BIGNEWS

CORPORATE MAGAZINE | NO 28 | 2016

IN THIS ISSUE

BIGLIFT
KEY IN HEAVY LIFT

CONTENT

INTRODUCTION

Dear Reader,

It is my pleasure to introduce BigNews 28 to you. No doubt you will immediately notice that we refreshed the magazine's layout and size. Content-wise we can offer you, as usual, a nice overview of the challenging and exciting projects we have handled recently.

Our new flagship Happy Star is doing well. You can read about her delivering a wellhead production topside module for the Yadana gas field off Myanmar. Meanwhile, her sister, Happy Sky was well suited for the transportation of some very long columns for Saudi Arabia and delivered a hold-full of accompanying equipment for the same project. Happy Buccaneer, on the other side of the globe, delivered large loaders and unloaders around the China Sea.

Another eye-catching project was Happy Delta shipping 13 storage tanks. This was a challenging project – with such tanks the weight is not the issue, but the volume and fragility. The shipment was therefore heavily dependent on the ingenuity of our engineers to ensure safe and sound delivery of the tanks.

The smaller vessels in our fleet – the Tra-type – were well occupied by petrochemical projects, collecting and delivering offshore materials from and for African production sites as well as taking a large cargo of columns to the Lakes.

We also highlight a number of projects carried out by our Happy R-vessels for our loyal and long-standing client Technip. These projects show the flexibility and usefulness of our Happy R-vessels for the supply of reels and subsea umbilicals.

All of this could of course never be achieved without good cooperation between our Project and Commercial departments and the client's technical and supervising staff.

Every time, we see that early and open communication in these complicated projects gives the best results.

Arne Hubregtse
Managing Director

HAPPY STAR DELIVERS KEY PART OF YADANA FIELD EXTENSION OFFSHORE

01

SapuraAcergy awarded BigLift Shipping the transportation contract for a wellhead production topside module for the Yadana gas field, off Myanmar. BigLift had to load the module in Ulsan, Korea, and take it to the Yadana field, where SapuraAcergy's S3000 would lift it off and install it onto its offshore foundation. Happy Star loaded the topside module of just under 1,000 mt with her two 900 mt heavy lift mast cranes at Hyundai Heavy Industries in Ulsan.

The topside module is part of a production platform in the Yadana gas field, which is operated by Total Myanmar E&P. It contracted SapuraAcergy as the EPCI contractor which in turn organised the transport and installation for the platform. There was very little lead time for the project, with BigLift Shipping only having around eight weeks to prepare before the scheduled loading date. In this short time frame, all the engineering had to be done, including the planning of lifting operations, design and structural verification of the grillage and seafastening.

Lifting and Loading

The most critical element in the project was the lifting operation and the cargo had several limitations in relation to the offshore discharge. A major challenge was the orientation of the topside module on deck which had to be exactly in position for the unloading operation. To achieve the correct orientation while loading, the topside module had to be lifted from the grillage on the quayside, brought above the cargo deck between the cranes, and then rotated to its final position. Happy Star's wide beam provided ample stability and in combination with the crane capacities this ensured the shortest execution time and safest operation possible. The module's eccentric centre of gravity and size created challenges in terms of lifting clearances, safe working load (SWL) and outreach.

In the planning stages, the comprehensive 3D simulations showed that when the module was turned to its final position, the minimum clearance between the cargo and Happy Star's crane would only be a mere 700 mm! And the weeks of preparation paid off. With the support and cooperation of the client, the lift was executed perfectly and the loading went according to plan.

Grillage and seafastening

A further challenge was to design a grillage and sea fastening system capable of taking the anticipated loads and in compliance with our client's requirements. After some rough manual calculations and sketches, a detailed FEM analysis was carried out to prove the integrity of the proposed system and to identify and improve on any weak spots. The design of the seafastening system focused on easy access to the cutting locations at no more than eye height. This dispensed with the need to work at height offshore, increased safety and enhanced the ease of operation at the discharge location. The workshop drawings and Material Take Off list were delivered in time to pre-fabricate all components, even though there were several revisions due to changes in the module constraints. In all, this entire process was executed in approximately six weeks.

