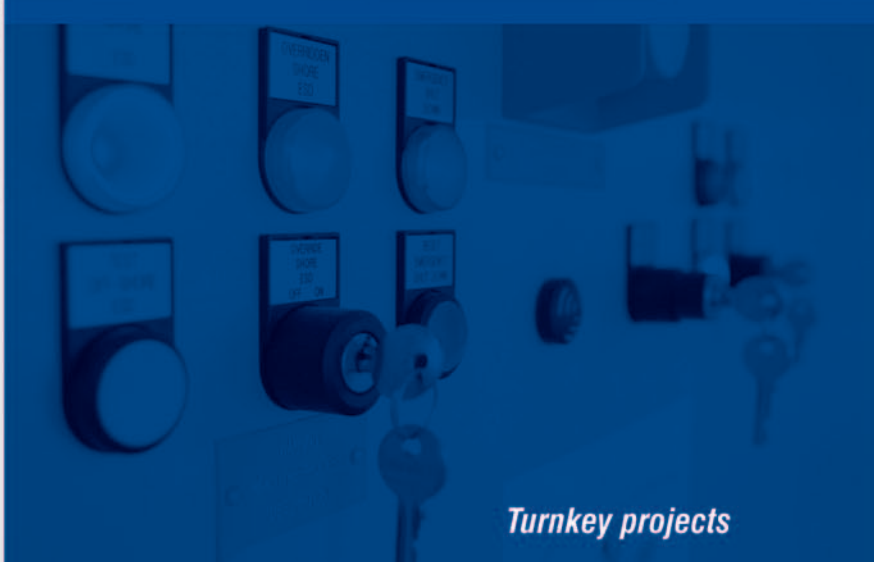
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# Poland

## – worthy of your trust!

Polish marine industry has always enjoyed its strong position within the global maritime market due to its capability of building high quality ships of various kinds for renowned and high-demanding Owners. However, in the last two years, Polish shipyards have been among the European ones affected by the recent economic crisis in the shipping market, characterized by an almost complete lack of new orders, major problems in financing existing ones, overcapacity and, finally, the collapse and closures of two state – owned major production shipyards in Gdynia and Szczecin.

When the crisis is still all around, for many business entities it means the end of their business activity. For others the same crisis means a lot of opportunities, new chances to take advantage of, and new areas to explore. The latter usually relates to those companies which constantly seek new opportunities, regardless of the crisis. Sometimes, however, harsh economic circumstances may become an additional fuel for development of new innovative services. Both ship-owners and shipyards have to deal with this paradox, which also applies to the marine sector in Poland, where shipyards (and equipment manufacturers) are trying to adjust their capabilities to new market demands, doing that independently and following their own way.

On the one hand, there are renowned and well established shipyards with diversified activities. Remontowa SA, celebrating its 60th anniversary this year, is a good example. The company, which offers ship repairs and conversions, has recently been exceptionally active in converting offshore platforms of all types (semisub and jack-up, drilling rigs as well as accommodation floatels and workshop units) and turning tankers into shuttle tankers and FPSO (see details inside the issue).

Its newbuilding – arm Remontowa Shipbuilding SA, presently the only manufacturer of completely equipped ships in Poland, concentrates its efforts on offering high added value medium-sized, specialized vessels destined for the offshore industry (see a recently built one pictured on the front cover) as well as on building technologically advanced LNG – powered car-passenger ferries.



Gdansk Shipyard, along with a production of hulls and partly outfitted ships, intends to become a huge wind tower plant in Europe with annual production of 300 units. Also a small company Crist Shipyard has found its market niche – building specialized and highly profitable jack up units for installing offshore wind farms.

Managers of the companies mentioned above have understood very well that they can strike better deals with ship-owners operating in the traditionally profitable offshore oil and gas industry or seek their chances in new promising areas such as the offshore wind energy sector.

On the other hand, there are also other small private – owned companies which invariably offer building of partially outfitted hauls. They are still attractive to owners thanks to their skilled workforce generating relatively lower labour costs, which translates into acceptable prices. But there are also shipyards that belong to the State, still waiting to be privatised.

Anyway, the year 2011 and the beginning of 2012 showed signs of market recovery.

In this issue we have chosen to describe some examples of projects, products and services offered by shipyards in Poland, which – as we believe – are the most interesting and representative ones of the companies themselves and of the entire sector. We hope you will find the information helpful and see that shipyards and other marine companies in Poland are worthy of your trust!

**Grzegorz Landowski - The Editor**

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*Two versatile PSV vessels  
for Ezra Holdings delivered*

Photo: Remontowa Shipbuilding S.A.



# Enter of the Lion!

Gdansk - based newbuilding yard REMONTOWA Shipbuilding SA, delivered two exceptionally versatile platform supply vessels. According to the Owner's statement – these units have been built with “the latest leading edge technology”.

According to the Owner's explanation: *Lewek* means lion, Like Singapore's reputation as a 'lion city', it captures our characteristics of strength, vitality and trust.

On March 29, 2012 in Gdansk, REMONTOWA Shipbuilding SA, together with the Owners, hosted the christening ceremony of their newly built Platform Supply Vessel *Lewek Andes*.

The role of Godmother was performed by Ms. Cheryl Yap, one of the financial directors of the ship Operator.

Traditional bottle of champagne was broken not against ship's side this time, but rather against the strengthened structure of towing and anchor handling winch housing, while the Owner's (including Mr. Lionel Lee, managing director of Ezra Holdings Ltd.) and Shipyard representatives and partners, suppliers, subcontractors, along with guests, media and Polish Navy Orchestra, were gathered on a spacious (measuring some 900 sq m) work and cargo deck of the PSV.

## Leading-edge technology...

*Lewek Andes*, is the first of a pair of modern, versatile Platform Supply Vessels (featuring also anchor handling capability) to be operated by Ezra. As the operating arm of Ezra (EMAS) themselves has described those units - the two new PSV's have been built with “the latest leading edge technology”.

Construction of two new exceptionally versatile platform supply vessels (combining their major supply duties



**The christening ceremony of Lewek Andes. A “family picture” with the guests and representatives of the Shipyard and the Owner.**

with ocean towage and anchor handling capabilities) for Ezra group - Singapore based owners and operators is based on Polish design by MMC. The MMC 887 CP design (yard no B852) vessels were entirely constructed at REMONTOWA Shipbuilding SA to Remontowa's order for Ezra company. The first steel cutting was performed in September last year, while the keel laying for the two ships took place in December 2010. The first of those two units - *Lewek Andes* - was delivered in April 2012, while the second one - *Lewek Aquarius* - was delivered in June 2012.

## Design from Poland

Those events follow Remontowa entering into a contract with Lewek Shipping Pte Ltd., a subsidiary of Ezra Holdings of Singapore, for the construction and delivery of two Multipurpose Platform Supply Vessels of the MMC 887 CP design (with design supplied by Poland based MMC Ship Design & Marine Consulting Ltd).

The vessels have been designed and built to meet the highest operation demands with the most cost efficient solutions, while conforming to most recent

MARPOL environmental requirements and according to class requirements under supervision of American Bureau of Shipping.

## PSV with additional capabilities

The versatile ships will serve predominantly as supply vessels, however they also have anchor handling and ocean towage capabilities. The vessels fulfill general supply service needs of contemporary offshore industry (between shore base, drilling sites and other ships) such as carriage of dry bulks, general supplies and liquid mud, general cargo, pipes on the open deck as well as special products like methanol. Versatile equipment set and other facilities and features make the vessels very well suited to other specific tasks and charters, thus increasing its market value.

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 units are 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. However, the main engines can provide additional directly via shaft lines to the CP propellers when extra power is required. DP2 (IMO Class 2 dynamic positioning system) gives adequate station keeping properties.

## Environmentally friendly

The new MPSV have been 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.

The ships are operated, under Singapore flag, by EMAS, which is a recognized leading global offshore contractor providing construction, marine, production and well intervention services. EMAS is the operating brand of Ezra Holdings Limited. The company operates globally with offices in 16 locations across five continents spanning Africa, the Americas, Asia Pacific and Europe.

### A breakthrough for the Company

As we learned from Mr. Lionel Lee, Ezra's Managing Director, the first Ezra's ship built at REMONTOWA Shipbuilding is a breakthrough for company's offshore support fleet as the most modern unit and first Ezra's newbuilding (as the Singapore based offshore operator has been relying on second hand vessels so far).

*Lewek Andes* after its delivery strengthened Ezra's Offshore Support

division operations offshore Africa. That division provides offshore support vessels for charter to service customers in the offshore oil and gas industry throughout the oil field lifecycle, spanning exploration, construction, production and decommissioning stages. The Offshore Support division manages and operates a diversified range of vessels including medium and large-sized anchor handling, towing and supply (AHTS) vessels, anchor handling tugs (AHT) and fast crew utility vessels. The division also provides ship management services for both the Group's vessels and third party vessels.

### 9 PSV vessels under construction

REMONTOWA Group has a vast experience in newbuildings, conversions and repairs for the offshore industry. In the years 2003-2010 REMONTOWA Shipbuilding delivered some 25 AHTS vessels for such renowned owners as Tidewater, Edison Chouest and others, as well as 10 advanced *offshore* evacuation units for the Caspian Sea.

Presently, the shipyard is also involved in construction of similar PSV ships for renowned American Owners – Edison Chouest Offshore (6 units) and GulfMark Offshore (3 units).

On the bridge of *Lewek Andes*.



Photo: Piotr B. Stenczak

# REMONTOWA

## SHIPBUILDING S.A.

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- multipurpose vessels:
  - hydrographic ships,
  - patrol boats,
  - multi-function buoy tenders,
  - research vessels,
  - tugs
- fishing vessels;
- navy ships;



# The largest PSV units in our fleet

On the occasion of ships delivery we took opportunity to talk to Mr Lionel Lee, managing director of Ezra Holdings Ltd.

**- Please, be so kind as to tell a few words about your company, its area of operation and size of offshore fleet.**

- We operate globally, on the waters around five continents. We operate close to 85 ships today. Of course, Marine Division is one of our largest ones and has Platform Supply Vessels, Anchor Handling Tug / Supply Vessels. Our ships range from anything around 50 T bollard pull all the way to 400 T bollard pull and for PSV's we have units from 3000 dwt all the way to 5200 dwt, with

the latter represented by newly delivered ships from Remontowa Shipbuilding.

