NEWSBREEZE

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Formosa 1 offshore windfarm

8 SHIPMENTS 4 VESSELS ONE GOAL

POWER MEETS EFFICIENCY

Tower sections for the Haliade-X 12 MW offshore wind turbine

FAMILIAR CARGO

Adding a 320 ton sequel to our series of shiploader shipments

ANOTHER FRUITFUL COOPERATION Shipping a 342 tons Siwertell shipunloader to Norway

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BAL





FROM THE CEO DESK

Dear reader,

While we continue to be blessed with long summer days here in northern Europe, the autumn is approaching fast, and soon we will have seen another year rush by in rapid pace. It addresses the topic of time. Often we do not recognize how far we have come but look at how far we still have to go. We are so focussed on striving further and reaching higher that one forgets the long path we have already walked. In fact, in a few months we celebrate the 30th anniversary of Harren & Partner, and another few months further down the road, SAL sets 40 candles in its cake. The development and the transition of our companies is mind-blowing to me.

German philosopher Goethe once stated: "Erfolg hat drei Buchstaben – Tun " – it can be translated to "success comes from doing". We do! Ambition and hard work are what takes us onwards, yet we try to have fun while doing it.

And while we look ambitious on the future, we remain excited about the present and very proud of the past. Some of our most recent endeavours you will also come to see in this issue of Newsbreeze.

Enjoy your reading,

Martin Harren

CEO

Shipping tower sections, blades and nacelles for the Formosa 1 offshore windfarm

8 SHIPMENTS 4 VESSELS ONE GOAL

"We have been very pleased to have SAL as one of our key partners for the Formosa 1 Phase 2 Project. The end result and delivery has been very positive, which has also been recognized by our end customer." Nicolai N. Andersen, DHL Industrial Projects

FORMOSA 1 OFFSHORE WINDFARM

ffshore wind energy advance the necessary transformation for a future powered by sustainable energy. The offshore wind sector is booming these years, where global power demand and strong political incentive has driven the wind technology far ahead and the scale of wind parks to become ever greater. One of the latest windfarms to undergo construction is the Formosa 1 offshore windfarm near Miaoli, off the west coast of Taiwan, where several SAL vessels have been involved with shipments of tower sections, blades and nacelles.

Tower sections, blades and nacelles are well-known cargo for us at SAL. The knowledge and expertise we gathered in the past years by shipping wind equipment was again put to the test, when we were assigned a total of eight shipments for the Formosa 1 Phase 2 windfarm development.

"In total four of our vessels were involved in the project with eight shipments", says Jan-Peter Esbensen, Senior Commercial Director at SAL in Denmark, "our Type 176 vessels MV Regine, MV Anne-Sofie and MV Trina were chartered for three shipments of blades and nacelles. On top our Type 161A vessel MV Paula was assigned to transport tower sections within an additional five shipments."

MV Regine completed the first shipment of five nacelles, measuring $20 \times 7.90 \times 10.56$ metres and weighing 378 tons each, and an additional twelve blades, measuring $75.42 \times 3.97 \times 5.34$ metres and weighing 34 tons each from Cuxhaven, Germany and Aalborg, Denmark to Taichung, Taiwan.

Subsequently MV Anne-Sofie transported another five nacelles and nine blades to Taichung and MV Trina successfully completed the series with another five nacelles and twelve blades.

But this is not where the job ended: The Type 161A vessel MV Paula was also involved in the project and offered a tower section shuttle service from Phu My, Vietnam to Taichung, Taiwan. In total she transported 60 tower sections with a total of four tower sets (twelve units) per shipment. Each tower set consisted of a tower bottom (179 tons each, 22.21 \times 6 \times 6.33 metres), a tower mid (144 tons each, 24.52 \times 6 \times 6.33 metres) and a tower top (160.5 tons each, 37.28 \times 6 \times 6.33 metres). In combination the tower sections are larger than the fuselage of a Boeing 787.

"Formosa has been a challenging project with critical milestone dates and right from the beginning it called for innovative solutions in order to deliver the turbines most efficiently, safely and on-time. Therefore we are really satisfied with the good cooperation with SAL throughout the entire sales phase until final execution and delivery", states Nicolai N. Andersen from DHL Industrial Projects, "We appreciate the good and honest dialog back and forth which has ensured a smooth cooperation, with clear lines of communication and no unnecessary misunderstandings."

