

BIG NEWS

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SAFE SAILINGS INTRODUCED
ENGINEERING
SHIPLOADER REPLACEMENT



BIG LIFT

KEY IN HEAVY LIFT

SAFE
SAILINGS



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INTRODUCTION

You have just opened BigNews 30 and it is my pleasure to introduce it to you. We are very proud to highlight some of the projects that were performed over the last months. Additionally, we wish to acquaint you with our Engineering Department, the technical backbone of our company and give you some insight into what they do.

A major topic on the BigLift agenda is the Safe-Sailings programme through which we aim to continue to become ever more the Learning Organisation. We highlight its launch, its aims and our ambitions in a separate item.

Our vessels can be spotted all over the world. You will find articles on the exchange of bulk loaders/unloaders for various destinations and find out how such shipments are organised. There is an item on the Sasol project, which was carried out in a unique combination with our longstanding colleagues of Jumbo. The Jumbo BigLift Projects team joined inventiveness, expertise and their fleets in a seamless project which saw 20 vessels full of cargo sail from Yanda to Lake Charles.

Happy Buccaneer is showcased in a project where she deployed all her capabilities, from heavy lifting to ro-ro for the Talara project in Peru, and Happy Star showed some precision discharging when she positioned pier sections for the new bauxite terminal off Weipa, Australia. Our Tra-vessels and Happy D-types are also featured.

We can only show so much in the magazine, but one thing is certain – the execution of projects can only be very successful if the cooperation is good between all the parties concerned, i.e. the clients' and our own technical and supervising teams. Time and time again we notice that an early and open communication on commercial, technical, operational and safety matters is key to a safe and efficient shipment solution.

I wish you much enjoyment while reading our 30th issue of BigNews!

Arne Hubregtse
Managing Director



CARRINGTON

BigLift Shipping has continued its specialist mining industry role in Australia by completing delivery and removal of its 34th shiploader/ ship unloader/reclaimer.

The latest of these moves was for client Sandvik Mining and Construction (Australia) when BigLift delivered two new shiploaders, and removed three existing ones at Port Waratah Coal Services’ (PWCS) Carrington Terminal in Newcastle, Australia.

First stage
The shipping contract was signed in June 2015 and the first stage of the project was completed in July 2016. This involved the delivery of two new shiploaders, and the removal of an existing one. With this work Happy Buccaneer continued her remarkable involvement in Australia’s resource industry –developments which have been more or less ongoing since 1986. Due to the size of the new machines (700 mt) Happy Buccaneer used her tweendeck hatch covers as deck extensions on the weather deck. In this way one of the shiploaders could be driven aft on specially installed rails. After having been lifted on board, the first shiploader was safely pulled passed the Happy Buccaneer’s Crane 2, with centimetres to spare, to reach its sea passage position. The

second shiploader was loaded in between Cranes 1 and 2. At Newcastle the discharging sequence was reversed.

Uninterrupted operations
One of the unique requirements of this job was that the PWCS loading facility needed to remain active before and after the delivery of the new machines. To achieve this, the existing Shiploader 3 was decommissioned and prepared for shipping prior to delivery of the new shiploaders. The actual delivery and removal were then carried out during a scheduled maintenance shutdown. Once the operation was completed, PWCS could then continue loading coal onto vessels with the remaining shiploaders 1 and 2 whilst the new shiploaders were commissioned and brought into service.

Rounding off
Then, the existing shiploaders 1 and 2 were decommissioned and prepared for shipping. The second stage of the contract was the removal of these shiploaders which was conducted in February 2017 and performed by Happy Delta, as at 418 mt the shiploaders were well within the ship’s capacity. The existing shiploaders were loaded onto Happy Delta in four separate pieces each. To ensure no damage was done to the coal delivery conveyor gantries during the lifting process, BigLift used its unique Synchoist system (see insert) This system enables the lifting slings to be lengthened or reduced in length during the lifting process so that the shiploaders could be lifted in a level positon, so they were free of the nearby gantries. The terminal was immediately able to re-commence loading coal with only minimum downtime.

BigLift would like to thank Sandvik Mining and PWCS for their invaluable assistance and cooperation in performing the safe, injury free, timely and efficient delivery and removal of the five shiploaders.

01 SHIPLOADER REPLACEMENTS

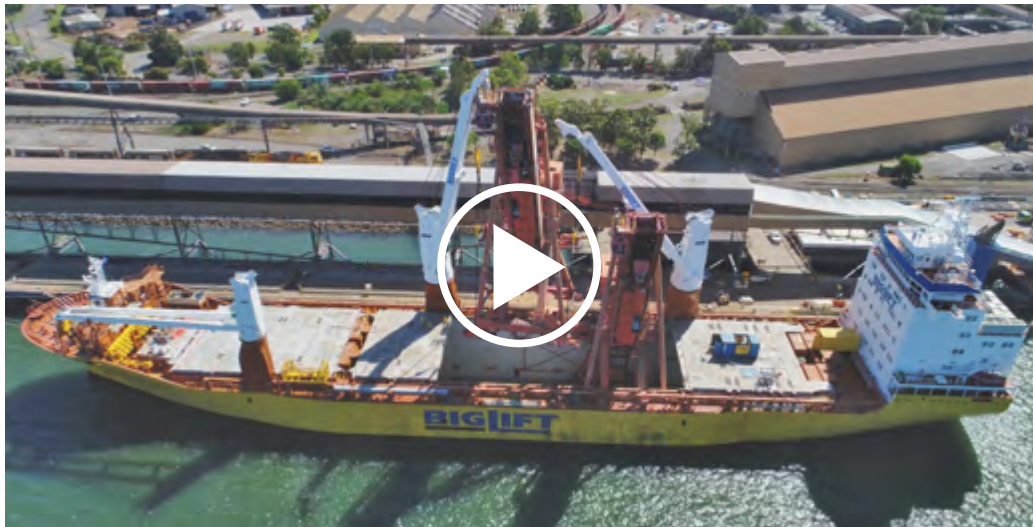
The delivery of new shiploaders to existing wharfs often brings with it the added task of removing the old installation which is usually still in operation until a few days before its removal. Therefore, these projects have their own specific requirements.

