

PASSION

PALFINGER MARINE MAGAZINE | N° 2/18



PALFINGER MARINE ELECTRIFIES

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**ONBOARD THE WORLD'S LARGEST
LIVE FISH CARRIER**

Fenders:

LNG ON THE RISE



Gunther Fleck

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Dear customers, partners and friends,

recently PALFINGER presented its new vision entitled "Together we are shaping the future of our customers' lifting solutions." For us, this means making our customers' lives easier by thinking of not only products but solutions.

Developing innovative lifting solutions is our core business. Our cover story introduces our electric product portfolio. The first of our electric offshore cranes have already been installed at the Johan Sverdrup field, and our electric wind cranes are already our bestseller. The portfolio is about to be extended now with our new, fully electric davit. We are proud to present the davit at SMM in Hamburg and look forward to meeting you at our booth.

Our aim is not only to provide innovative and reliable products, but also to provide comprehensive service through our extensive network of service locations. Get to know our service experts with exclusive insights on how to service an offshore wind crane.

If you prefer experiencing our cranes in action, I invite you to come aboard the world's largest live fish carrier. We accompanied *Ro Fjell* to the Frøya/Hitra region. *Ro Fjell* is equipped with seven marine cranes and can transport 700 tons of live salmon.

You didn't know that we have fenders in our product portfolio as well? Then you shouldn't miss our fenders story, where Åsmund Lilleaas talks about the delivery of a fender package to the world's first purpose-built LNG bunkering vessel. This market is developing into a promising segment.

All of our stories and more are also available online at our PALFINGER MARINE Stories blog.

Enjoy reading our latest PASSION magazine!

Kind regards,

Gunther Fleck

Executive Vice President Sales and Service
PALFINGER MARINE



PALFINGER MARINE ELECTRIFIES

PALFINGER MARINE HAS ALWAYS BEEN AT THE FOREFRONT OF TECHNOLOGICAL DEVELOPMENTS, NOT LEAST IN ORDER TO SATISFY AND PRE-EMPT THE NEEDS OF OUR CUSTOMERS.

Our goal is to offer the best and most competitive solutions. Naturally, the same applies to our ever-expanding range of electric products. Let us tell you what we are doing now and what you can expect in the future. As many of you may already know, electric solutions are currently more common in some of our product groups than in others. In terms of winches, no less than 80 percent of our deliveries are already equipped with electric drivelines. Our electric platform cranes are also no unusual sight

on offshore wind farms. Since 2014, PALFINGER MARINE has supplied almost 660 electric platform cranes. However, we have never been the kind of company to rest on its laurels. So it should come as no surprise that we are also innovators in this field. It is our aim to complement our hydraulic product range with electric innovations in the areas where it benefits our customers most. To illustrate this, we would like to introduce two of our latest product developments. But first things first...

ELECTRIC WINCHES AND PF-CRANE SERIES AS PRECURSORS

As mentioned above, more than 80 percent of the winches we deliver to customers are already equipped with electric drivelines. Sverre Mowinckel-Nilsen, our Sales Director of the Winches and Handling Equipment Division, reveals that the trend towards electric winches started in 2005/2006, and demand has been on the rise ever since. He adds that electric winches were initially more expensive than their hydraulic counterparts, but prices have now levelled out. Seeing that electric winches are easier to install due to the fact that they don't require hydraulic piping on the vessel itself and offer lower noise levels, it seems only logical that the popularity of such solutions is increasing. Nevertheless, all PALFINGER MARINE winches – with very few exceptions – remain available with both hydraulic and electric configuration. The second aforementioned success story in terms of electric systems involves our platform cranes on offshore wind farms. Electric platform cranes are considered to be more environmentally friendly and follow the zero emission strategy within the green energy market. In terms of maintenance, it makes a huge difference when there is no hydraulic oil involved. As mentioned, almost 660 of our PF-series cranes are already in operation, 150 of them at the Gemini wind farm off the coast of the Netherlands and 116 at the Rampion wind farm off the coast of Sussex in the United Kingdom. Rampion is a perfect example for how much easier it is to service electric platform cranes, as we also won the service tender for this wind farm. Our annual maintenance of the cranes has run very smoothly for the last two years. We were exceptionally quick, too. Seeing

that each of our teams managed to service three cranes per day, the whole project took no longer than one and a half months. This saves time and money for the customer with regard to planning and offshore logistics.