Practical approach
BigLift Shipping's practical approach to the project convinced both Sapura and Total that BigLift knows the ropes. Different engineering methods – elementary and fast as well as complicated and thorough – were used where necessary and applicable. The ability to distinguish between necessary and 'nice-to-have' activities were weighed off against the short time frame of the whole project. For this type of job, the practical knowledge and experience of the cargo superintendents, project engineers and ship's crew is crucial for the success of the project and it was highly appreciated by the client.

Discharge offshore Myanmar
After a short sea voyage Happy Star arrived at the discharge location offshore Myanmar to meet SapuraAcergy's S3000. The impressive crane successfully lifted the module in a single lift operation, using the slings already laid out on the module's deck and later installed it onto it's offshore foundations.

The discharge operation, including the mooring operations and lifting preparations, had been planned as carefully as the loading sequence. Happy Star was moored to two pre-laid bow anchors, and kept in place by a stern tug. Happy Star was designed with these special offshore projects in mind. Therefore, its comprehensive mooring arrangement includes Smit Brackets and strengthened bollards so that no additional measures are needed for the execution of these operations.

We look back on a project with great challenges, which were all solved to the satisfaction of the parties concerned. Happy Star lived up to all the expectations and successfully performed the job she is designed for.

A short clip of the operation can be seen here

BIGLIFT

02 CSU AND SULS TRAVELLING THE CHINA SEA

Happy Buccaneer transported a CSU and two SULs from Taiwan and China to Japan and the Philippines. Heavy weather, inventive cargo operations and sheer reliable heavy lifting power all worked to add two more satisfactory projects to Happy Buccaneer's already long C.V.

In January, Happy Buccaneer successfully carried a 1,200 mt, 45 m high Continuous Ship Unloader (CSU) from Kaohsiung, Taiwan, to Haramachi in Japan. At Haramachi thermal electric power station, Happy Buccaneer installed the CSU onto the rails from where it will operate. The CSU is a replacement for the thermal electric power station, which had been severely damaged in the devastating Tsunami in March 2011.

Engineering
The project was accomplished in close co-operation with the engineering department of our Japanese client IHI Transport Machinery Co., Ltd. The CSU was loaded and discharged by Happy Buccaneer's two, 700 mt heavy lift mast cranes (1,400 mt in tandem), using two 24 m BigLift lifting beams in the lifting arrangement. Particular challenges in this project were the high deckloads, the lifting height and the outreach that the ship's cranes needed for the installation of the CSU.

At sea
Due to the construction of the CSU, very large forces were expected on the supports of the bucket wheel boom and the ballast arm. Therefore, a detailed load-spreading plan was made to lead the forces into Happy Buccaneer's high-strength upper deck. During the voyage, the acceleration forces on the CSU were constantly monitored, using OCTOPUS-on-board, a state-of-the-art system that delivers real time vessel monitoring and supports the vessel's route planning, speed optimisation, heading and fuel consumption. Furthermore, all seafastenings were checked daily and adjusted if and when required, which is standard

procedure, thus further contributing to the safe delivery of the cargo.

Weather permitting
In mid January, the vessel sailed from Kaohsiung and arrived at Haramachi, only to be faced with a closed port due to bad weather. The ship and CSU had to ride out the storm at sea. Eventually, Happy Buccaneer berthed on January 20th and had the CSU successfully installed just two days later.

During installation at the thermal electric power station, the CSU had to pass over the conveyor belt system on the berth. This operation required a lifting height of 40 m above the wharf and a crane outreach of 14.15 m from the ship's side! Not a problem for Happy Buccaneer with her 32 years of experience; she performed excellently in the project for Haramachi port.