Tight delivery times
Bulk wharfs want to remain in operation as much as they can, so the delivery of a new crane should ideally not hamper the daily run of loading or unloading vessels. Closing the wharf down means ships waiting and stocks running up. Often, the delivery of the new crane is planned within a scheduled shutdown which makes for very narrow delivery windows.

Quest for details
BigLift has lately undertaken quite a number of such

deliveries and pick-ups, as shown in these pages. Preparation time for the new loaders or unloaders can run up to 12 months, with every tiny detail of the machine known and used to ensure a damage-free, timely and smooth delivery. However, details for the old equipment that is to be taken away, are often much harder to come by. The old unloader/loader can have been in service for decades, drawings are no longer extant, things were changed over the years and the material has deteriorated.

Question marks galore
There are question marks galore; information on internal strength, stability and the centre of gravity has to be found. One aspect is clear though, the new and the old crane will have the same rail gauge, so the ship that brings the new one in and takes the old away, will not need to change the situation on board where rails are concerned.



In this article we show you three very different projects where a total of six new cranes were delivered and seven old ones were removed. All had their own challenges and puzzles to be solved.



KAMSAR

Happy Delta loaded a new ship unloader of 530 mt in the port of Qidong, China, for FL Smidth. The 57.9*25.5*41 m unloader was loaded by the ship's own two heavy lift cranes onto the tween deck for passage to Kamsar in Guinea, West Africa.

This new shiploader had to be very light, due to the internal strength of the quay at its destination. Light weight makes for more delicate construction so the engineers of BigLift were asked in the design phase of the crane to assist in its construction and lifting and seafastening possibilities. It was lifted on board with the "forklift-technique" where the crane rests on two large beams during the lift.

At Kamsar, the new unloader was placed in its rails and in the same movement, so to say, the old one could be taken on board to be taken away for the breakers yard in Belgium. As details of old equipment like that have often disappeared in the mists of time, data like exact weight, and very importantly, centre of gravity, must be estimated. Here too, the synchoist system was used.



The old unloader, which was "only" 27.7*18.7*41 m and weighed 375 mt and came with a tripper car of 24*5*25 m weighing 25 mt, was loaded by Happy Delta and positioned on the same rails in the tweendeck that had carried the new crane to Kamsar.

VOSTOCHNY

As a follow up of the first transport of a coal ship loader from Dalian, China, to Vostochny, Russia – performed by Happy Dover in 2013 – Messrs Marubeni awarded BigLift three more shipments of similar ship loaders for the same route.

The new coal loaders had been ordered to improve output, whereas one unit served as a replacement for an older machine. All three units were delivered between January and May 2017 and went straight into service. The first was shipped by Happy Star and the following two by Happy Sky.

Furthermore, BigLift was requested to take care of the transfer of the retired ship loader from its operational quay to a side quay within the port of Vostochny after delivery of the new cranes. There was no information on this crane other than what could be gathered from the situation on the quay, so the engineers had their work cut out to calculate the lifting and mooring operations. All was well prepared and the crane was safely moved within the port.





02 ENGINEERING THE CORE OF THE COMPANY

BigLift engineers are a pretty unflappable bunch and for them outsize is 'the norm'. Mind-boggling projects to anyone else are simply run of the mill for the Engineering Department, whether talking about the installation of huge ship loaders or large STS container cranes or a heavy topside module.

The Engineers
The 12-strong BigLift Engineering Department comprises stability engineers, hydrodynamicists – who examine forces and motion behaviour of ships subject to wind, current and waves – and structural engineers – who look at the project from a mechanical point of view. Most of the project engineers did their bachelor's or master's in naval architecture or mechanical engineering and they all have one thing in common – they love a challenge.

Roel Verwey, Manager Engineering Department and Michiel van Mondfrans, General Manager Projects, outline how the heavy lift industry is changing in relation to what it expects from an Engineering Department these days.

Installations
There has certainly been more demand for inshore and offshore installation projects over the last decade such as ship loader installations on piers, installation of bridge sections in more open waters, buoy installations etc. and this requires more advanced engineering calculations, Roel points out.