THE ELECTRIC INNOVATOR FOR OFFSHORE WIND LIFTING SOLUTIONS

“Alongside our PF-series, which is fully electric and has a lifting capacity of 1 tonne, we will complement our customised offshore wind farm product portfolio with the PSW-series, which is a hybrid crane with a lifting capacity of 2 tonnes. Our new PSW36000 crane is currently in development, and a prototype will be launched early next year. The special feature of this innovation is a hybrid setup: the winch is electric, but the slewing and cylinder are hydraulic. Given that the winch on offshore wind cranes usually accounts for two thirds of the oil consumption, an electric winch results in a dramatic decrease in oil usage. This new crane will have the same lifting capacity as our well proven bestseller crane (PSM400), its fully hydraulic counterpart, but will use 35 litres of oil instead of 200 to 250 litres. In addition, the winch and power pack of the PSW36000 will be integrated in the lower crane columns, thus making it even easier to service,” explains Johann Gnasmüller, Head of R&D in the Product Division Cranes.

What other innovations does PALFINGER MARINE have in store, you ask? Two of our most exciting projects are the ongoing delivery of seven fully electric DKW2500 cranes to Equinor's Johan Sverdrup offshore oil field in the North Sea, as well as the development of an electric davit.

WE ARE THE FIRST COMPANY TO DEVELOP CRANES FOR SUCH AN ENVIRONMENT THAT USE STANDARD AC MOTORS, SOMETHING WHICH OUR COMPETITORS THOUGHT WAS IMPOSSIBLE IN THE PAST.

Jan Silgjerd
Sales Director - Cranes



Johan Sverdrup oil field in the North Sea, © Roar Linderfeld/Bo Randulff, Equinor

CONQUERING THE NORTH SEA

To understand the innovation level of DKW2500 cranes, it is important to point out that it is comparatively simple to “electrify” a crane that merely has to lift/lower and slew without adhering to specific safety requirements. Delivering electric cranes to an oil platform in the North Sea is, however, quite complicated. The reaction time of the winches in use has to comply, for instance, with the EN and NORSOK standards. Not only are our DKW2500 cranes designed to operate safely in extreme North Sea conditions with waves of up to six metres in height, but they also boast safety features such as AOPS and MOPS (Automatic and Manual Overload Protection Systems). Jan Silgjerd, our Sales Director of the Cranes Division, points out: “We are the first company to develop cranes for such an environment that use standard AC motors, something which our competitors thought was impossible in the past. They meet the highest EN and NORSOK standards, thus optimising the reaction time

in dangerous situations.” In short: whatever you throw at the DKW2500, it's capable of handling it. Once again, the electric nature of the DKW2500 results in a lower cost of ownership and makes it more reliable in terms of its original parameters. As if that isn't enough upside, the DKW2500 offers smoother and more predictable operation at lower noise and vibration levels.

A BRIGHT FUTURE FOR UNMANNED PLATFORMS

This is certainly a product group with a bright future. The use of electric cranes is, after all, also particularly interesting for unmanned offshore oil platforms because less maintenance is required: “It is easier to have an electric crane out in operation for a long time than a hydraulic one.” PALFINGER MARINE is currently in talks with several potential customers about using electric cranes for new unmanned platforms. Recent market developments affirm that we are on the right track in terms of our electric product portfolio.

THE ALL-NEW ELECTRIC DAVIT

But now it's time to turn our attention to a project that we are especially excited about: our electric davit based on completely new technology. We are currently building a prototype that will be presented in September in time for the SMM, the leading international maritime trade fair in Hamburg. What better platform could there be for us to underline our status as a true industry innovator?

To find out why there is a demand for electric deck equipment, we sat down for a chat with Trond Paulsen, our Technical Sales Director of the Boats and Davits Product Division. "Apart from all the aforementioned advantages of electric solutions, the new electric davit will boast a totally enclosed design, meaning that all vital components are protected. Generally, electric power makes it possible to use smaller, lighter and more cost-efficient components," Trond explains.

Now some may argue that traditional lifeboat winches were already electric. He, however, adds: "These were either equipped with a centrifugal break or electric hoisting with a fully enclosed hydraulic lowering system. We are proud to reveal that PALFINGER MARINE is about to be the first company to use magnetic breaks for its lifeboat winches. While centrifugal breaks are especially high-maintenance, our new magnetic breaks suffer almost no wear-and-tear. This is due to the fact that the magnets governing the speed of the lifeboats don't touch each other at all. Yet another innovation is a rack system to deploy and move the davit itself. It replaces the old cylinder system. Now an electric motor on a pinion wheel moves up and down the rack."