The 120MW Formosa 1 Phase 2 windfarm will comprise 20 Siemens Gamesa 6 MW wind turbines installed on monopile foundations some six kilometres off the west coast of the Miaoli district in the Taiwan Strait. The wind farm is an extension to the existing Formosa 1 Phase 1 and is scheduled to be operational in 2020. \ddagger

A powerful Fly-Jib extension for SAL's Type 183 vessels





ost heavy lift cargoes are unique and therefore require specialized lifting solutions and careful planning. The demand to reach further and lift ever growing units of cargo rises, which again calls for specialized lifting tools. After thorough planning, SAL Engineering successfully designed and engineered a modular Fly-Jib extension for SAL's Type 183 vessels, offering clients new possibilities as well as an unrivalled lifting height and capacity.

With up to 23 metres of additional lifting height and reach, the Fly-Jib has been designed for the cranes of SAL's vessels MV Lone and MV Svenja. Together with crane maker TTS-NMF, the experts at SAL Engineering developed the tool which is now available for SAL's Type 183 vessels.

"Sometimes good things take a while: It was in November 2011 when we had the initial idea and kicked off the development of a Fly-Jib by asking NMF for a five to seven metres extension with 150 tons lifting capacity. Then development stood still for almost seven years until an interesting project came up. Now, almost eight years later, we are having a 23 metre extension with 500 tons lifting capacity," states Karsten Behrens, General Manager at SAL Engineering with pride. He adds: "The main technical development of the Fly-Jib was already carried out after the initial idea formed back in 2011. And although SAL Engineering played around with a lot of different variations of the tool for different projects between 2012 and 2018, there was no real further technical progress until the right project was found and the investment could finally be made."

The development of the Fly-Jib turned into a project itself and as always projects come with their challenges: The design and manufacturing of the Fly-Jib had to be realised within 26 weeks only. It was found possible to make a modular design which increases its scope of use and furthermore the design entailed that the Fly-Jib can be angled to allow for different lifting positions as well as to secure it during sea passages. This way no time for dismantling and reinstallation of the tool will be lost – essential for time-sensitive projects.

FLY-JIB EXTENSION

MORE CRANE HEIGHT, GREATER OUTREACH

FLY-JIB

- Short configuration: 13 metres, maximum SWL of 625 tons
- Long configuration: 23 metres, maximum SWL of 500 tons

In early May 2019 the Fly-Jib was successfully installed onto MV Lone's aft crane with testing and commissioning as part of an offshore project mobilisation. However once this project is finished the benefits for SAL will not end: "*This new tool lifts SAL into a new world of possibilities,*" says Justin Archard, COO at SAL Heavy Lift, "whether it is for oil & gas or offshore wind energy projects, the Fly-Jib creates new opportunities to lift extra-long units vertically or reach much further with its crane boom."

With four adjustable Fly-Jib angles and two jib lengths, different lifting configurations are possible providing perfect flexibility: The short configuration adds 13 metres of length and raises the lifting capacity with a maximum SWL of 625 tons. The long configuration adds 23 metres of length and raises the lifting capacity with a maximum SWL of 500 tons. Furthermore the Fly-Jib was designed to be dismountable, and interchangeable between each of the Type 183 vessels' cranes.

Sebastian Westphal, Corporate Director – Ship Management & Engineering adds: *"It has been a significant achievement*

from the entire team behind, from design to manufacturing and then later to installation during a project's vessel mobilization. It is great to see now that the concept works so well in reality and that the installation procedure of mounting the Fly-Jib onto the existing crane boom proceeded quickly and with no compromise on quality – it is no small thing that you attach, and the lifting capabilities the vessel gains with it are tremendous."

MV Lone with Fly-Jib (long configuration)

Besides making the Type 183 vessels a versatile marine platform for installation and transportation, the Fly-Jib, which towers more than 70 metres above the water line, is also designed to withstand the forces occurring during a sea voyage. Furthermore it can be installed using only the vessels existing cranes. This can be particularly useful whenever the vessel is loading or lifting in remote areas.

If you are interested to learn more about our Fly-Jib, feel free to contact our Marine Project Department via enquiry@sal-heavylift.com. $\mathring{\downarrow}$



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