Additionally, as well as the engineering specialists been called on to work on complex installation projects, BigLift also carries out dismantling and removal work. (See previous



Roel Verwey & Michiel van Mondfrans

SYNCHOIST

This BigLift designed system was developed to assist in the safe handling of items where the physical details are incomplete, especially when the Centre of Gravity (CoG) is unknown. The inexact information is buffered by the use of the Synchoist system. Its plunger is incorporated in the lifting arrangement and helps to carefully tweaking the operations to ensure a straight lift. This saves an enormous amount of time: the CoG would usually have to be found by trial and error, adjusting the lifting arrangement every time, until the crane can be lifted in a level position. As it takes hours to take a lifting arrangement apart and refit it for the new situation, the Synchoist system is a great help.





article). “The removal of older machines is always difficult because it is not clear where the centre of gravity is and after 20-30 years there are no drawings left. So the Engineering Department also needs the support of some knowledgeable project people on site.”

More skills in-house

The shift in the nature of projects has led BigLift to develop its structural engineering and hydrodynamics side much more. “A few years ago we would have to go to third party consultants for the hydrodynamics’ calculations or structural assessments, but now we are building up this knowledge ourselves in-house.” For example, for calculating mooring hydrodynamics, BigLift uses the mooring analysis computer tool OPTIMOOR and it has developed its own coding to perform motion calculations.

“In addition, we use MARIN’s software tool SafeTrans to simulate heavy transports in historic weather conditions in order to obtain design accelerations for a specific transport. This tool has an 18-year weather database over a global grid. This enables us to make accurate motion analyses for our shipments depending on ship type, loading condition, sailing route and season. In combination with our onboard motion measurements system Octopus Onboard, which is installed on the majority of our fleet, we can carefully forecast and monitor these accelerations during sailing.”

FEMAP & SDC

BigLift uses FEMAP and the Structural Design Codes (SDC) Verifier analysis software for processing FEM calculations and for helping to perform buckling analysis. “FEM was used for more advanced structural assessments

in the past but now it is used in day-to-day engineering,” Michiel comments.

“Because we are getting more questions about offshore installation jobs, it is vital that we know more about motion behaviour and the workability – an accurate percentage about our ability to perform the job – in such areas based on the environmental and metocean conditions. We are continuously developing more knowledge about hydrodynamics and structural engineering.”

On the structural side, BigLift carries out modelling and calculations to enable it to design project specific, sea fastening arrangements and grillage systems.

Mechanical behaviour

The thirst for more in-depth knowledge led

the company to conduct a study together with the renowned Dutch scientific institute TNO. BigLift wanted to test a range of its customised stoppers and shear plate designs to check their mechanical behaviour under massive amounts of pressure. These T-shaped and triangular configurations are used for sea fastening the cargo so it cannot shift in a horizontal plane.

Testing stoppers

The idea of the tests was to make sure the results calibrated with BigLift’s own calculations, which are then fed into its extensive database.

And here Michiel laughs, the usual cool, calm and collected FEM engineers lost a little bit of composure as they huddled around his desk begging him to let them to take part in the tests. “I think they were looking forward to breaking things for a change!”

Using image detection analysis the shear plates and steel stoppers (80* 120 cm) were subjected to three days of tests. Massive forces were applied until the stoppers reached the point of deformation and eventual breaking point. “It is fascinating because once they start to break they actually tear like paper, which is not what you would expect when seeing that they are made from thick steel.”

Breaking point

The breaking point was eventually around 70-75

tonnes per stopper, which is even better than we expected, adds Roel. “And now we can show clients what they will need for their individual cargoes much more accurately than before.”

BigLift has the stoppers customised for each project and they are largely manufactured in the Netherlands and in Asia, via its agency representatives in Singapore, China or South Korea.

Projects

In the pictures in this and other articles there are some interesting examples to be seen. On the previous page we show Happy Dover with the cradle in the tween deck for the large buoy that we shipped to Brazil and on this page Happy Star in Maceio has just landed an FPSO module on the skidding system that was layed out on deck.

Elsewhere in this magazine you can find pictures of the Sasol project, a large project with multiple voyages that started some two years ago on our drawing boards. A special part of this project was the design of a large, adjustable lifting beam, which had to be suitable for a range of module sizes. Every module was of a different size and the lifting beam could be altered on the spot to adjust it for that particular module. This involved a lot of engineering and thinking ahead as to what would be required and how the different weights and sizes could be safely accommodated by the ever-changeable lifting beam.

Hands-on

In fact, the engineers’ work can be seen everywhere in our pictures. Every stopper, forest of wires, out of place hatch cover, even where the cargo is on deck, has been designed by them and checked by one or more colleagues. And last but by no means least, they all go out to attend the operations themselves, thereby gaining valuable practical knowledge to enhance the theory. Engineering excellence is at the heart of our company.



Most of the engineering team

03 HYWIND: FLOATING WINDMILLS



Statoil has been developing a unique, floating offshore wind project off Peterhead, Scotland.

Hywind Pilot park is the world's first floating windfarm and has a capacity of 30 MW. As a pilot project, five enormous wind turbines are being installed to provide power for some 20,000 households from the end of 2017. After six years of testing a prototype in the North Sea in Norway, this is the next step.

The very large wind turbines, with blades of 75 m, are not resting on the seafloor, but float by way of a buoyancy section below the surface, which is kept in place by an anchoring system. In this way, they can be positioned in much deeper waters.

BigLift was responsible for the transport of the upper sections of the five wind turbines from Bilbao in Spain to Stord in Norway. The m.v. Traveller carried out the shipments in three voyages.