The next voyage
Immediately after delivery in Haramachi, Happy Buccaneer sailed to Zhangjiagang in China to load two newbuild 650 mt coal Ship Unloaders (SULs) for a new power plant in Northern Mindanao in the Philippines.

24 m Lifting Beams
The use of BigLift's 24 m lifting beams with connection frame meant that the SULs could be lifted, rather unconventionally, with their boom facing forward and aft instead of sideways. This meant that part of the seafastening could be completed prior to lifting, instead of having to do all this work after loading.
As Happy Buccaneer's cranes have such a wide reach, both machines could also be lifted directly to their stowage position without having to drive them there once on board. This saved both time and the necessity to build a rail track on board the vessel. The lifting had been carefully simulated and proved to be a tight, but safe fit. By carefully manoeuvring both machines, loading and discharging could be safely and efficiently managed.

Bridging the heights
A further challenge was the height of the machines and the nearby bridge. After departure from Zhangjiagang, Happy Buccaneer needed to pass under the Sutong Bridge that spans the mighty Yangtze River. To reduce height, the cranes were stowed on Happy Buccaneer's tween deck, which left her upperdeck hatches open in open sailing configuration. Furthermore, in close communication with our client Deugro Japan, the head charterer, the machines were initially shipped with the booms partially down.

After the cargo had been loaded and secured, Happy Buccaneer ballasted down to increase her draught and the cargo height was measured. With support from Deugro Japan, Happy Buccaneer was granted a special permit by the local authorities to allow the vessel to pass the bridge at low tide and under escort. Ship and cargo passed safely with a small, but sufficient clearance remaining.

In the Philippines, Happy Buccaneer was once again the very first vessel to berth at a newly constructed jetty. Thanks to the hard work and dedication by all the people involved, she delivered the SULs safely to their new home.

03 HAPPY STAR'S MAIDEN CALL TO THE NETHERLANDS

BigLift's newest heavy-lift vessel Happy Star arrived in the Port of Rotterdam on October 20, 2015. This was her first call in the Netherlands and she brought Damen Shipyard's largest transportation of stock vessels to date – a total of 22 vessels under and on deck.


Happy Star's Master Chris Haan receives plaque of Rotterdam's Operational Manager Ruud Hoogesteger

For this shipment, the first vessels were loaded in Shanghai and Happy Star made calls at the Vietnamese ports of Hai Phong and Da Nang and at Singapore to collect the other tugs and pontoons. The load consisted of Damen's ASD Tugs 2310, 2411 and 3212, Stan Tugs 1606, 1004 and 1907, Stan Pontoons 5213 and 3011 and FCS 2610 vessels.

04 SIX COLUMNS TRANSPORTED ACROSS THE GREAT LAKES

Last autumn m.v. Tracer sailed the Atlantic Ocean and into the Great Lakes to bring six large columns from Aviles in Spain to Duluth, U.S.A.

In September, the voyage started in Aviles where the six columns were loaded. Weights ranged from 7.4 mt to 426 mt. Four columns were stowed below and the two largest were placed on deck. Due to their weight and what's more, their size, the loading operations were challenging. The CO_2 Absorber was the heaviest being 426 mt and though it was quite something at 58.82 x 4.45 x 4.48 m, it was still not the largest. This title went to the Hot-Regenerator which was 195 mt and measured 61.8 x 3.8 x 4.03 metres.

The art of lifting

Due to the length of the two cargo pieces m.v. Tracer's fore mast on the breakwater was tilted down to make sure the cargo could be cleanly lifted over the front of the ship. With the breakwater still in the way, the cargo pieces had to stay very high above the weather deck until they were over their stowage positions. To be able to control the cargo during the lifting operation the boom of crane one was lowered as much as possible to create just sufficient space to swing the rear of the cargo in front of crane two and position the cargo over its stowage position.

Stretching to the quay

Successful lifting operations always require optimum planning by the ship and the Projects Department working together.