SAFE, SIMPLE AND EASY TO IMPLEMENT IN EXISTING DAVIT SYSTEMS

The great advantage of this new technology is that all its components can be implemented in our existing davit systems. We could therefore, for instance, quite easily "electrify" all of our NPDS models. Furthermore, it allows us to experiment with different and new davit production materials such as glass reinforced plastic (GRP) and carbon fibres to make the structure of the davit lighter as a whole.

Trond is eager to point out that the electric davit is safe and simple, as are all electric PALFINGER MARINE products. He gushes: "The lack of complex hydraulic systems and pipes subjected to wind and weather mean that the new electric davit harbours less spillage risk and is much easier to maintain. After all, it's easier to service one electric motor attached directly to the winch than an electric motor on the power pack and a hydraulic one on the winch. It is also simpler to find, diagnose, and fix problems. Our engineers, who no longer need special hydraulic skills, now merely need to plug the diagnostics tool into the electric davit to see what needs to be done."

INCREASING DEMAND FOR ELECTRIC DAVIT SYSTEMS

Alex Schouten, Sales Director of the Boats and Davits Product Division, confirms: "There is substantial demand for electric davit systems in all segments. Many clients are keen on an electric davit alternative to the systems operated

by hydraulic- or gravity-based solutions. The trend to electric equipment is mainly driven by the desire to have fewer critical elements. Being able to focus crew skills in terms of operation, maintenance, and troubleshooting on electric know-how is a real plus. Furthermore, recent technological advancements of electric drive systems and battery packs have promoted the trend, thus making such solutions more attractive."

All in all, it is safe to say that PALFINGER MARINE is once again leading the way in terms of offering its customers innovative, future-oriented, and practical products. We are looking forward to presenting our newest developments to a broader audience. See you at the SMM!



Our NPDS 1500e.

THERE IS SUBSTANTIAL DEMAND FOR ELECTRIC DAVIT SYSTEMS IN ALL SEGMENTS. THE TREND TO ELECTRIC EQUIPMENT IS MAINLY DRIVEN BY THE DESIRE TO HAVE FEWER CRITICAL ELEMENTS.

Alex Schouten
Sales Director - Boats & Davits

GET FIRST-HAND INFORMATION FROM OUR COLLEAGUES AT:

SMM

P DECK EQUIPMENT
BOOTH: A1.204

P BOATS AND DAVITS
BOOTH: B5.326

ANYTHING BUT FISHY BUSINESS

Fish farming – also known as aquaculture – is big business in Norway. In 2017, the country's fish farms supplied no less than 1,289,808 tonnes of fish for food. 94.5% of this amount was salmon, while rainbow trout comes in as a distant second at 5.1%. How does PALFINGER MARINE contribute to the industry that provides the tasty fish we all – or at least most of us – love? Well, many of the vessels involved are equipped with our cranes. Let us explain ...

PALFINGER MARINE IS A RELIABLE PARTNER OF THE AQUACULTURE INDUSTRY. OUR CRANES ARE AN IDEAL FIT FOR FISH FARMING VESSELS. WE TRAVELLED TO NORWAY TO TAKE A LOOK AT A BUSINESS SEGMENT THAT OFFERS HUGE POTENTIAL.

THE VESSELS

Bernd Huemer, our Sales Manager for the Cranes Division EMEA, can shed some light on the topic: "The fishing industry generally uses two types of vessels. On the one hand, there are fishing vessels such as trawlers, purse seiners and longliners. On the other hand, we have fish farming vessels such as live fish carriers and service vessels. The latter offer enormous potential for PALFINGER MARINE." When asked which of our products the shipyards involved favour, Bernd adds:

Live fish carrier Ro Fjell and two service vessels in operation in the Frøya/Hitra region.

“We have equipped many service vessels with our foldable knuckle cranes (PK-series), while live fish carriers are often equipped with our telescopic boom cranes (PTM-series) for hose handling and lifting.” Well boats, as live fish carriers are also called, have grown in size considerably over the last five to ten years, mainly due to an increase in fish farming in Norway and Scotland. In the last five years, PALFINGER MARINE has sold more than 50 PTM cranes to live fish carriers in Norway. Apart from the Norwegian fish farming industry, Croatia is a well-established market for PALFINGER MARINE. Recently, we entered the fish farming markets in Canada, Chile and the Pacific Northwest.