The cargo comprised five top sections of 191.4 mt, which were 41.5 m long; five upper middle sections of 184.1 mt, at 22.14 m long, five lower middle sections of 203.3 mt which were 16.6 m long and the bottom sections which weighed 150 mt, and were shaped like a giant washer of 13.5*12.5*8.6 m.

At Stord, the tower sections were discharged by Traveller's cranes. From there, Mammoet took over and assembled the

wind turbines on shore. Then these sections were picked off the quay by the crane vessel Saipem 7000 which 'mated' the wind turbines with their underwater sections further out in the bay. By that time the total height of the turbines' construction was 162 m!

After the mating process, each wind turbine was towed on its own buoyancy to its ultimate mooring place, 25 km off Peterhead.





LO-RO CARGO HANDLING HAPPY BUCCANEER'S UNIQUE QUALITIES

04

Happy Buccaneer used all her technical possibilities for the loading and unloading of the cargo for the Talara refinery modernisation project. She lifted on and rolled off, and her large cargo hold – with its heavy duty floor – and her fast ballasting systems were all part of the game.

The project
Geodis Wilson, on behalf of Tecnicas Reunidas, approached BigLift for the transportation of five sizeable columns (totalling around 25,000 cbm) which needed to be sent from Bilbao in Spain to Talara in Peru. These columns ranged in size from 22.5*5.1*5.1 metres to 73.6*9.4*8.1 metres. The two heaviest columns of 714 mt and 738 mt were fairly large, measuring 38*15*14 metres.



The skills
Happy Buccaneer was the vessel that could do all that was required. This contract had a number of challenging aspects.

1. The cargo could be lifted on board, but due to local circumstances in the port of discharge, i.e. the large risk of swell and the tidal difference, lifting was not an option at the discharge port.

2. The cargo items were heavy and large. With the roll-off discharge requirement all cargo needed to be positioned on the tweendeck. Therefore, this ruled out cargo on the weather deck and required a vessel with a large enough tween deck to accommodate just over 2000 m² of cargo.

3. The cargo had to be stowed on grillage on the tweendeck floor, as SPMTs had to be able to drive under the cargo items during discharge. This led to an increased foot print for the cargo cradles and meant that the tweendeck floor had to be very strong.

In short, Happy Buccaneer was the vessel of choice. With a lead time of a number of months, the loading sequence was engineered. Happy Buccaneer loaded all the items with her own gear and with pinpoint precision placed them on her tween deck.

Bad weather
While in Talara, swell was indeed a complicating factor, as was the rain! The port of Talara was closed down for a number of weeks because of the bad weather and the heavy rains had flushed away the quay where the roll-off operation had to be performed. The shoregang and transport company Sarens had a tough job reconstructing the ramp every time before each load out action, which in themselves were quick and professional.

All in all this was an out of the ordinary project. Thanks to the excellent cooperation between Geodis, BigLift, Sarens and the shoregang the difficulties were overcome and we can look back on another job well done.

05 HAPPY STAR TO WEIPA

In Weipa, QLD Australia, McConnell Dowell is building a new bauxite terminal for Rio Tinto. For this terminal a complete quay was designed, whereby BigLift's engineers were asked to give their input for the feasibility study and the design of the new quay parts. They had to consider factors such as lifting, seafastening, transport and the available loading space.



The quay is built from scratch: jackets must be positioned on the sea bed in Weipa, then wharfdecks are placed on top and the quay is built up from additional materials being brought in by Happy Star. This is a new concept which means that fewer piles are needed compared to previous quay constructions.

Special features

All the parts for this special quay had been built in Nantong, China. Happy Star collected the first cargo of 31 piles and three jackets together with various smaller items.

These jackets were very large – 38.4*35.8*30.6 metres and represented 680 mt – and because of their size, one side of the jacket was left partly open in order to let the crane jib in for the lifting operation. Additionally, special grommet bridges were designed which ended in a central floor inside the jacket so that the grommets could remain in place during the voyage. The jackets were so high that it was not feasible to take the lifting equipment away after the jackets had been loaded.

Quay-less mooring

Since the quay was effectively on Happy Star when she arrived for her first discharge, a pre-installed mooring spread was created.

The first three jackets were positioned with the aid of the guiding piles and while Happy Star sailed back to China for a new load, the newly positioned jackets were made ready to receive the wharfdecks coming in with the next voyage.

Filled to the brim

These wharfdecks were designed to fit exactly in Happy Star's hold. This second voyage saw Happy Star being loaded to the brim, with three more jackets, three of the six wharfdecks and a great quantity of smaller items, totalling some 140,000 freight tonnes in all.

For voyage three, Happy Star will load the last jacket and the three last wharfdecks – the largest 1035 mt and measuring 56.9*25.5*6 metres – and the rest of the smaller items.

From piles to quay

When Happy Star first arrived at Weipa, she encountered a row of guiding piles in the seabed. When she leaves after unloading the third load, some three months later, a completely new quay will have arisen.



07 JUMBO BIGLIFT PROJECTS

Two years ago, in September 2015, BigLift and Jumbo Shipping separately received an invitation to bid on a Sasol project to ship 88 modules from Asia to Lake Charles, LA, US. Ten modules were built in South Korea and 78 in China at Yanda, near Nantong. Once the modules are assembled they will form part of Sasol's Chemical Plant in Lake Charles.