**- What is the significance for Ezra behind the addition of those ships to your fleet?**

- First, there are the largest PSV units in the whole fleet. With 5200 dwt its carrying capacity is almost double of the largest in our current PSV fleet. So obviously she will be capable do to a lot more, comparing to the rest in the fleet. She is also ready to take installation of heli-deck. She has a stern roller and winch, giving her more flexibility.



Photo: Piotr B. Starenczak

**- What about propulsion?**

- On this ship we have a hybrid propulsion. We put an anchor handling winch. This is one of the few first PSV's which can do in excess of 100 T bollard pull, and that's why the ship has a hybrid propulsion - suitable for varying modes of operation (as a PSV and as an anchor-handler) with varied power requirements. Such propulsion configuration gives you more flexibility.

**Lewek Aquarius was delivered in June, 2012.**



Photo: Remontowa Shipbuilding S.A.

**Lewek Andes was delivered in April, 2012.**





*Destined for tough environment in the North...***Landegode during sea trials.**

# Innovative

## LNG fuelled ferries

Following the winning of a 10 year concession contract for two state supported ferry routes, the leading Norwegian local ferry operator Torghatten Nord AS has gone shopping to European yards, to order four new ferries with LNG propulsion. The yard of choice that emerged from tendering process was REMONTOWA Group.

In March REMONTOWA Shipbuilding announced signing of new contracts including the one covering construction of two modern double ended car-passenger ferries for the shipping company in Norway. Recently contracted ferries of latest generation, mentioned in detail on page 12 will be world's first vessels powered by LNG fuel only.

### Construction is underway...

Meanwhile construction of another series of state-of-the-art LNG fuelled ferries (yard numbers B 612 / 1-4) continues at REMONTOWA Shipbuilding SA. In August 2010 Norwegian transport company Torghatten Nord won the contract from State 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).

The contract runs for ten years from 2013. 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 four ships will operate with LNG fuelled main propulsion plants.

The new ferries will be employed in high traffic density Norwegian waters, but what is probably more important - they will be operated in difficult weather conditions beyond the polar circle, serving the local inhabitants, tourists and the industry. Operating in such conditions defines high demands to the vessels. They will each take 80 up to 120 personal cars onboard and easily accommodate 390 passengers.

The service speeds in two variations of the design (with main engines of varied power installed) will be 12 up to 19 knots.

### Different areas of operation

The designs comes in two versions. The ferries will differ externally very slightly. Basic difference is the underwater body shape and the propulsion configuration chosen. The choice, determined by naval architects from REMONTOWA, basing on computational methods and towing tank tests, reflects the differing areas of operation of the first and second pair of ferries.

The first two ferries (*Landegode* and *Vaerøy*) are destined basically for the open sea route between Bodo and Lofoten islands (on the routes Bodø-Røst-



Photo: Piotr B. Stareńczak

**Norwegian Prime Minister Jens Stoltenberg starting NC steel plate cutting machine at REMONTOWA Shipbuilding during first steel cutting for the fourth unit of the LMG 120 type LNG powered ferries series for Torghatten Nord under construction at REMONTOWA Shipbuilding.**

Vårøy-Moskenes and Bodø-Moskenes), while the remaining two units (*Barøy* and *Lodingen*) are to operate between Tysfjord and Hinnøya island (Bognes-Lodingen). The ferries will also differ with roll compensation systems used. The first two will have active system (fin stabilizers) while the other two will be fitted with passive anti-roll tanks system.

Vessel's concept and first phase of documentation was created as a result of cooperation Norwegian design office LMG and polish REMONTOWA Marine Design & Consulting Ltd. Optimizing of the hull was completed using specialized computer programs and towing tank tests in Gdansk Ship Design and Research Centre - Ship Hydromechanics Division.

## Technological leap forward

On November 2, 2011, the first of the series - LNG-fuelled ferry *Landegode*, to operate on the Bodo - Lofoten Islands service, touched the water for the first time. Spectacular sideways launching of a 96 m long hull weighing almost 2000 tons, marked the start of a new era in Norwegian shipowner's history and en-

sures that the company will soon offer a radically cleaner travel for passengers going to and from Lofoten according to Bjørn Laksforsmo - CEO, Torghatten Nord AS. - *This is a technological leap forward for us and the region* - added Laksforsmo, interviewed on the occasion of launching of the first ship.

All the four Vestfjord ferries will be operational in 2013. This first unit - *Landegode* - has already been outfitted and accomplished its sea trials, as we went to press. She was to be delivered in summer, 2012. Meanwhile, *Landegode* launching was followed by similar operations for the remaining units from the series.

The second ferry, to be named *Vaerøy* has also been already launched and outfitted along with the first unit. It was launched on January 17, 2012 as the first ship to be launched by REMONTOWA in 2012. It is already the sixth vessel built in REMONTOWA Shipbuilding for the same Owners (Torghatten).

## Guests from Norway

The most recent launching for this series of vessels took place on May 11. The

launched ferry - *Lodingen*, like previous ones, will meet restrictive ecological rules regarding the emission of harmful substances to atmosphere which is very important feature.

In the launching of the last of four LNG-fueled lofotenferries participated a lot of Guests from Norway - three mayors of the municipalities to be served, representatives from the Norwegian Road Administration, as well as the supplier of LNG-gas, and the bank.

As mentioned above, she along with its "sister - ship" *Barøy* (previously launched from an assembly plate) is to operate in the Inner Vestfjord. All four units of the series are to be delivered to Owners by the Winter 2012/2013.

## An interesting time...

The series of four modern gas ferries for one of the biggest Norwegian Owner - Torghatten Nord AS - confirms Shipyard's position on the market of the highly advanced vessels conforming to stringent ecological standards.

According to Bjørn Laksforsmo - CEO, Torghatten Nord AS: - *Operating in these harsh conditions sets high demands to the vessels, and thereby to the operator and the yard. Undertaking a tender in the wonderful Lofoten-area also set high demands to the environmental impact, and with LNG extracted from the Barents sea and provided by Barents naturgass we aim to reduce the CO2-emissions by 25% and NOX-emissions by as much as 90%! Combined with the latest engine technology, the emissions of greenhouse-gases will also be reduced. Choosing Remontowa Shipbuilding S.A. as a builder for such a technological leap was natural. The shipyard has a history of building advanced vessels with top-class performance - and during the latest years also several LNG-fueled vessels. We would be happy to continue this cooperation hopefully in the near future.*

Norwegian team supervising the construction in Gdansk includes future chief engineer of the Remontowa built LNG fuelled ferry Steinar Lekanger and project leader / manager Jan Egil Sletteng. - *There has been an interesting time. And very nice. Poles are friendly and the country emerges not as a country with poor economy* - said Mr. Sletteng interviewed by Norwegian Radio.

*Modern ferries designed  
for public transport  
in Norwegian fjords*



Photo: Remontowa Shipbuilding S.A.

**Vengsøy, one of the two larger ferries, the SKS 21 design.**

# Heavy duty service

During second half of 2011, REMONTOWA Shipbuilding S.A. delivered four small fjord ferries for operation in Norway. The ships have been placed into service in Tromsø region.

The ferries, in two different designs, have been built for one of the largest Norwegian Owners - Torghatten Nord AS. Two pairs of ships have been designed

and built with destination to serve public maritime transport in Tromsø region.

Ferry named *Rebbenesøy* was destined for the Mikkelvik - Bromnes (Rebbenesøy island) route, *Uløytind* sails the Rotsund-Havnes-Klauvnes and Troms schedule, *Vengsøy* was put on Belvik-Vengsøy and Småge-Orten-Finnøy-Sandøy services and *Kvaløy* was destined for Utasundsambandet / Møre og Romsdal and Småge - Orten - Finnøy - Sandøy - Ona line.

The two designs are SKS 21 and SKS 16 (yard designation B 610 and B 611 respectively).

The two larger ferries, of SKS 21 design, namely *Kvaløy* (B 611/2) and

*Vengsøy* (B 611/1) were launched early and late April 2011.

At a time, the SKS 21, 40.6 m long and 12.4 m wide ferry with 3 m draught is able to carry 21 cars and 146 passengers. Crew of the ferry consists just of three members due to high level of automation applied onboard. This allows for reduction of operational costs. The 900 kW main propulsion power (provided by Caterpillar C25 749kW engine) allows the ship to achieve service speed of 12 knots. The auxiliary engine installed is the Volvo D9 unit rated at 200 kW.

The ferry complies with the Norwegian Maritime Directorates (NMD) and Det Norske Veritas (DNV) rules and regulations.

The smaller SKS 16 design ferries are each 35.9 m long, 10.05 m wide, with 4.0 m draught design, propelled by two Volvo D16 main engines rated at 442 kW, each driving a Schottel azimuthing propulsion thruster and reaching the service speed of 12 knots. These ships are able to carry 16 personal cars and up to 48 passengers, with the crew of 3 persons. Auxiliary propulsion is provided by a single Volvo D7 type, 130 kW power engine.

The ferry complies with the Norwegian Maritime Directorates (NMD) and Det Norske Veritas (DNV) rules and regulations.

The two designs of small ferries were conceived in cooperation between the Norwegian ship design and consulting company NSK AS and the Remontowa Marine Design & Consulting Sp. z o.o.



Photo: Jakub Bogucki/PotrabiMorski.pl

**Uløytind, the smaller ferry of the SKS 16 design.**

*World's first LNG only fuelled ferries*

# The green leap forward



Fig. Norled

Remontowa Shipbuilding SA has been entrusted with a new task of construction and delivery of two modern, LNG fuelled ferries.

One of the most recent contracts acquired by REMONTOWA Shipbuilding confirms the leading position of Remontowa Group in Europe in 50 to 130 m ferries construction, and as one of the major European builders of small and medium size ferries, as well as one of the leaders on the newbuilding market covering double-ended, fjord and short route coastal ferries.

To improve competitiveness, Norwegian local and regional ferry routes operating shipping companies have to embark on to investment programs. Another Norwegian ferry operator, that has recently decided to upgrade and refresh their fleet with REMONTOWA is Norled. The Owner entrusted Gdansk - based yard with task of construction and delivery of two modern, LNG fuelled ferries. Contracted ships of the latest generation are said to be the world's first vessels powered only by LNG fuel. Such solution is expected to significantly reduce NO<sub>x</sub> and SO<sub>x</sub> emissions to the atmosphere over hitherto known ship propulsion configurations.

Ships will support public transport along the coast of Norway. The pair of ships is to be deployed on a busy Stavanger - Tau route from the autumn of 2013, as the delivery of the vessels is scheduled for the third quarter of 2013. The construction of the first ship from the series commenced on July 25, 2012.