The stability and ballast capacity in the discharge port formed a further challenge in the operation. In Duluth, the cargo needed to be placed on shore at 7.5 m from m.v. Tracer's side, which at this weight is close to the maximum reach of the Tra-type vessels for tandem lifts. Good stability and satisfactory ballasting was achieved not only with the vessel's ballast system, but also by arranging fuel and drinking water between the vessel's tanks effectively. Of course, these actions are always part of loading and discharge operations, but it shows that all elements require attention.

Pleasing run

The voyage on the Great Lakes was impressive. It is always an intensive journey to cross the Lakes, but enjoyable too because of the beautiful environment and, when very lucky, the Northern Lights.

BIGLIFT

05 OFFSHORE QUIPMENT FOR SUBSEA 7

BigLift Shipping was contracted by Subsea 7 to ship two 'Double Jointing (D.J.) Modules' from Port Gentil, Gabon, to Rotterdam, the Netherlands. In the same voyage, nine partly loaded reels plus some empty riser reels, towers, winches and buoyancy equipment were loaded in Pointe Noire, Congo, with destinations Le Trait in France, Rotterdam, The Netherlands, Newcastle in the UK and Dusavik in Norway.

The two D.J. Modules weighed 242 mt and 224 mt and had been used on board Subsea 7's m.v. Seven Borealis for the Offshore Lianzi Development Project in Luanda and the Republic of Congo. M.v. Transporter loaded both modules, together with their crushwall platforms, with her own cranes from a barge at the anchorage of Port Gentil.

Meticulous preparations

Stowage plans were prepared in close cooperation between the Transporter, Subsea 7 and BigLift's Project Department for the successful loading operation. One of the modules had to be loaded below deck and the other on deck. As the modules arrived alongside m.v. Transporter on a barge, the barge position and the stowage of the cargo on board the vessel were crucial for a smooth operation. With every eventuality considered, both D.J. Modules were lifted by m.v. Transporter's aft crane, while the forward crane acted as additional counter ballast to ensure a safe and fast loading operation.

Tramp shipping

With this part of the operation completed, m.v. Transporter left Port Gentil anchorage as planned, and sailed for Pointe Noire in Congo. Here, she filled up to her maximum intake, loading nine empty riser reels and a number of partly loaded reels, which individually weighed between 55 and 160 mt.

In Rotterdam, the D.J. Modules and the crushwall platforms were discharged and m.v. Transporter continued her route calling into Le Trait, Newcastle and finally Dusavik. Then she was ready to take on the next project.

Lianzi Development Project

Subsea 7 West Africa was awarded the subsea installation contract for the Lianzi Development Project. The Lianzi Unit is located in the 14K/A-IMI Unit, which is in both the Block 14 Concession of the Republic of Angola and the Haute Mer Permit of the Republic of Congo in water depths of 800 to 1000 m. Two discovery wells have meanwhile been drilled in the Lianzi Unit reservoir.

The Lianzi Development Project will be tied-back to the Benguela Belize Lobito Tomboco (BBLT) platform located in Block 14 in a water depth of 390 m. The distance from the furthest Lianzi well to the BBLT platform is 27 miles and the wells will be explored via a daisy chain layout. Subsea 7 West Africa's scope includes engineering, procurement, construction and installation and testing of the facility.

06 VERY HEAVY VERY LONG

Happy Sky transported two extremely long columns and other equipment for our client JGC from Masan, South Korea, to Aramco's Jazan Refinery and Terminal project in Saudi Arabia.

With a length of 110 m and a diameter of 10 m the Xylene column was quite a challenge to move. With this length and a weight of 1,300 mt JGC sought a reliable carrier that could safely lift this column and its only slightly smaller cousin, a raffinate column which was 75 m long, 11 m in diameter and weighed 650 mt.

Early reservation

Only very few ships in the world are capable of handling such cargoes and Happy Sky is one of them. With her 1,800 mt lifting capacity and ample outreach she was perfectly equipped for this job. In order to be sure to have the vessel available when the transportation was due, JGC contracted Happy Sky in June 2014, more than a year in advance of the actual shipping dates. This is of course always a wise move when cargoes are of exceptional shapes or sizes and transportation possibilities are limited.