Joining with Jumbo
With the number and size of the modules and the tight shipping schedule, it soon became clear that neither BigLift nor any other shipping company had the capacity to perform the complete project by themselves. Jumbo Shipping was involved in its own negotiations and reached the same conclusion. Although two competitor companies in the heavy lift business, they both crucially share similar

ways of engineering and operating. Each party believed that by uniquely combining their QHSE, engineering and operational resources, a successful execution of the project could be performed together. The decision was made to join forces and Jumbo BigLift Projects was established.

The Challenge
Together the Jumbo BigLift Projects team tackled the details of the bid. This project had several challenges from the beginning. The number and size of modules meant that 20 shipments were required, with sizes going up to 150*50*50 ft (45*15*15 m) and weights as heavy as 665 mt. Another challenge was the tight schedule. The majority of the modules had to be shipped within three months, with as few as 10 days between different shipment dates.

A major technical challenge was the layout and the different shapes and sizes of the modules for lifting. Conventional lifting gear did not suffice therefore the team would need to commission two new lifting frames to be designed and built.

Jumbo BigLift Projects was awarded the contract based on the efficiency and technical insight of the team and the overall strength of their logistics and project management capability.

What convinced our client to book with Jumbo BigLift Projects?
• The number of shipments could be reduced from 20 to 14 due to efficient stowage planning and vessel types.
• The team's engineering capacity to develop

06 M.V. TRACER SHUTTLE

Although the Tracer was originally booked for just one trip, in the end, she did five voyages between Porto Marghera and Port Said.

M.v. Tracer was contracted by ISS Palumbo to ship four exchangers of 556 mt each, together with a 535 Pyro Crystal from Porto Marghera, Italy to Port Said, Egypt. While Tracer was on her first trip, the offer for a second voyage could be booked and Tracer could simply return from Port Said back to Porto Marghera to pick up a Sour Gas Absorber of about 281 mt together with 13 other pieces. And so it continued.

A third voyage was booked for two boilers of 220 mt each, not very large at 17.5*10,5*11 m, but rather stocky and well within the lifting ranges of Tracer. And a fourth journey took place, again for two boilers.

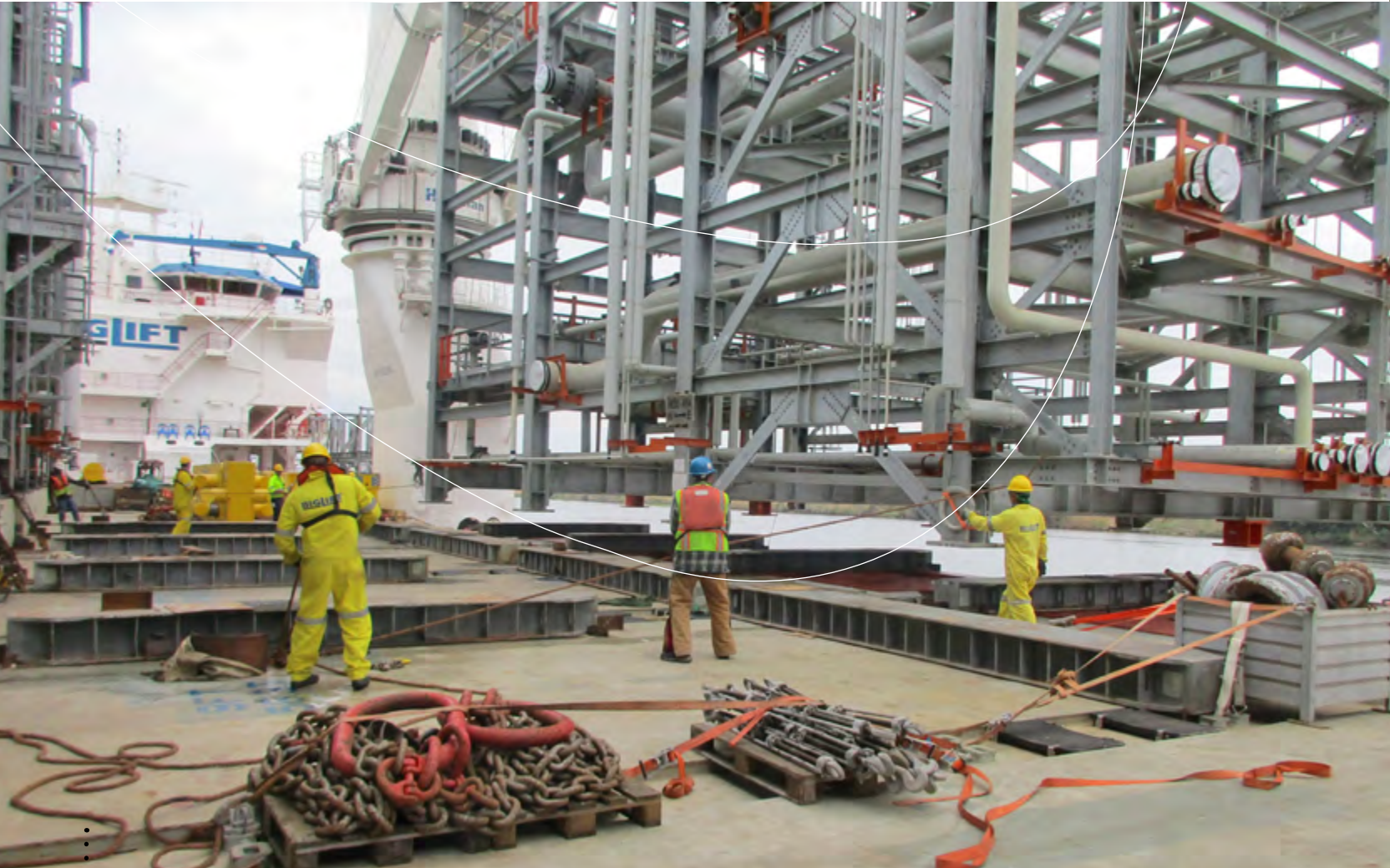
These took some extra inventiveness, as the lifting lugs were slightly out of the way and the centre of gravity was off centre. So a special lifting arrangement was developed. Even after this, another boiler followed and Tracer went back to Porto Marghera, via Ravenna, and again returned to Port Said.