The 165 car capacity vessels will replace smaller 110-car capacity vessels (with the new Norled ferries in place, the capacity of the Tau-service will increase 30 percent on a weekly basis). A higher service speed is expected to reduce the crossing time by 5 minutes, while at the same time emissions will be drastically reduced by opting for LNG.

The ships are designed with particular focus on safe and quick entry and exit for passengers, universal design and more efficient loading and unloading of vehicles from deck. As LNG propulsion technology develops (and rules and regulations follow), the vessels will no longer have any diesel gen-set for the sake of redundancy but, for the first

time, are to be operated totally on gas. That means they will be the first 100 % natural gas-powered ferries.

It is worth to note that these ships will belong to the largest ones in their class of "green ships" to be operated in Norway. An additional advantage will be low operational cost of newbuilds due to reduced number of the crew and consumption of green and cost competitive fuel.

It is also worth mentioning that REMONTOWA Group has already been a supplier of newbuildings to Norled (indirectly) in the past. Double-ended ferries, such as *Finnøy* (built in 1999, delivered to Rogaland Trafikkselskap A/S), *Foldøy* (built in 1999 for Rogaland Trafikkselskap AS), *Sjernerøy* (built 1999 for Rogaland Trafikkselskap AS), *Folkestad* (built in 2006, for Nor-Ferjer Volda AS), after several company reorganisations and mergers, through ownership or operation of Stavangerske AS / Stavangerske Finnøysambandet AS, HSD Sjø, etc. (and after Tide Sjø was renamed Norled at the beginning of 2012) eventually became part of the Norled fleet.



Photo: Norled

**Folkestad built at REMONTOWA in 2006.**

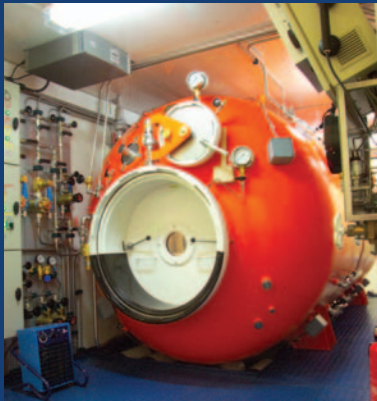


# Innovative thinking



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**Hyperbaric chamber**

solutions, materials and equipment to make our product even more mobile and useful.

Hyperbaric decompression chambers are not PBUCH's only popular product, however. As one of the leading manufacturers of onboard HVAC and refrigeration equipment, it not only produces entire water-cooling, compressor, condenser and heat exchange systems but also the components required for their operation.

Whilst there are standardised specifications, the company is also able to manufacture any of these individually to meet requests. Research and development has been a crucial component in making sure this happens, a process undertaken

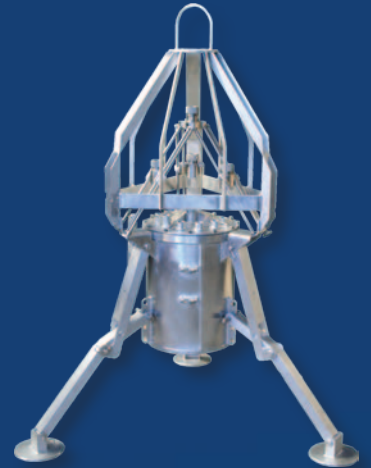


**Chiller unit for air-conditioning system on board.**

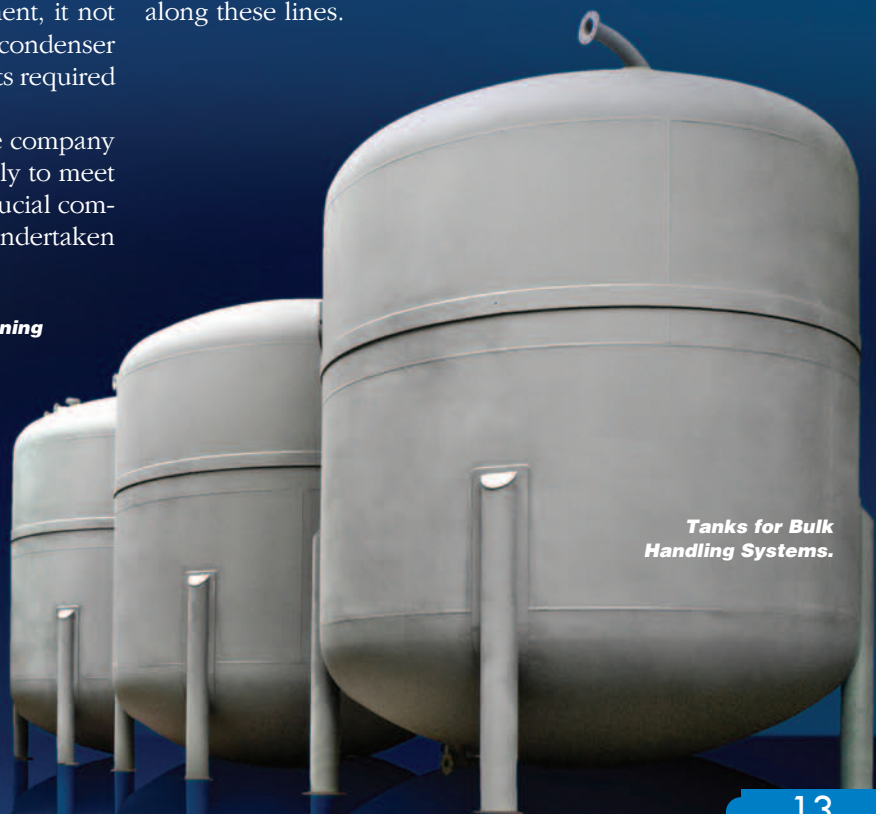
with the help of research universities and technical colleges from around Poland. An example could be the loading stations and cleaning modules for bulk handling systems, used in off-shore industry, military and scientific research projects like "Module for physical multidimensional observation and under-water recognition".

We continue to gain additional certifications and approvals in order to expand our manufacturing capabilities. For example, we recently gained welding approval for aluminium, duplex steel. In production of heat exchangers we use different materials: brass, copper, cupronickel, alubrass, bimetal and aluminium. We are implementing at present titanium welding procedures. For the equipment for the petrochemical industry we use high quality steel, which complies with NACE MR0175 standard.

We are always trying to find out what is necessary for the market and ensure our equipment changes according to these demands, which are then reinforced by certified approvals. This is the basis for PBUCH's business and we will continue along these lines.



**Module for physical multidimensional observation and under-water recognition.**



**Tanks for Bulk Handling Systems.**

*Fjord Line's Stavangerfjord launched in Gdansk*

Fig. Fjord Line

# The pleasure of cruising...

**Computer graphics presenting new cruise ferries built at Gdansk Shipyard for Norwegian Owners.**

The first of Fjord Line's two new ferries, to be christened Stavangerfjord, was launched at the Stocznia Gdansk (Gdansk Shipyard) from the B1 slipway on April 12, 2012. A few days after launching the tow of the ship to Bergen Group Fosen for interior fitting and finishing, commenced.

In Shipowner's marketing nomenclature, aimed mainly at passengers, the ship is a cruise ferry, owing to superb interiors outfitting standard foreseen and wide range of amenities to be available onboard. From technical point of view - with significant ro-ro lane capacity and modest passenger number, the ship appears to be a ro-pax.

The traditional starting point for a new ship, known as laying the keel, has been celebrated for the first of Fjord Line's two new cruise ferries with a ceremony at the shipyard in Gdansk on Wednesday 23 March, 2011. At the same time, steel work has started on the other cruise ferry.

## Partly outfitted hull

The launch marks the completion of partly outfitted hull by Gdansk Shipyard.

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. The ship launched around mid-April in Gdańsk has also a helideck arranged on the aft upper deck.

The launch was witnessed by around two thousand shipyard workers and others who have contributed to the creation of the ship's hull as well as residents of Gdansk. Before the ship glided out from the slip, the shipyard's director Andrzej Stokłosa gave a short speech, followed by Fjord Line's CEO Ingvald Fardal. Fardal thanked the shipyard's management and workers for their efforts.

- For Fjord Line the launch of m.s. Stavangerfjord marks an important milestone in the achievement of our goal to offer travelers two modern and well-appointed cruise ferries with daily departures between Bergen, Stavanger and Hirtshals, and between Hirtshals and Langesund - said Fardal.

## Final touch in Norway

The launch of the almost 7000 tonne hull took less than a minute. After around a week it started the journey from Poland to Norway, along the coast to the shipyard in Rissa on the Fosen peninsula. There, workers representing a variety of disciplines (including experienced shipyard workers from Poland employed by Bergen Group in BMV Bergen yard, at Fosen yard and other facilities) will outfit and finish the modern ship. This will include furnishing the ship 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. After delivery and commissioning with Fjord Line's crew, *Stavangerfjord* can be put into regular service.

**Bergensfjord, the next in line...**

As *Stavangerfjord's* hull has taken shape at the shipyard in Gdansk, steel work has started on the second of the two new cruise ferries. This ship will be called *Bergensfjord*.

The new ships will be 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) in addition to conventional diesel fuel.

- *Stavangerfjord is a modern vessel, adapted for implementing a pro-ecological solutions. A midship is equipped with a special room dedicated for installation of LNG propulsion* - explains project manager Piotr Kaszubowski. - *Usage of such fuel is a substantial factor in reducing environmental pollution.*

**Eco – friendly ferries**

An LNG-powered ship of this size would be a ground-breaking achievement. This technology can be available soon after the ship is put in service but is dependent on LNG terminals being installed in the ports. Converting these ferries to LNG is now being considered as part of an EU project supporting the use of natural gas as fuel in ships. With

PRINCIPAL CHARACTERISTICS	
Year of construction	2012
Place of construction	Stocznia Gdansk, Bergen Group Fosen
County of registry	Denmark
Home port	Hirtshals
Passenger capacity	1 500
Number of cabins	306
Berths	1 188
No. of Crew	70-100
Cargo capacity	3 900 tons
Vehicle capacity	600
Gross tonnage	25 000
Length	170.00 m
Width	27.50 m
Draught	6.35 m
Operating speed	21.5 knots
Restaurants / Cafès, bars	5/4
Conference rooms	6
Tax free shops	1
Playroom	2
Casino	1
Decks	10
Engines	4
Main propulsion combined power	30 000 HP
Class	Det Norske Veritas
Sailingtime Bergen - Hirtshals	17 hours
Sailingtime Stavanger - Hirtshals	10 hours
Sailingtime Langesund - Hirtshals	4,5 hours

liquefied natural gas, emissions of nitrogen dioxide could be reduced by up to 90 percent and CO<sub>2</sub> emissions could be reduced by 25 percent.