The people at BigLift Shipping love challenges like these and are proud to have been able to contribute to the transportation of these extraordinary cargoes for the Jazan Refinery and Terminal project.

Combination cargo

Apart from the columns on deck, Happy Sky carried a full load of project cargo in her hold. It so happened that various parts of the project were offered through different channels. In the end, Happy Sky carried a total of some 35,000 cbm of cargo for four clients which required the same discharge port.

Saudi Aramco's new Jazan Refinery

Saudi Aramco's new Jazan Refinery is a grassroots facility with an anticipated capacity of up to 400,000 barrels per day (BPD). The facility is expected to support the future development of Jazan Economic City. The additional refined products from the new facility will satisfy the growth in domestic demand from the Kingdom of Saudi Arabia.

07

DUTCH TEAMWORK

Early in 2016, Happy Delta loaded 13 steel and stainless steel storage tanks for a Saudi Arabian client in Jubail. The tanks will be used for the storage of chemicals.

For about a year, a group of Dutch companies were busy with the preparations for the consignment. Vertom was the broker, Sloot Tankbouw, the builder, Broekman, the stevedore and BigLift, the transporter.

In February 2015, Vertom inquired if BigLift could ship 13 storage tanks for Sloot Tankbouw. The largest tanks weighed 106 mt and measured 14 m diameter and were 20.8 m high. This was a unique project where BigLift pulled out all the stops to figure out how best to stow and secure these unwieldy items. And for Sloot Tankbouw this project represented its first overseas shipment.

Weight? No problem. But...
With the two 400 mt cranes on Happy D-type vessels, the tanks' weight was not the issue. However, the size, construction and stowage of the cargo, as well as designing a failsafe seafastening system made for a complex route to the final loading operation.

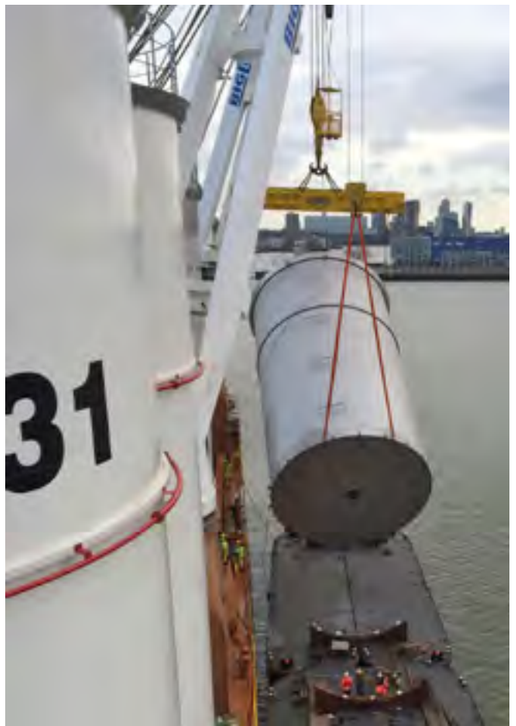
Good cooperation between the builders and BigLift's Project Department resulted in a nifty solution to fasten the fragile, thin-walled storage tanks with clips instead of using wires, which is the usual technique for securing high cargoes on board a sea-going vessel.

Vertical and horizontal cargoes
Of the 13 tanks, six were built by Sloot Tankbouw in 't Zand at OTS. They were shipped on barges in a horizontal position over the IJsselmeer, the biggest lake in the Netherlands, through Amsterdam and the Dutch inland waterway system to Rotterdam – a journey of two days. The seven other tanks were built in Rotterdam at Sloot Tankbouw's own yard in Bolnes. These were shipped by barge to the Waalhaven, but in an upright position.

Upending
In the first week of February, Happy Delta loaded all 13 storage tanks, under the watchful eye of Sloot Tankbouw and its Saudi Arabian client. The six horizontal tanks were picked up from the barge in a tandem lift operation, turned to a vertical position and placed on board.