Over the space of two months, BigLift was able to arrange five consecutive, dedicated voyages with the same vessel, ultimately shipping 11 large items with their auxiliary cargoes safely to the Zohr Gas Field in Egypt. This field is a recent discovery in the Shorouk Block within the Egyptian Exclusive Economic Zone in the Mediterranean Sea. The deepwater gas field is expected to start production this year and reach full capacity in 2019.



an adaptable lifting frame capable of lifting all size modules in the loading and discharge ports.

- The flexibility of scheduling and moving the joint fleet was an advantage for all parties.
- The team was able to shorten the intended route time by using SafeTrans analysis and saving 11 days per voyage by transiting the Panama Canal, in stead of the Suez Canal.
- Almost 4,650 mt of fuel was conserved.
- Creative engineering was required to further optimise the vessel intake by for instance hanging the cargo over the side of the vessel while remaining within the Panama Canal restrictions.
- Further resourceful engineering was used to accommodate modules inside some of the vessel cargo holds, by raising the ship's hatch covers.
- With dedicated technical and operational points of contact in the Netherlands and team members in the client's office once a week, the team and the client were able to keep the lines of communication short and factual.



Project time!

Upon signing the contract the lifting frames were designed and developed under the project team's supervision. In view of the short timing due to lengthy negotiations, the production of the lifting frames became the crucial element for project execution. In the end, the lifting frame took just six months to design, fabricate, test and deliver. It was right on time for the first voyage for which it was required. This loading operation took place in January by Happy Sky. The total weight of the fully assembled lifting frame is 215 mt. It was designed in a modular way so that it could be fitted to lift all 70 modules. The use of this frame reduced the port time considerably for the project

This versatile piece of equipment can be adjusted in length, and to different positions of lifting points on the modules and it is readily available for future module moves.

To the max

The lifting frame was straight away tested to its maximum, both for weight and height. One of the

first lifts that Happy Sky took on weighed around 825 mt, including the lifting frame. Furthermore, this module was so high that the available lifting height was used to its maximum: with the hook in its highest position. It was calculated that the module would clear the deck by less than 0.5 m, and it did. At the time of writing, the 14th and last ship has been loaded and has just departed Yanda, therefore the last three vessels are currently in transit to Lake Charles. The project will be finished by the end of October, when the last ship discharges the modules and sets sail for new challenges.

The Jumbo BigLift Projects unique joint venture has emerged into a productive and successful partnership. Both companies are ready to work together again for future modular projects where efficiency, creative engineering and prompt execution is required.



08 MORE CRANES FOR SANITATION NY



Deugro awarded BigLift a further contract in June to load the last four of eight Rail Mounted Gantry cranes (RMG) and transport them from Künz GmbH in Gdynia to New York.

In 2012 BigLift transported the first batch of four RMGs to New York (see BigNews 22).

An in-depth lifting study was carried out beforehand to check for potential issues and BigLift's Happy D Type vessels again provided the safest solution, because of their lifting height and jib length.

It so happened that Happy Delta was in line for this shipment; she also moved the first four. All the RMGs were loaded in single hook operations with the so-called "forklift

method" whereby two beams are positioned underneath the crane's girders.

After a smooth crossing over the Atlantic – during the previous delivery the vessel had to avoid hurricane Sandy and snowstorm Tom – Happy Delta berthed at Bayonne Terminal in New York where she discharged the RMGs on to barges.

The barges took the RMGs to two different locations which are inaccessible by any seagoing vessel because of air-draft restrictions on the Hudson River.

The delivery of these cranes rounds off the refurbishment of the New York Sanitation Terminal.



09

MSF GRILLAGE JOHAN SVERDRUP

After a very successful audit on Compliance and Supplier Quality by Aibel AS, Norway, BigLift was graded preferred supplier. The first award was the transport of the integration grillage for the drilling platform module for the Johan Sverdrup Field, one of the largest fields in the Norwegian continental shelf.

Happy Diamond loaded the total of 3,385 mt grillage parts with her own heavy lift cranes at Laem Chabang, Thailand and after a fast and safe ocean voyage installed them on the Heerema Barge H627 at Haugesund, Norway.

Good planning by Aibel and BigLift engineers made for safe and well-coordinated execution which showed in the loading, transportation and positioning operations of the integration grillage. Over the duration of the project good communication ensured proper cargo handling with no HSE incidents reported.

Once the grillage is in place, three modules will be installed by Heerema's deepwater construction vessel Thialf. The three modules, the main support frame (MSF), the drilling support module (DSM), and finally the drilling equipment set (DES), will have a total weight of 22.000 mt.