Even without LNG, 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. Through an agreement with Rolls-Royce Marine we have obtained access to an advanced propeller system that optimizes the ships' propulsion with low fuel consumption and no loss of maneuverability. We have contracted with the coating supplier Hempel to treat the bottom and keel of the ships with a product that is hard, offers low resistance and causes no negative environmental effects. Models of the new cruise ferries have been tested for the effect of wind and waves at MARINTEK with excellent results.

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*.



Partly equipped hull of Stavangerfjord launched at Gdansk.

*For offshore wind turbines  
installation and maintenance...*



# HLJV

## *Innovation*

**HLJV Innovation built at Polish Crist shipyard.**

German flag was hoisted on a ship newly built in Gdańsk, on 31 July 2012. Quite innovative, adequately named *Innovation*, has been recently built at Gdynia facilities of Polish shipyard Crist, headquartered in Gdańsk. The heavy-lift jack-up vessel is one of the most advanced and complex ships built in Poland so far.

The ship (newbuilding no NB 142), after two series of sea trials held between July 5 and 31, was formally delivered on August 1, 2012, and a few days later left Poland for Bremerhaven, where it is planned to be christened early September.

The unique vessel is owned by HGO Innovation Shipowner B.V., belonging to Hochtief Solutions and GeoSea, part of DEME Group. The ship, worth over EUR 200 m, is operated by HGO InfraSea Solutions consortium. During most intense period of construction as many as 1000 persons were working on a ship daily.

The first deployment of the unit will be the construction of the Global Tech I Offshore Wind Farm in German sector of the North Sea, where also the first unit built by Crist, jack-up barge *Thor*, will be employed.

### Built to fill the gap...

With its two powerful partners - Hochtief Solutions and GeoSea, a company of the Belgian DEME Group - HGO InfraSea Solutions has committed itself to provide the heavy-lift jack-up vessels, said to be the world's most powerful. The offshore market is booming, whereas the number of adequate installation vessels is insufficient. German-Belgian consortium intends to close this gap with heavy-lift jack-up vessel *Innovation* - the vessel to be used to build and maintain offshore wind farms as well as offshore oil and gas facilities.

With its high-performance 1500 - tonne crane and its high-load capacity of up to 8000 tonnes, *Innovation* enables safe loading and installation of 6 MW+ wind turbines with overall heights of more than 120 metres, as well as heavy foundations in water depths of up to 65 metres. The all-in-one solution - loading, transporting and installing - makes the vessel self-sufficient and offshore installations more efficient and cost effective.

### Strong competition

*Innovation* is a significant achievement for Crist shipyard, for which the majority of production have been partly outfitted hulls of fishing vessels and offshore support vessels so far. However, it is worth noting, that also in the area of these rare vessels - large HLJV for offshore wind turbine installation and maintenance, European yards are not



the pioneers and are heavily exposed to competition from the Far Eastern yards, including South Korean and Chinese ones. The world's first purpose built jack-up wind turbine installation vessel - *MPI Resolution* (ex *Mayflower Resolution*) was built in China, in 2003 at Shanhaiguan Shipbuilding Industry Co., Ltd (CSIC) in Qinhuangdao.

The Gdynia built vessel is probably the most powerful purpose build jack-up wind turbine installation vessel (with crane SWL reaching 1500 tonnes), but not the largest one, as some media suggest (*Innovation* is shorter by 14 m and smaller in width by 7 m comparing to *Pacific Orca* delivered to Swire Blue Ocean A/S by South Korean Samsung Heavy Industries just a few days earlier).

Significant role in designing of this complex ship has been played by Polish naval architects and marine engineers, mainly from Gdansk based StoGda Ship Design & Engineering Ltd., delivering detailed engineering design, class documentation and workshop drawings. The conceptual and initial design came from Hamburg based Overdick.

### International cooperation

The construction of HLJV *Innovation* at Polish yard was a truly international effort. The four huge lattice legs, worth USD 22,5 m, have been delivered to Crist from Maritime Industrial Services (MIS) shipyard in Sharjah, UAE. Complex jacking system, designed by US based offshore technology specialist Friede & Goldman, Ltd. was manufactured by Siemens.

Integrated package of main propulsion (including four azimuthing thrusters), ship's electric power plant, power distribution and integrated ship automation system) was delivered by a consortium of Caterpillar (MaK), Schottel and SAM Electronics. Electric propulsion motors came from VEM. Cranes installed onboard *Innovation*, including the large, 1500 tonne SWL offshore crane, were supplied by Liebherr. Liveboats, rescue (MOB) boats and davits was supplied from Noreq (which has one of its production plants in Poland). Galley equipment came from Metos.

Some of the shipboard systems and items of equipment onboard come from Polish manufacturers, just to mention watertight bulkheads doors and mooring winches and windlasses from Gda-

### INNOVATION - PRINCIPAL CHARACTERISTICS

HGO Infra Sea Solutions GmbH & Co. KG	
IMO no.	9603453
type of vessel	heavy-lift jack-up vessel, self-propelled
<b>hull main dimensions:</b>	
length overall	147.50 m
breadth	42.00 m
depth	11.00 m
<b>legs:</b>	
number of legs	4
leg cross section	lattice structure
jacking system	rack and pinion
jacking speed	up to 1 m/min
<b>operational conditions:</b>	
water depth for jacking up	up to 50 m / up to 65 m (with leg extension)
significant wave height	up to 2.00 m for jacking and DP
wind speed for crane operation	up to 18 m/s
operating draft (max)	7,33 m
DP capability	vessel complying with DP2 requirements
accommodation	up to 100 persons incl. crew; cabins can be used as single or double cabin; vessel is pre-fitted for 180 persons on board
helideck	D = 20.88 m, suitable for Sikorsky S92 with a MTOW of 12.8 t
<b>thrusters and propulsion:</b>	
vessel speed	up to 12 knots
<b>crane:</b>	
category	crane around the leg
capacity	SWL 1500 t @ 31.5 m
<b>cargo load:</b>	
cargo capacity	up to 8000 t
sample scenarios	up to 7 WTG / 6 MW+ up to 12 WTG / 3 MW+
2 jackets up to 1,000 t and piles up to 1,300 t	
4 jackets up to 600 t and piles up to 1,600 t	
7 monopiles up to 500 t and 7 transition pieces up to 300 t	

Fig.: Hochtief Solutions



**Vidar currently under construction at Crist shipyard, for planned delivery in 2013.**

nsk based Hydroster or windows from Bohamet.

### Vidar under construction

Hochtief seems to be satisfied with Crist performance and delivery. Earlier this year it was announced that yet another unit, after *Thor* and *Innovation*, would be built in Poland for Hochtief needs. Hochtief Solutions has commissioned the construction of a further heavy-lift jack-up vessel from the Crist shipyard in Poland for the installation of offshore wind farms. The vessel, dubbed *Vidar* is to start operating in 2013 to meet the huge demand for special-purpose equipment in this booming market.

The *Vidar* will be Hochtief's fourth heavy-duty craft, following its near-sister

vessel, the *Innovation*, and the *Odin* and *Thor* jack-up platforms. It will be used for the company's own offshore construction contracts and will also be chartered out, similarly to *Innovation*. Rainer Eichholz, a member of the Hochtief Solutions Executive Board, says: - *We are banking on the move to alternative energy sources and accommodating market players' huge demand with our special-purpose vessel.*

Like Hochtief's other heavy-duty equipment, the new special-purpose jack-up vessel will also speed up installation and servicing times for the latest generation of offshore power plants. The *Vidar's* main features will be a 1200 tonne crane, a loading capacity of up to 6500 tonnes, a powerful engine allowing speeds of up to 12 knots, and the

ability to work in water depths of up to 50 meters. These properties make the *Vidar* one of the most powerful lifting vessels in Northern Europe - according to Hochtief's press release.

The financing of the vessel is by means of an operate-lease structure with a subsidiary of Santander acting as the lessor, and with the involvement of KfW IPEX Bank, Norddeutsche Landesbank, the Spanish CaixaBank, and Bankhaus Lampe.

Like the other heavy-duty members of the fleet, the *Vidar* will be built at the Crist shipyard in Gdynia, Poland.

Parallel to this order, Hochtief Solutions has commissioned the construction of three large work pontoons.

**PioSta, rel**



Photo: Piotr B. Staronczak

**With its high-performance 1500-tonne crane the ship enables safe loading and installation of 6 MW+ wind turbines...**



CONFERENCE AND EXHIBITION  
**OFFSHORE**  
10-11.10.2012 hotel Sheraton, Sopot



## Offshore wind power in Poland

Statistics show that wind power is one of the most popular methods of generating clean, green energy. Across Europe at the end of 2011 wind farms generated almost 97 GW capacity. Almost 4 GW came from offshore wind farms. 53 offshore farms existing at the end of 2011 produced a total of almost 14 TWh of electricity, which allowed to cover 0.4% of energy consumption in the European Union. Experts estimate the market of offshore wind energy will have reached the value of 60 billion Euros by 2020. Currently, this sector generates around 41 thousand jobs – according to estimates, an additional 150 thousand jobs can be created. Offshore wind energy sector is one of the fastest growing markets in the world. Can Poland benefit from this trend?

## Offshore – a chance for Poland

Poland has one of the most significant technical potential in offshore wind energy in the Baltic. Maritime Institute in Gdansk has estimated that the total surface area, where offshore wind

farms can be located in Poland, covers approximately 3,590 sq m, which corresponds to the technical potential of about 35 GW! Even after taking into account economic conditions and on that basis reducing its size to 20 GW, it is a huge potential!

Despite the investors' great interest no offshore wind farm operates in Poland. However, it is estimated that by 2020 an investment generating approximately 1 GW will be completed. To date, there were no appropriate conditions for investment in the energy sector – the situation changed last year, when the Polish law was adapted to the actual conditions of investment.

Offshore wind power can be significant and an alternative solution in discussing power industry in Poland. We are a country that has a significant production base – the development of marine energy is a great opportunity to revitalize the industry and create additional jobs. Examples from other European countries, notably Germany, Denmark and the UK, indicate that not only can the offshore wind power contribute increasing the generation of power from renewable sources, but also

provides a major impetus to the development of innovative industries and services, particularly in seaside regions.