Neighbours
Sloot Tankbouw had chosen Broekman as the stevedore for the project as Sloottankbouw is building a new production hall next door to Broekman. From May they will be able to build the tanks in ideal conditions as everything will be under their own management.
In the meantime, Happy Delta travelled to Jubail, passing the wintery, windswept Bay of Biscay and delivered all 13 tanks onto the quay in Jubail to the full satisfaction of everyone involved.

We can look back on another unique shipment with plenty of challenges but teamwork lead to a satisfactory solution.



BIGLIFT

08 CAROUSELS, REELS AND MORE FOR TECHNIP

BigLift Shipping is proud to have realised numerous shipments for our valued client Technip which is a world leader in project management, engineering and construction for the energy industry. Present in 48 countries, Technip has state-of-the-art industrial assets on all continents and operates a fleet of specialised vessels for pipeline installation and subsea construction.

In the last two years, BigLift Shipping has been awarded various contracts from Technip for the transportation of carousels, reels and other offshore equipment for three large offshore projects in Africa – TEN in Ghana, Moho in Congo and the Block 15/06 West Hub Project off Angola. Since BigLift's Happy R-type vessels are ideally suitable for these types of cargo, the shipments were all carried by Happy River, Happy Rover and Happy Ranger.

TEN Project, Ghana
Technip, as the leader of a consortium with Subsea 7, was awarded two contracts by Tullow Ghana Limited for the TEN Project which is located offshore Ghana. The TEN Project is Ghana's second major oil development. It takes its name from the three offshore fields under development – Tweneboa, Enyenra and Ntomme – which are situated in the Deepwater Tano Block, around 60 kilometres off western Ghana in a water depth of 2,000 m. First oil is scheduled for mid-2016 with a facility capacity of around 80,000 barrels of oil per day (bopd) expected to be reached in early 2017.

For the benefit of this project in ultra-deep water which needs innovation, Technip has mobilised its worldwide organisation, combining know-how and various areas of expertise. The project requires flexible pipe, which is fabricated at Technip's Flexi France facility in Le Trait, France and rigid flow lines which are made at the Group's spoolbase in Evanton, UK. For this project, Happy Ranger shipped cable reels from Mobile, USA and delivered them to Sekondi, Ghana in March.

Moho Nord Subsea Project, Congo
Moho Nord is an exploration and production project which was launched off the Congolese coast in March 2013. This huge investment

CAROUSELS, REELS AND MORE FOR TECHNIP

represents the largest oil project ever undertaken in the Republic of Congo. Technip was awarded a major lumpsum contract by Total E&P Congo for the engineering, procurement, supply, construction, installation (EPSCI) and pre-commissioning for this project. Moho is located approximately 75 km off the coast of the Republic of Congo, in water depths of between 650 and 1,100 m. The project contains two developments, the Moho Phase 1bis and Moho Nord. First oil is expected presently.
Technip's operating centre in Paris, France, is carrying out the overall project management and engineering for this fast-track, multi-disciplinary subsea project. Again, the flexible pipes are fabricated in Le Trait, and the umbilicals are constructed at the Group's new manufacturing unit in Newcastle, the UK.
Happy River and Happy Ranger were both involved in the transportation of a carousel, reels and other offshore equipment from the plants to Pointe Noire in Congo.

Angola's Block 15/06 fields
Eni's West Hub Development Project involves the initial development of the Sangos, Cinguvu and Mpungi fields, as well as subsequent development of the Mpungi North, Vandumbu and Ochigufu fields at a later stage. The deepwater offshore oilfields are located in Block 15/06 at water depths ranging from 1,000 m to 1,500 m. The Block 15/06 is located approximately 350 km north-west of Luanda, Angola, and covers approximately 2,984 km².

Production from the Sangos field was achieved in November 2014 and the Cinguvu oil field came on-stream in April 2015. The two fields are currently producing 60,000 bopd. The Mpungi field came online in January, bringing the total production to 100,000 bopd by the first quarter of 2016.