Early in the summer of 2018, the largest platform deck ever built by Aibel will be handed over to Statoil and head for the Johan Sverdrup field in the North Sea, approximately 140 km off the coast of Stavanger, Norway. Final installation will be performed by the Pioneering Spirit, Allseas' single lift installation/decommissioning and pipelay vessel.

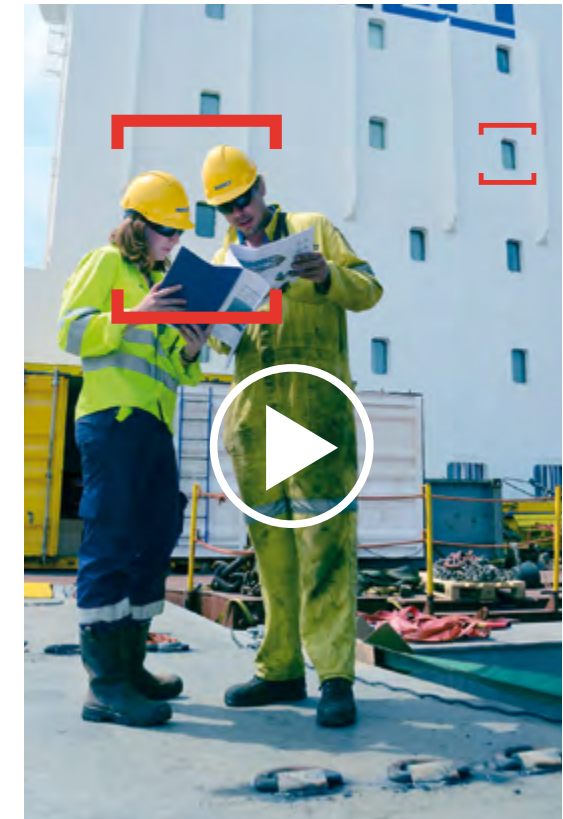
OUR SHARED
RESPONSIBILITY

SAFE SAILINGS



anywhere, anytime

10 SAFE SAILINGS



BigLift's number one priority is to see that all its personnel and vessels remain safe in every single voyage and that no harm is done to the crew, the vessel or its cargo.

As a leading heavy lift shipping company, BigLift sets its targets high and aims for zero accidents. To that end, the safety awareness programme 'Safe Sailings' has been developed and was launched last September.

Spliethoff and BigLift together already have an extensive management system that outlines all the necessary procedures. On top of this, BigLift has kicked off the Safe Sailings programme to include all employees in the company-wide desire to work as safe as possible and make this part of everyone's 'DNA', so that accidents are reduced as much as possible with the ultimate goal to reach the zero mark.

Safe Sailings was designed after thorough research amongst all BigLift personnel, both on shore and on

board of its vessels. All experiences and suggestions for improvement have been taken into account in the design of the programme. Apart from improving safety awareness and knowledge amongst all personnel, the programme will provide a platform to share and learn from feedback and improve information exchange. Twice a year, a new safety topic will be addressed. The first topic will be personal protection equipment.

BigLift is convinced that Safe Sailings will improve BigLift's overall performance further and enable all stakeholders to profit from the increased awareness.

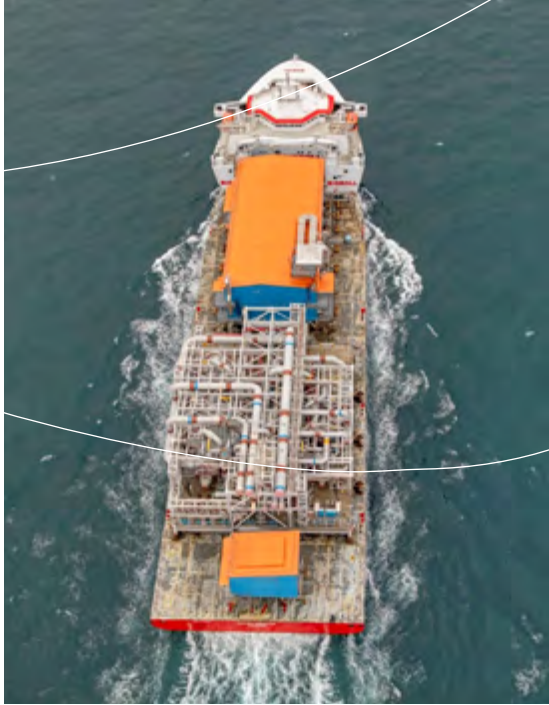
Safe Sailings – anywhere, anytime

11 SHORT NEWS

BIGLIFT GERMANY MOVED



Earlier this year, our German BigLift office moved to new premises in Hamburg Harburg. Apart from a change of scenery, the office also now houses the Spliethoff Germany representative Evert van den Brink. Our German team can be visited at Theodor-Yorck-Strasse 8, 21079 Hamburg and reached on telephone number +49-40-8090-59660.



BIGLIFT MC-CLASS

BigLift Shipping has decided to end its co-operation with Rolldock Shipping in the Joint Venture "BigRoll Shipping" from January 1st 2018. From then on, two MC Class Heavy Transport vessels will be added to the BigLift fleet as BigLift Barentsz and BigLift Baffin. The vessels offer a wide, flush deck, low fuel consumption, excellent service speed and reduced ship motions. They have already proved their worth in the market from the tropical to the Arctic regions. The addition of these two vessels will increase the capability of our fleet for even larger and heavier cargoes, both in large modular projects and in single shipments. We look forward to offering our extended capabilities to the market.