Numerous advantages of offshore wind power, technology and opportunities it creates for the Polish industry will be discussed during the 1<sup>st</sup> Offshore Conference and Exhibition, organized by the Polish Wind Energy Association, in cooperation with the Polish Offshore Wind Energy Society. The Offshore Conference and Exhibition will be held on 10-11 October 2012 in the Sheraton Hotel in Sopot. The Offshore Conference and Exhibition is an opportunity to meet key people associated with offshore wind power industry across Europe. The organizers would like to invite you to this event!



For more details please visit  
[www.offshore.psew.pl](http://www.offshore.psew.pl)



**The first modern production line for the wind towers made in Gdansk, opened late 2010, was arranged in the part of the largest production hall in Middle-Eastern Europe (65 000 sq m under one roof) formerly utilized mainly for shipbuilding production.**

*Gdansk Shipyard intends to become a huge wind tower plant in Europe*

## Winds of change

**Gdańsk Shipyard (Stocznia Gdańsk) is a large Polish, Gdansk - based shipyard, internationally famed as a birthplace of Solidarity (Solidarność) free trade unions and movement.**

In its history the shipyard has built well over 1000 ocean-going units of various types. The company has recently been very active in the highly specialised ships, mainly for the offshore sector. Since the privatization of the yard (2008), almost twenty such units (partly outfitted hulls) have been built, including PSV's, DSV's, seismic research vessels and others. The company produces other kinds of vessels as well (gas carriers, passenger/car ferries) and steel structures, such as crane jibs and booms, tanks, chimneys and pipelines, and structural elements of large steel constructions, e.g. bridges, roads and stadiums.

Wind towers for renewable energy production set a new direction of the company's development. A new entity - GSG Towers - was established to strengthen and develop new market direction at Gdansk Shipyard. In November 2010, the most modern production line in Poland in this area was opened in Gdansk Shipyard, especially to meet the requirements of the wind towers production sector.

The first production line, mentioned above, may deliver 100 towers per year, both on and offshore type. The construction of the wind power station sections requires very precise workmanship and perfect coating protection, as the wind

tower has to support overloads depending on the weather condition. Inside it has to fit all the installations and a staircase or lift system allowing service access to the turbine.

This production line is arranged in the largest production hall in Middle-Eastern Europe (65 000 sq m under one roof) - production and assembly can be carried out irrespective of weather conditions. Gdansk yard's steel processing capacity in the facility exceeds 150,000 tonnes per year. Within less than one business year in the sector of renewable energy sources (RES) GSG Towers managed to sign framework agreements with key manufacturers of turbines. Thanks to those contracts GSG Towers has a guaranteed order book for the coming years.

On 6<sup>th</sup> of October 2011, GSG Towers and Budimex have signed contract for the construction of the wind tower factory hall, which will be constructed on the grounds of the Gdańsk Shipyard. GSG Towers will be responsible for the production of masts. Both companies - Gdansk Shipyard and GSG Towers belong to one capital group - Gdansk Shipyard Group.

*- This will be not only the largest, but also unique factory for wind towers in Poland - said Andrzej Stokłosa, the President of Gdansk Shipyard - This contract and the factory are the consecutive points in our business plan - as the next stage of increasing the wind towers production capacity to about 300 units per year.*

The facility with an area of 20 thousand sq m, which is planned to start at the beginning of 2013 will be located opposite the existing prefabrication hall, where masts for wind turbines, as well as ships and steel structures are already being manufactured. It will be equipped with most modern ecological solutions, such as systems preventing penetration of harmful substances into the environment.

Wind energy market in Poland as well as other countries of Central - Eastern Europe has high growth in perspective thanks to the support of the EU Directive, according to which 15% of the energy produced in Poland by 2020 must come from renewable sources. Such strong growth is also expected in the offshore wind farms energy production. Therefore, the new factory will be adjusted to produce not only the land towers (onshore), but also the marine ones (offshore).

**rel, PioSta**

*Safe Caledonia at "Remontowa"  
for an extensive upgrade*

Photo: Piotr B. Stenczak



# 10<sup>th</sup> offshore rig

**Safe Caledonia arrived  
at Remontowa SA  
on April, 28<sup>th</sup> 2012.**

# welcomed!

One of the highlights of the previous year at Gdansk Shiprepair Yard "Remontowa" SA, was hosting and servicing four offshore rigs at a time, which made unique gathering, not to be seen at any Baltic repair yard ever before. Recently the company has been busy with other kinds of ships working for offshore industry and another offshore platform again. This time it is an extensive modification and upgrade of semi-submersible accommodation and service platform.

The reason for the arrival of Prosafe operated *Safe Caledonia* in Gdansk based yard on 29th of April, being towed by *BB Troll* AHTS, is refurbishment that will not only enhance the vessel's facilities as an accommodation rig, but will also extend the structural life time of the vessel with another 20 years. As explained by Mike Duddy, Project Manager, in Prosafe's corporate magazine "Prosafe Now", flotel *Safe Caledonia*

has been towed to the "Remontowa" yard for a major refurbishment scheduled to take well over half a year, including sea trials.

### The shipyard busy with preparations

The scope of work is extensive and involves a wide range of capable yard's trades and departments.

Even before *Safe Caledonia* was towed down the Gdansk harbour channel to the Yard, "Remontowa" had begun steelwork - constructing deck plates that were known to have to be inserted. The deck store/workshop, anchor bolsters and helideck supports were also underway prior to her arrival. This is all in an effort to reduce our time in the yard.

What is known before arrival of the mobile offshore unit at the yard



**In late March 2011, four off-shore units dominated the shipyard's landscape. In the picture from left to right: Safe Bristolia, WilHunter (ex. Arctic IV), Atlantic Rotterdam (jack-up) and WilPhoenix (ex. Arctic II).**

was that the main deck would need 40 tonnes of steel renewal, and pipework and paint in the pontoons are only in a "fair" condition. Inspections and non-destructive testing carried out in course of the project confirmed that the rest of the structure is mostly in good condition.

In the period of a week from arrival, the vessel crew isolated and drained down the systems and put in place electrical and mechanical isolations, which would ensure the safety of the shipyard workers as they performed their duties in the following weeks. Meanwhile, all materials and stores were back-loaded into secure storage in the yard.

"With the multiple workfaces, simultaneous destruct works that include many cutting, burning and lifting operations, all has been managed extremely well by Remontowa" - according to report in "Prosafes Now" - with the assistance of Owners' representatives. Both safety and environment protection is of prime importance both to the Owners of the accommodation platform and to the Yard. "Remontowa" is accredited and certified according to ISO 14001 (environmental protection) and with OHSAS (occupational health and safety) requirements.

The four accommodation fingers on the main deck were removed and

replaced by four new structures. Following the upgrade, *Safe Caledonia* will comfortably accommodate 454 persons in a convivial and productive environment. In addition, offices in the port outer module (POM) for 67 persons, split over two levels will provide splendid facilities for the client.

### **| New accommodation blocks**

Four new accommodation modules, weighing some 875 tonnes, had been towed to the shipyard on 25<sup>th</sup> of April, onboard *Eide Barge 28*, prior to the floatel's arrival. They were sitting on the quayside, until their next lift, this time onto the *Safe Caledonia* deck by the large *Uglen* heavy lift crane. *Uglen* installed the modules during two days in the second half of June.

However, to make installation of new structures on deck and new major items of machinery possible - stripping, uninstalling and demolishing was necessary first. Let us quote another issue of "Prosafes Now", reporting on works advances on *Safe Caledonia*: "*Remontowa* are a speedy outfit, but the alacrity in which they set about pulling to pieces the redundant systems of the *Safe Caledonia*, was still surprising. The containerised accommodation

was dissected, and with this gone to be recycled, the main deck was now clear to be inspected by ultrasonic thickness measurement (UTM) to ascertain what had to be replaced and what could stay. The machinery spaces were prised open and the six engines, two boilers and the redundant diesel driven fire pump removed".

In result of the *Safe Caledonia* stay in "Remontowa", the main forward superstructure and lower deck (sandwiched between the main deck and the underside of the vessel) will be extensively refitted, while important areas such as the bridge, heliadmin room, galley, mess, recreation rooms, stores, fridges and provision spaces - will be refinished after stripping.

Previously, *Safe Caledonia* had 10 lifeboats; 4 port, 4 starboard and 2 forward. These will be replaced by 8 new lifeboats, 3 × 75 persons port and starboard, 2 × 50 persons forward. The boats and davits will comply with the newest regulations including the 98kg "big person" regulation from the UK Health and Safety Executive (HSE).

### **| Power equal to 35 Ferrari cars!**

Continuing the compliance with new regulations, the six new diesel



generators will comply with the new Tier II rules on emissions. Each one will produce 2.6 MW of power, making *Safe Caledonia* equal in generating muscle to 35 Ferrari 458 Italia supercars.

Two small 1MW boilers will take the place of the antiquated behemoths previously cramping the central area between the engine rooms - as reported by "Prosafe Now". As well as being lighter, the new units are also friendlier to the environment.

One diesel driven and one electric crane, both from Liebherr will be installed, allowing the gangway to be lifted with the vessel's own equipment. The existing was removed, to be repainted and reinstalled to meet the newest CAP 437 legislation. It will sit on a manufactured truss forward and to starboard of its previous location to allow for the 5:1 falling off gradient required by the Civil Aviation Authority.

As well as being portly, *Safe Caledonia* is not symmetrical, having on her starboard side 6 mooring windlasses. The reason for this is to have extra holding power on the flank away from the host platform. To allow the two extra anchors to be safely and securely racked, the starboard anchor bolsters will be extended in result of the upgrade carried out at "Remontowa" in Gdansk.

## 21<sup>st</sup> century equipment

A hardware and software upgrade will bring the DP system into the 21st century - according to project description in "Prosafe Now" - and the integrated system from Kongsberg will also manage items as diverse from the load on the diesel engines, to the ballast system, to the temperature of the ventilation system.

Sea and wind forces keep imparting large loads and stresses onto the nodes (or corners) of the columns and braces of a semi-submersible structure like *Safe Caledonia*. After repeated cycles, cracks can initiate in welds and structure at these important areas. During the yard stay, these joints are inspected and modified by grinding away sharp edges which can initiate cracks to increase their fatigue life to last the next 20 years.

To protect the *Safe Caledonia* from the corrosive effects of sea and salt, she will be fully coated externally (and the majority of her internal spaces, too), the cathodic system revamped and new sacrificial anodes fitted.