In this project Technip had to carry out the engineering, procurement, fabrication and installation of the rigid and flexible flowlines, risers and umbilicals. And on Technip's behalf Happy River transported a carousel and reels from Le Trait and the Aker facility in Moss, Norway, to Luanda, Angola.

GirRI Surf 2 Project, Angola
After the successful completion of the first phase of Total's Girassol Resources Initiatives (GirRI) project in 2012, Technip was awarded an engineering, procurement, construction and commissioning (EPIC) contract for the second phase of the GirRI project from Total E&P Angola. The field is located in block 17, 210 km offshore Angola, in a water depth of 1,300 m.

In 2015, Happy River transported a carousel and reels from the Aker facility in Moss and delivered them in Luanda, Angola.

To be continued?
These shipments are just some of many jobs we have been able to carry out for Technip. We certainly look forward to many more challenging projects in close cooperation with this valued client.

09 TO PERU

Happy Diamond delivered cargo to Iquitos in Peru. Iquitos can only be reached by air or water. The latter option requires a 2,000 mile journey along the River Amazon and its tributaries. With the aid of a guiding pilot boat sounding the waters, the vessel made it to Peru and back, much to the surprise of the locals who rarely see seagoing vessels. Iquitos only receives 10 to 15 ships a year.

10 SHORT NEWS

SKIDDING MODULES FOR PETROBRAS

Happy Star shipped three FPSO modules from Maceio and Itajai, Brasil, to Qingdao, China. On the COOEC yard, they will be installed on the P-67 FPSO.

The modules, weighing between 1265 and 1362 mt, were lifted on board in tandem lift operations. The first two were then skidded on rollers over the pre-built 100 m long skid track to their positions fore and aft on the ship's main deck. Once in position, the modules were jacked up to exchange the skidding rollers for cribbing wood and reinforced H-beams as well as load spreaders. Module number three was thereafter lifted in the remaining space.

In Qingdao, the modules were discharged onto SPMTs for further transportation on the yard.

EXHIBITIONS & CONFERENCES

Offshore Technology Conference
Houston 2 - 5 May
booth # 2427

Breakbulk Europe
Antwerp 23 - 26 May
stand 323H4

ONS, Stavanger
29 August - 1 September

Breakbulk Americas
Houston 26 - 29 September
booth # 815

Offshore Energy
Amsterdam 25 - 26 October
stand 1.129

COMMERCIAL STAFF EXPANDED

Guo Yuxiang
Yuxiang joined BigLift's Beijing office last year. He is Owner's representative in Beijing and sees to operational and commercial matters in close cooperation with the head office in Amsterdam.

Maren Detje
Maren joined BigLift Germany in January.
She started her shipping career 20 years ago with a heavy lift owner in Steinkirchen. From 2001 to 2015 she worked with a specialised project and heavy lift broker in Antwerp and Hamburg. Maren has now returned to Steinkirchen, her hometown, and she is proud to be part of BigLift's German chartering team.

Cleber Silva
Cleber joined BigLift as commercial representative for South America. He has ample experience in the EPC and EPCI world and has roots in the shipping industry. Cleber has been involved in marine related projects with several leading companies such as Allseas, Saipem and McDermott.

11 FLEET INFO

HAPPY STAR
YEAR BUILT 2014

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
TRAVELLER
YEAR BUILT 1999 / 2000

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

Editorial staff: communications@bigliftshipping.com
Pictures: BigLift Shipping, Flying Focus
Design: Vormgeving Onbekend

Follow us on:

BIGLIFT

Radarweg 36
1042 AA Amsterdam - NL
P.O. Box 2599
1000 CN Amsterdam - NL

t +31 [0] 20 - 448 83 00
f +31 [0] 20 - 448 83 33

info@bigliftshipping.com
www.bigliftshipping.com

MEMBER OF SPLIETHOFF GROUP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