M.V. TRAVELLER SOLD

Our Tra-type vessel Traveller was sold this summer. She found a new owner in the United Arab Emirates. Our other Tra-type vessels, Tracer, Transporter and Trampler will continue plying their trade regardless.



BIGLIFT AGENCY MEETING



In June, representatives of all our worldwide offices and agencies visited our headquarters in The Netherlands to attend the bi-annual Agency Meeting. This included a wonderful day full of team building activities in Haarlem.

EXHIBITIONS & CONFERENCES

Offshore Energy
Amsterdam
10 - 11 October 2017
stand 1.185

BreakBulk Americas
Houston
18 - 19 October 2017
booth #815

CHANGES AT GIANT MARINE



Gilles Thomas retired from the industry on July 1st. He was our French General Agent for 40 years and he became involved in all the Mammoet/BigLift entities; starting with Big Lift in Dordrecht, then moving over to Mammoet in Breda and Amsterdam and finally representing BigLift Shipping in the French market. We thank him very much for all these years.

His successor as Managing Director of Giant Marine is Maxence de Broissia, who, together with old hand Paul-Henri Tanon, will continue the business in France. Maxence sailed in the French merchant navy for 10 years and subsequently worked in project management teams involved in offshore construction for Oil & Gas and offshore wind developments for the next 10 years. In Maxence we have found a representative with much experience in Offshore and EPC and we look forward to a mutually beneficial cooperation.

ISO 9001 AND 14001 CERTIFIED

Lloyd's Register recently audited and passed BigLift Shipping for two renewed ISO standards.

This comprised ISO 9001:2015 Standard for Quality Management Systems and ISO 14001:2015 Standard for Environmental Management Systems.

Since 1997 BigLift Shipping has been ISO 9001 certified. It demonstrates our ability to provide services and products consistently, meeting or even exceeding customer and regulatory requirements.

NEW STAFF



Michel Vlieland & Simon Koster

Michel and Simon both started in January as Operational Fleetmanagers in the Projects department. They deal with stevedoring and port agencies, support our commercial and project departments with port information, are responsible for lay-time and freight

invoices, in short: they take care of the commercial part of the project execution.

They both started their working life at Maritime Transport Services, acting as broker and ships' agent in the Heavy Lift industry and learning the whole process from contract negotiations to the actual operations in the port.

After a numbers of years with MTS they both decided to make a step in their career and join BigLift.

HAPPY STAR
HAPPY SUN

YEAR BUILT 2014 / EXPECTED 2018

length o.a.	156.00 m	registration Netherlands
length p.p.	147.60 m	2 cranes each 900 mt
breadth mld	29.00 m	class LLOYD'S ✕100A1
deadweight	18,374 mt	Finnish Ice class 1A
under deck	20,535 cbm	Open sailing
on deck	3,400 sqm	

HAPPY SKY

YEAR BUILT 2013

length o.a.	154.80 m	registration Netherlands
length p.p.	145.20 m	2 cranes each 900 mt
breadth mld	26.50 m	class LLOYD'S ✕100A1
deadweight	17,775 mt	Finnish Ice class 1A
under deck	20,561 cbm	Open sailing
on deck	3,250 sqm	

HAPPY BUCCANEER

YEAR BUILT 1984

length o.a.	145.89 m	registration Netherlands
length p.p.	134.00 m	2 cranes each 700 mt
breadth mld	28.30 m	ro-ro width 20.30 m
deadweight	13,740 mt	ramp capacity 2,500 mt
under deck	19,908 cbm	class LLOYD'S ✕100A1
on deck	3,067 sqm	Open sailing

HAPPY DELTA
HAPPY DIAMOND
HAPPY DOVER
HAPPY DRAGON
HAPPY DYNAMIC

YEAR BUILT 2011

length o.a.	156.93 m	registration Netherlands
length p.p.	147,75 m	2 cranes each 400 mt
breadth mld	25.60 m	1 crane 120 mt
deadweight	17,518 mt	class LLOYD'S ✕100A1 LA
under deck	20,892 cbm	Finnish Ice class 1A
on deck	2,736 sqm	Open sailing

HAPPY RIVER
HAPPY ROVER
HAPPY RANGER

YEAR BUILT 1997/1998

length o.a.	138.00 m	registration Netherlands
length p.p.	127.14 m	2 cranes each 400 mt
breadth mld	22.88 m	class LLOYD'S ✕100A1
deadweight	15,634 mt	Finnish Ice class 1A
under deck	17,863 cbm	Great Lakes fitted
on deck	2,450 sqm	Open sailing

TRACER
TRANSPORTER
TRAMPER

YEAR BUILT 1999

length o.a.	100.50 m	registration Netherlands
length p.p.	96.50 m	2 cranes each 275 mt
breadth mld	20.40 m	class BV 1 3/3 E
deadweight	8,600 mt	Ice class 1C
under deck	10,530 cbm	Great Lakes fitted
on deck	1,330 sqm	

PRODUCTION

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BIGLIFT

KEY IN HEAVY LIFT