## As good as new...

It all started during the third quarter of 2011 year, when an invitation to ten-

der was sent to three European yards to bid for the work. After two rounds, "Remontowa" of Gdansk, Poland emerged victorious with a submission of technical and commercial quality. "We are happy to work again with Remontowa having a good relationship after admirable performances from them during the stays of *Safe Esbjerg* and *Safe Bristolia*" - stated Mike Duddy, Project Manager, in Prosafe's corporate magazine "Prosafe Now".

The refurbishment of the *Safe Caledonia* will result 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, sewage plant and ballast water treatment system, the rig will not only be more cost-efficient and reliable, but also more environmentally friendly.

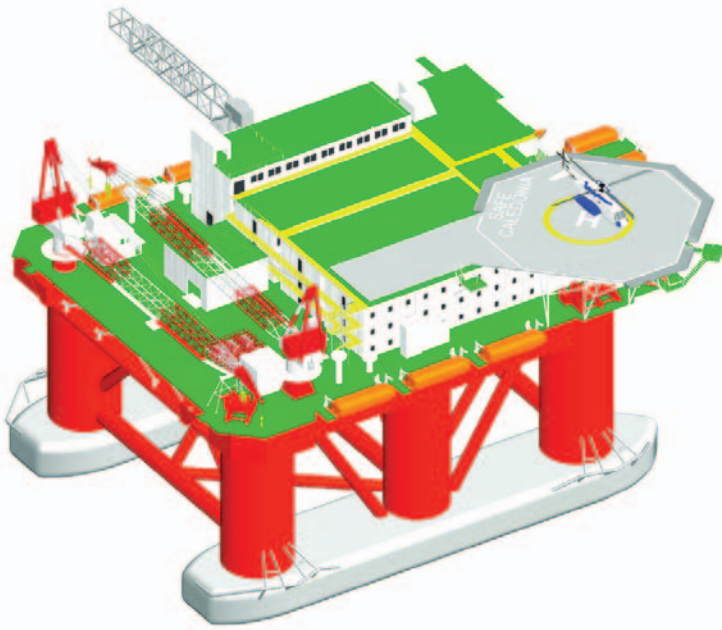
Based on the great amount of preparations and work done so far both by the Yard and Owners' teams, status of works progress, as we went to press, the large refurbishment project is on its way to be completed in due time before the platform's next contract.

Following her refurbishment, *Safe Caledonia* will be assisting BP on a 15-month contract, first with the life-extension of the Andrew Field, before moving northwards to the Magnus field.

## 4 rigs at a time!

For "Remontowa" *Safe Caledonia* will be another significant offshore project executed for important, renowned Client.

In 2011 there were four such offshore platforms related projects... It is worth recalling unique gathering of offshore platforms at Remontowa last year. On February 20, 2011, large semi-submersible drilling rig *WilPhoenix* was towed from Gdansk Shiprepair Yard "Remontowa" own facilities in Gdansk to hired graving dock in nearby Gdynia for upgrade and maintenance finishing touches. The space at Gdansk "Remontowa's" facilities, made available by the transfer of *WilPhoenix* to Gdynia, was immediately filled with another mobile unit *Atlantic Rotterdam*, which arrived on Monday, February 21. This has brought the number of mobile offshore units being simultaneously serviced or upgraded by "Remontowa"



**A 3D renderization of the refurbished Safe Caledonia.**

to four, which is the case for the first time not only at any Polish yard, but most likely, also in the whole Baltic Sea region. Later, at the final stage of servicing of the *WilPhoenix*, this semi-sub was transferred back to "Remontowa" in Gdansk allowing for the meeting of the

all four rigs in the same place at least for a couple of weeks since late March 2011 - the unprecedented event for Baltic based yards. The other two units being serviced by "Remontowa" at that time were the workshop and accommodation semi-submersible platform *Safe*

*Bristolia* and semi-submersible drilling rig *WilHunter* (ex *Arctic IV*).

## Familiar with offshore

Within the last 10 years "Remontowa" serviced, repaired or upgraded around 9 offshore platforms of various types (self-elevating units and semi-subs, accommodation and workshop, as well as drilling units). "Remontowa" 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.

Also during the recent months "Remontowa" was occupied with a lot of work for the offshore industry, including repairs to large shuttle tankers, a seismic survey vessel and offshore support vessels. Further three large AHTS vessels are expected at "Remontowa" in Autumn get ready for their time charter contract from a major oil and gas company offshore Brazil.

**PioSta, rel**

**Representatives of the Supervisory Board, the Board of Directors and the shipyard's management. In the background - new accommodation modules installed on deck of Safe Caledonia.**







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mobile: +48 502 538 427 (Mr. Adam Lelek), e-mail: adam.lelek@supon.gda.pl

*Yeoman Bontrup redelivered  
“as new” after fire damage repairs*



**Reconstructed Yeoman Bontrup  
returning from sea trials.**

# Like a phoenix

# from the ashes...

On April 3, 2012 *Yeoman Bontrup*, one of the world's largest self-unloading bulk carriers departed from Gdansk Shiprepair Yard Remontowa SA after one of the most complex jobs for the yard in 2011 and 2012.

The ship arrived to Remontowa SA powerless and under tow, with most of its large superstructure burnt out in result of extensive fire this bulker experienced. On 2 July 2010, a major fire and explosion occurred on board the ship during cargo loading. The fire spread rapidly, resulting in significant damage to the vessel. Fortunately, injuries were minor. A routine post-discharge survey identified the need for repairs to *Yeoman Bontrup's* cargo discharge hopper, which required hot work on arrival at the remote Glensanda Quarry on Loch Linnhe.

**Nothing new,  
but...**

Extensive rebuilding of damaged ships or even the ones that were salvaged from capsized and partly sunk condition was nothing new for Remontowa. However, the range and scale of damage, lack of many items from shipboard systems documentation (yards design drawings, manuals, etc.), complexity of cargo discharging system, not to mention keeping the highest standards in quality and safety of work, made this project one of the

largest and prioritized at Remontowa during recent several months.

**Extensive range  
of steelwork  
and outfitting**

Over 20 years old ship looked like brand new unit upon redelivery to the Owners. It was redelivered about 12 months after signing the contract. One has to bear in mind the extensive range of steelwork and outfitting. Among others, the whole superstructure was dismantled from the hull and its structure mostly replaced. Large part of internal structure of the ship, especially in way of the cargo conveyors and the parts that were affected by fire damage, had to be removed and replaced or stripped and outfitted right from the bare metal. The cargo offloading boom was also taken ashore in course of rebuilding of the ships.

## Reconstruction of the cargo system

One of the most complex tasks was the installation of vertical conveyor of *Yeoman Bontrup*. The assembly, weighing some 72 tons, and measuring well over 20 m in height had to be placed vertically in casing in front of the ship accommodation block. This precise operation required lifting the assembly over the quay level at the outreach of 34 m with a specially hired crane.

Among the last stages was testing and putting cargo discharge system in operation, that took place after sea trials. The procedure of putting the conveyors into operation proved the quality of work - confirmed the attention to detail, efforts towards quality and accuracy put by Remontowa into rebuilding of the cargo system.

The sea trials themselves also resulted with a short list of very minor, insignificant faults, proving Remontowa's quality of work.

It is also worth mentioning that detailed engineering of the rebuilding was developed in-house. REMONTOWA Group's Remontowa Marine Design & Consulting Sp. z o.o. (RMDC) prepared documentation for rebuild process.

## The quality of workmanship

Remontowa was pleased to deliver the ship, classed by Lloyd's Register, to the satisfaction of its Owners and is proud to quote representatives of the Owners. They expressed their recognition of the quality of Remontowa's workmanship and the large workload that the yard and its subcontractors delivered in order to return the ship to its appearance, operational functionality and readiness. The Owners' satisfaction is also related to the fact that the ship meets their expectations and contractual requirements.

Successful outcome of efforts put by Remontowa in this complex rebuilding of fire damaged large self-unloading bulk carrier once more confirms the yard's vast experience, expertise, broad know-how and ability to deliver quality and has already resulted with increased interest in its services from owners of similar ships, especially in context of possible conversions or upgrades of shipboard continuous bulk cargo discharge systems.

Photo: Jakub Bogucki



**Among the last stages was testing and putting cargo discharge system in operation.**

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  - Mounting options
  - Dimmable version (DALI, DSI)



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  - IP 44
- Décor rings

### DEP 19 / DEP 19 LED

Recessed luminaire for fluorescent lamp T8 or LED source. Suitable for indoor use to light working and living spaces: corridors, halls, passage ways, rooms.

- Max. 2x 18 W/36 W fluorescent lamp
- 2x11W or 4x11W with LED source
- Dimmable version (DALI, DSI)
- Diffuser options



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The luminaire designed for industrial areas and outdoor spaces with an explosion hazard of gases, vapours and flammable fogs mixed with air. Hazardous zones: 1,2



- Power: 2x18W and 2x36W
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- Explosion group: IIA, IIB, IIC
- Temperature class: T1, T2, T3, T4, T5
- Stainless steel housing and clips



*Metamorphosis of a Russian large fish factory trawler*

Photo: Piotr B. Stareńczak

**Lira in the port of Gdansk, seen on its way from "Remontowa" to sea trials.**

# Back in business...

This summer, another large, complex vessel went back into fisheries service after extensive modernization in Poland, carried out at Gdańsk Shiprepair Yard "Remontowa" SA. Fish factory trawler *Lira* is now back in fisheries business with virtually "as new" status and as an Owner's "showcase" vessel.

Built in 1989 by German yard Volkswerft in Stralsund (now in P&S Werften group), *Lira* is 120,5 m long, 19.03 m wide, draws 6,6 m and features

7765 gross tonnage and deadweight of 3372 t. She was one of the ships from a successful series of 37 Moonzund class (488 type) trawlers built between

1986 and 1991 and powered by two SKL 6VDS 48/42-AL2 7200 bhp (5294 kW) engines (so this applied also to *Lira* before conversion carried out at "Remontowa"). The ship is operated by Kaliningrad - based fishing company Morskaya Zvezda Ltd, belonging to the class of largest units in the company's fleet consisting of some 15 units today.

Given the heavy-duty nature of deep-sea fishing ships operation and the ship's age, it is no wonder that *Lira* has arrived at Gdańsk - based yard with much signs of wear and tear. Some 40 tonnes of steel structures have been replaced on *Lira*, but this was not the major part of the project. Practically all trades and divisions available at a highly capable and versatile shipyard in Gdansk have been involved in *Lira* conversion.

## Extensive scope of work

The wide scope of work at the yard included the fish hold rebuilding, along

with installation of refrigeration system. The fresh (live) fish tanks were enlarged. Huge amount of work was performed in fish processing and canning plant, which also involved stripping of the whole insulation and replacing it with a new insulation system, with surface panels made of special plastic certified for contact with food products. Also new floors and ceilings were installed.

Fish factory plant modifications also involved installation of as many as 10 new freezers, adding to transporters, sorting machines, cartoon handling machines, foil packing machines, deheading and descaling machines and other specialty fish processing and packaging machinery.

The entire new refrigeration system was installed by PBUCH S.A. (see an advert on page 13), including cooling agent tanks, liquid separators, refrigerating compressors, some 900 m of piping. The ship also got new freshwater and seawater piping systems. *Lira* has received practically all new electrical, refrigerating and HVAC systems and installations.

The crew of the factory trawler, 75 persons strong, will now work in comfort, especially in comparison to pre-conversion conditions.

### Re-engining of a ship

One of the major tasks to be carried out was the re-engining of a 20-year-old Russian factory trawler. It was accomplished in conjunction with suppliers - Zeppelin Power Systems and Caterpillar Marine Power Systems. The engine room upgrade included replacement of two main engines with new units, replacement of gearbox, main boiler, air compressors.

Modernizing the ship's drive system and integrating it into the existing engine room layout was a major challenge. The new muscle propelling the *Lira* consists of two MaK type 8M32C main engines each of 4000 kW. The existing gearing, capable of transferring up to 5830 kW was replaced with a "double in-single out" unit from Reintjes. It came out the new engines and gearing along with a new electronic remote control device

meant that the existing SKL 8VD 26/20 auxiliary Diesels did not need modification, which is a cost saving for the owners - according to Zeppelin Power Systems.

With an available total performance of 8000 kW, two wave generators each of 1500 kW and a drive shaft/gearbox/propeller transfer of up to 5300 kW, the trawler now has a powerful drive plant that is tailor-made to demand.

During docking typical tasks have been accomplished, such painting and hull maintenance, rudder and propeller overhauls, but also replacing fish finding sonar and echosounder transmission and receiving units with new ones in the bottom of the ship.

The vessel departed from "Remontowa" late May 2012.

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## Remontowa Group opens service centre in West Africa

Remontowa Group commences operations in West Africa providing direct access to Remontowa's experience and know-how for owners and operators of offshore support vessels.

The new entity, Remontowa Marine Services Namibia, commences direct Remontowa's presence and after sales client support operations in Africa - growing offshore market. Major areas of operation to be covered will be offshore industry based in Angola, Nigeria, Tanzania, Gabon and Namibia and others countries in West Coast of Africa. Ship repairs, maintenance and servicing ships' equipment will thus be performed in-situ instead of bringing ships to distant European yards.

- We have chosen Namibia, because, from our point of view, this is optimal location for establishing a service center - Klaudiusz Stolarski, president of the new entity in Remontowa Group explains. -

*The company's range of operations will cover mainly servicing ships either built at Remontowa Group yards or vessels sent to Gdansk for repairs, maintenance or conversions and upgrades by shipowners and operators co-operating with Gdansk Shiprepair Yard Remontowa SA for years, so far. We move closer to the Client. We want to be present with our services, where it is most needed - close to offshore oil and gas fields.*

West Africa appears to be the world's third busiest area of new offshore oil and gas developments. What is more, the new discoveries are being announced offshore Tanzania, Gabon and Namibia.

- Offshore support fleet comprises high-earning vessels, so every single day of downtime is very expensive for the owner or operator, too. Therefore, short reaction time, moving closer to the Client, being available on the spot is just what the market expects from us -

Klaudiusz Stolarski adds and continues: - Initially the company will employ over 20 specialists, both Polish staff and local employees to be trained by us.

Remontowa Marine Services Namibia operations, based in Walvis Bay, are scheduled to commence effective from May 1, 2012.

See our advert in page 2.

**REMONTOWA**  
MARINE SERVICES

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- locksmith work
- piping work
- fitting and equipment work

*Submersible barge with a history to become a floating dock*

**Rem Lift, ex Giant 4 as a floating dock will significantly increase the production potential of the largest Polish repair and conversion yard.**

# Second life...

*Giant 4*, submersible heavy-lift barge (flo-flo), that recorded itself in the history of ship salvage playing a major role raising the wreck of the Russian nuclear submarine *Kursk*, has recently changed owners. On July 30, towed by tug *Kestrel*, it arrived to Gdansk Shiprepair Yard "Remontowa" SA.

*Giant 4* already this Autumn, re-named *Rem Lift* will commence work for "Remontowa" as another floating dock. The previous owner of the unit was Dutch company Smit, a world leader in port and ocean towage and salvage, wreck removal, offshore construction and decommissioning support and other offshore works. Now, "Remontowa" SA carries out the renewal and conversion of the submersible unit (including adding side sponsons) to adapt it to new owner requirements.

Investment in new dock, which will be able to lift objects weighing up

to approximately 25 000 tonnes will significantly increase the production potential of the largest Polish repair and conversion yard. As we learned from the Yard's representatives, the decision to buy large pontoon-barge had been long considered before actual transaction was sealed.

During the continuing economic slowdown and uncertainty, bringing crisis to many areas of shipping, only the best and strongest companies can afford such an investment. The owners and management of "Remontowa" are determined to develop and enhance

technical capabilities of the Yard, which goes in line with implementation of its strategy.

It is worth recalling that *Giant 4* has an interesting episode in its history. In October 2001, the unit raised the wreck of a Russian submarine, after the tragedy, in which, in result of explosion during preparations to fire a torpedo in trials, the submarine sank on August 12, 2000. All the 118-strong crew members of *Kursk* died in the incident.

Onboard *Giant 4* as many as 26 powerful hydraulic jacks were installed, with heave compensation system. Wire ropes (anchored in the wreck hull) were running from jacks down to the submarine wreck through "moonpool" holes cut in the hull of *Giant 4*. Aggregated power of jacks needed to bring the wreck towards sea surface was around 9000 tonnes. The preparations lasted for months, while the operation itself - lifting the wreck from the bottom of the Barents Sea (from a depth of 108 m) - took about 15 hours. An extremely complex operation made the consortium Mammoet-Smit, under contract worth USD 65 million from the Russian government.

*Giant 4*, after interesting career at sea begins its "second life", this time working for a Polish shipyard as *Rem Lift*.

On the premises of former  
Gdynia Shipyard...



Photo: Aker Solutions

# Module manufacturing plant

**EPG fabricated and installed a 232 tons A-Frame on the stern of advanced multi-function AHTS, ROV support and offshore construction vessel Skandi Skansen.**

The beginning of the year 2012 was busy for Energomontaz-Polnoc Gdynia Ltd (EPG), Polish supplier of large steel multidisciplinary products for offshore and onshore energy, oil and gas industry.

When it comes to offshore and subsea structures and equipment, project for well known North Sea oil and gas field is worth mentioning among others. It called for fabrication of over 2100 tons of topsides deck sections and nodes for new wellhead platform on the North Sea field.

Another offshore sector project comprised fabrication of completely outfitted multidisciplinary modules, weighing over 1886 tons in total, for leading offshore engineering contractor and ultimate user - renowned oil company.

Among the projects completed this year, especially the fabrication of a module for *Sevan Voyaguer* FPSO is worth mentioning.

In April EPG commenced fabrication of multidisciplinary modules equipped with 18" rigid gas pipe line installation for wellhead platform of oilfield located offshore Gabon.

## Module handling tower for Skandi Aker

EPG is also known for manufacturing specialist equipment and structures for offshore support and construction vessels, offshore drilling and production units, both mobile and fixed, as well as for subsea installations. EPG, among many others items of offshore equipment, manufactures also moonpool doors and drill floors, stinger pipelay booms / ramps, subsea hatches and covers, etc.

As an example, it is probably worth to recall the fabrication and assembly of the module handling tower for award winning *Skandi Aker*. This deepwater intervention vessel from Aker Solutions, has won the coveted international „Ship of the Year 2010” award. A unique feature about *Skandi Aker* is her multi-functionality. When she is not performing well intervention work she can perform subsea installation and construction work, handling 225-ton structures down to 3000 metres water depth, owing also to its EPG fabricated module handling tower.

## A-Frame for Skandi Skansen

One of the most recent, interesting references is the fabrication and installation of an A-Frame on the stern of multi-function AHTS, ROV support and offshore construction vessel *Skandi Skansen*. The EPG manufactured and National Oilwell



Photo: Aker Solutions

**Subsea construction and well intervention module handling tower, fabricated by EPG, onboard Skandi Aker.**



Varco designed structure, with dimensions of 26,2 × 21,1 × 10,2 m and weighing 232 tons, was installed (with use of heavy-lift floating crane) within a couple of hours during a short stay of the sophisticated offshore support vessel in the port of Gdynia, at EPG's quay early March 2012.

Subsea 7 entered into a four-year charter of *Skandi Skansen*, a trenching support vessel, for 100 days per year plus options. To facilitate deploying (submerging) the sea bottom trenching plough, the 500 T capacity A-Frame had to be installed onboard the vessel chartered by Subsea 7 from DOF.

The *Skandi Skansen* is a new generation high powered anchor handling vessel, capable also of performing construction and ROV support roles, designed for field installation operations across a wide range of water depths and environmental conditions. The *Skandi Skansen* also features, as the world's first vessel, STX's new bow design, optimised for Ecodrive in all weather conditions.

## Structures for energy sector

Energomontaz-Polnoc Gdynia is also active in renewable energy sector. Company fabricated many steel structures, such as substation topsides, protection cages with J-tubes, groutskirts and pedestals for offshore wind farms - Walney, London Array and Rødsand. Currently EPG Shipyard (part of Energomontaz-Polnoc Gdynia responsible for shiprepairs & conversions) performs installation of seafastening on four ships for transportation of large size elements for offshore wind farms.

## Business - partner in ship repairs

EPG Shipyard, possessing 240 × 40 × 8 m dry dock and 350 m jetty, equipped with all necessary infrastructure, is active in shiprepair industry since 2010.

Just as an example of projects in this area let us mention the participation in conversion of double bottom into single bottom doors on the dredger *HAM 310* late 2011. The 138.5 m long and 23 m wide trailing suction hopper dredger, draughting 10.07 m was dry docked in EPG's graving dock. The project, contracted by Gdansk Shiprepair Yard "Remontowa" SA, included conversion of double bottom doors system (fabrication and installation), partial renewal of bottom steel and installation of door seals.

Other of the recent references include repairs of various type of ships (container vessels, tankers bulk carriers and cargo ships) and this activity will be continued the whole year 2012.

To meet the growing demands of the market, Company implemented dedicated development plan. The newest investment is the construction of new machining workshop at own facility in the port of Gdynia, to be equipped with the most modern CNC equipment for machining of large size elements up to 120 tons. Investments are carried out in order to enable the company to acquire orders concerning further, more complex projects for offshore & renewable energy sectors.

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One of the AHTS vessels from highly successful series of ships designed and built by REMONTOWA Group.

# Top class ship designs

Polish newbuilding activity, especially in larger cargo ships sector (container vessels, ro-ro cargo ships and vehicle carriers or tankers) may have declined significantly over the recent years, but ship design is flourishing. More independent ship design consultants from Poland start to establish themselves with their own trade marks on the international market and acquiring orders from top clients.

Poland has always been a source of shipbuilding technology know-how and competence, but previously (apart from big yard's own ship design offices) Polish naval architects and marine engineers, employed in numerous privately owned ship design and consultancy companies, had been mainly subcontracting work from Western European

ship design consultants, mostly covering in Poland only partial design, such as CAD drawing, detailed engineering and strength analysis of ship structures or workshop drawings based on initial, conceptual and technical designs received from foreign shipyards or ship design consultancies. A significant amount of highly skilled naval architects and

marine engineers has encouraged some big names in ship design to establish subsidiaries in Poland to take advantage of availability of skillful naval architects and marine engineers in Poland. One such example is quite a large office of Vik Sandvik in Gdynia, that has operated for years (recently, after take over, under the name of Wartsila).

However, especially in recent years, both the entities that had been existing on the market for quite a time and new companies established during the final years of operation of Poland's big newbuilding yards in Gdynia and Szczecin (forced to close by European Commission order in 2009), have been increasingly active in offering and promoting their own "full featured" designs, right from the conceptual and initial design.

## Highly successful series of AHTS vessels

The most significant success of Polish ship design know-how is probably the development of a series of similar AHTS vessels (NED 8167 and NED 8167 L designs) with bollard pull from 80 up to 160 T in varied mutations suiting detailed requirements of several renowned owners.

Initially Gdansk Shiprepair Yard Remontowa S.A. has signed contract



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with Tidewater Marine LLC of New Orleans, Louisiana, USA for delivery of 4 vessels during year 2005 (plus 2 in option). The vessels have been built in co-operation with companies of REMONTOWA Group.

The Customer expected to have relatively modest vessels in size, but with comparatively large cargo capacities. In addition, there was also expectancy of limited water depth operation capabilities. "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.

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. 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 program of tank testing was performed, to prove assumed parameters and to ensure satisfactory sea-keeping characteristics as well.



Fig: RMDC

**Continuing of successful Project 1674, Gdansk - based RMDC developed design of Anchor Handling Tug/Supply Vessel RMDC 8176 AHTS, the new cost-effective, powerful vessel with excellent capacities.**

Additional cost cutting gain, important for shipbuilders, is simplicity of applied body shape, which spares labor cost of the hull's erection. Moreover, promising results for 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.

The success of the project resulted in further orders from Tidewater Inc.,

as well as other owners: Italian Marnavi Offshore S.r.l. and US based big names GulfMark Offshore Inc. and Edison Chouest Offshore LLC, specifying vessels with slightly different particulars and equipment and increasing bollard pull. Within five years until 2010, some 21 such ships were built of NED 8167 and NED 8167 L design with machinery and equipment variations with bollard pull up to 170 tons.

## LNG powered PSV



Fig: RMDC

**Platform Supply Vessel of the RMDC LNG DF 8286 design.**

Due to high interest in LNG fuel for PSV the company has also designed a vessel powered by LNG, which at the same time has not missed its cargo ability using special design of LNG cargo tanks. PSV LNG DF 8286 project is the LNG -powered platform supply vessel features dual fuel engines. It can run on both LNG and marine diesel oil in any proportion. Using LNG results in a 90% reduction of NOx as well as a 30% reduction of CO2. LNG is stored in a vacuum insulated tank with a volume of 400m<sup>3</sup>. With 5100 tonnes deadweight the vessel is ready to carry considerable amount of multiply cargoes in her tanks including fuel oil, liquid mud, fresh water, dry bulk, methanol and drill water. 770 square meter working deck provides large space for 2000 tonnes of cargo and additional space for eight 20-foot containers.

## Emergency Response & Rescue Vessel

After those successful designs, an interesting portfolio of various new offshore support vessels and emergency response vessels designs is available from REMONTOWA Marine Design and Consulting Ltd. This new design office has taken its heritage from both former Naval Engineering & Design "NED" Sp. z o.o and Remontowa design office, being presently the largest Polish marine design office, hiring more than 100 experienced staff designers.

An interesting example is an RMDC 4348 Emergency Response & Rescue vessel, designed according to Oil & Gas United Kingdom and Emergency Response & Rescue Vessel Association (ERRV) requirement for class B. She carries out rescue of survivors, monitoring of danger zone and other necessary operations. The ship is equipped with a diesel electric power plant comprising three main diesel generators totally giving 2250 kW of electrical capacity, one aft azimuth thruster and one fore retract-

able thruster as main prime movers. The thrusters are powered by electric motors and controlled by frequency convertors. This solution allows to achieve low cost

monitoring operation, fast response at cruise speed, high flexibility of the power plant.



Fig. RMDC

**RMDC 4348 Emergency Response & Rescue vessel.**

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RMDC 8386 PSV 4300-5400 dwt.

## Platform Supply Vessel 4300-5400 dwt

Another design applies to PSV with deadweight range – 4300 – 5400 t. The RMDC 8386 PSV design was developed emphasizing environmental friendly features without compromising its efficiency and serviceability. At design stage ABS class regulations were accounted for, although other class societies may be chosen. The tailor made design has been resulted to reduced hull resistance given by slender lines, less use of power and consequently a lower fuel consumption which, in turn, controls the amount of CO<sub>2</sub>/Nox emissions. There are three version of this vessel available, which are 4400 dwt, 5000 dwt and 5400 dwt satisfying the highest requirement of the Clients.

However, REMONTOWA Marine Design and Consulting Ltd.) is not the only Poland's ship design consultancy, that managed to win an order from global offshore support industry leader...

## Fincantieri group's shipyard builds PSV designed in Poland

Offshore support vessel giant Tidewater is building the latest generation of platform supply vessels in USA and China, specifying ship design from Poland and diesel-electric power. Tidewater says the propulsion choice was specified as it offers greater operational flexibility and efficiency. The flexibility of diesel electric allows for a one or more of the engines to be shut down when full power is not required.

Fincantieri Marine Group (FMG) announced on March 21, 2011, that its Bay Shipbuilding Company will build two 92.4 metres Platform Supply Vessels (PSVs) of the MMC 887 LH PSV Design from MMC Ship Design of Poland for New Orleans, LA based Tidewater Marine LLC, a wholly-owned subsidiary of Tidewater Inc.

The Deepwater Platform Supply Vessels, to be built at FMG's shipyard Bay Shipbuilding Company, located in Sturgeon Bay, will be state-of-the-art vessels with diesel-electric Z-drive propulsion, dynamic positioning 2 (DP-2) system, polar class 7, fire-fighting class 2 (FFV 2) system, and ENVIRO notation.

The first MMC designed PSV from US shipyard is scheduled for delivery in the fourth quarter of 2012, while the second



The MMC 887 design PSV.

unit - in the second quarter of 2013. Earlier, the same Owner had ordered ships of the similar design, also developed by Gdynia, Poland based MMC, in China.

## Caspian catamaran



Caspian catamaran designed by GSM Design Group.

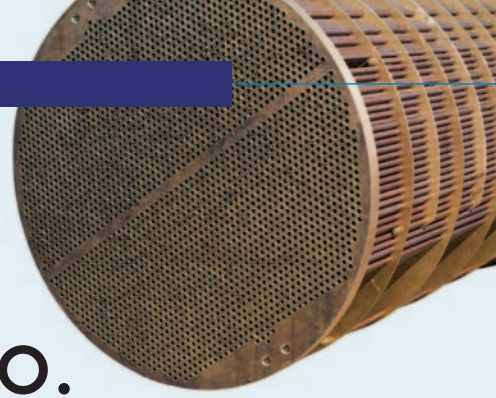
An advanced and innovative design of a dynamically positioned twin hull diesel-electric driven drillship for well intervention on shallow waters (up to 10 m depth) is proposed by GSM Design Group from Pruszcz Gdański, near Gdańsk. The ship is suitable for operation in shallow waters, such as the Caspian Sea and Orinoco river estuary and safe and efficient exploration of offshore oil fields. The ship features four generating sets, each rated 1300 eKW at 1800 r.p.m. The design speed is 13 knots at 3.45 m draught.

Just to mention some of the other most important particulars - according to design the ship will have tanks with capacity of 1340 m<sup>3</sup> for fuel and 827 m<sup>3</sup> for brine. Work and cargo deck measuring 43 × 17 m provides 730 m<sup>2</sup> of working area and a moonpool measuring 2.5 × 2.5 m. The accommodation foreseen in the design offers 30 places for ship's crew.

Main dimensions are as follows: length over all 74.64 m, length between perpendiculars 69.06 m, moulded width 21.60 m, depth to main deck 6.20 m, maximum draught (at SWL) 3.45 m.

PioSta

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## Introduction

Our company was founded in 1945 as a supplier of the equipment for chemical and shipbuilding industry. Throughout our history we have specialized in the manufacturing of heat exchangers (high pressure and pressureless) designed for civil and marine engine rooms such as charge air coolers and tube and shell type for marine diesel engines.

Furthermore, our business area comprised heat exchangers for hydraulic systems, refineries, steel mills. In the beginning of 90's our company started



to manufacture steam and water boilers for different types of use.

## Quality Control System

In October 1997 the company was certified by Germanischer Lloyd in accordance with ISO 9001:2008 international quality standard (EN 29001).

Our company is also approved by TÜV, UDT, WDT, DNV, RMRS as well as by all most significant marine classification societies such as LR, BV, DNV, GL and other establishments requested by the customer.

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- Hot Water Boilers
- Steam Boilers
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- Steel Structures
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The structure of a device is constructed on the basis of documentation developed by our own Design Department, other cooperating design companies or on the basis of the customer's documentation.

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