A LONG LASTING PARTNERSHIP

We also sat down with Christian Hoff, the General Manager of Bergen Hydraulic, the exclusive PALFINGER MARINE crane dealer for Norway. Since the start of this close cooperation in 1992, the company has sold no less than 2,100 of our cranes. So Christian knows why the aquaculture players are so fond of our equipment: “The cranes are flexible, light and well-designed. We are in close contact with all ship owners, naval architects and shipyards. I am proud to say that we have sold cranes to most service vessel and live fish carrier owners and builders based in Norway.” We were eager to find out more about how fish farming works and soon found out that Christian is the right person to ask. “In a perfect world, a live fish carrier travels to a fish farm unit only twice: to deliver smolt and to pick up grown fish one and a half years later. However, such vessels are also used for the delousing of aquaculture cages. These cages, of which there can be up to ten per location, hold as many as 150,000 salmon weighing between four and six kilograms.” What about the service vessels? Christian smiles: “As the name suggests, the service vessels are required for day-to-day maintenance work, but can also be used for anchoring and towing.”

ONBOARD THE WORLD'S LARGEST LIVE FISH CARRIER

PALFINGER MARINE is particularly proud of the fact that the *Ro Fjell*, the largest live fish carrier in the world, boasts five PTM 600 cranes, one PTM 1200 crane and one PS 23500 crane. Jan Huus, the Head of Aftermarket at Bergen Hydraulic, knows more: “The *Ro Fjell*, owned by Rostein, usually works for SalMar Farming in the Frøya/Hitra region. It can transport 700 tonnes of live salmon in two tanks with a combined volume of 4,500 cubic metres. The cranes we supplied are used for holding the two-way hoses and the net around the fish farming unit.” Rostein is the second largest well boat company worldwide. All of its 14 vessels are equipped with PALFINGER MARINE cranes. Given this close partnership, we had the opportunity to spend some time on the *Ro Fjell* in June this year. We took some spectacular photos while on board and are thrilled to share them with you in this issue of our magazine. Come and see for yourself!





Engie Zeebrugge equipped with PALFINGER MARINE fenders and fender davits, © Port of Zeebrugge



PALFINGER MARINE fender davits: NFD2500H-2035

LNG ON THE RISE

Ships powered by liquefied natural gas (LNG) are becoming increasingly popular. Last year, approximately 11 percent of all new-build contracts were for LNG-powered vessels. Driven by the desire for cleaner burning alternative fuels, this trend is expected to persist and grow. Another reason for the rising demand is that the LNG bunkering infrastructure is maturing. This is where PALFINGER MARINE comes into play, especially as we are the only company that manufactures both fenders and fender davits in-house. While other fender suppliers are forced to rely on partners in terms of davit production, they are part of PALFINGER MARINE's product portfolio. This is indeed a competitive advantage.

PALFINGER MARINE DELIVERED A FENDER PACKAGE TO THE WORLD'S FIRST PURPOSE-BUILT LNG BUNKERING VESSEL. WHAT WAS ONCE A NICHE MARKET IS SWIFTLY DEVELOPING INTO AN EXCELLENT BUSINESS OPPORTUNITY. ÅSMUND LILLEAAS, OUR DIRECTOR FOR THE FENDERS DIVISION, EXPLAINS WHY.

The more LNG-powered ships there are, the more bunkering vessels are required. Just to explain: the latter store the LNG and deliver it to other ships for refuelling purposes. Seeing that the fuel transfer is a ship-to-ship operation, the majority of bunkering vessels

are designed to have fenders and fender davits on board.

FROM NICHE TO OPPORTUNITY

Åsmund acknowledges freely that fender davits have been niche products so far: "In the past, they were ordered for some tankers or FPSOs (Floating Production Storage and Offloading Units). Generally speaking, fender davits are not required by vessels that travel from port to port, such

as cruise ships, car ferries, and container ships. After all, ports have their own fenders installed. And yes – just in case you're wondering – our fenders can be found in many harbours around the globe."

The fenders of choice are normally pneumatic rubber fenders, in accordance with the ISO 17357-1:2014 standard. These fenders are custom-made for heavy duty offshore and ship-to-ship operations, and subject to proper maintenance they will endure 15 years or more. The main advantage of our fender davits is that they boast a fully enclosed design, which means that all components, such as wiring and hydraulics, are protected from wind and weather. Apart from lower maintenance costs, their "plug and play" system ensures easy installation and allows the fenders to be deployed and retrieved via remote control whenever needed. This creates a safer working environment for the crew on board. It therefore comes as no surprise that PALFINGER MARINE had the honour of supplying a fender package to the *Engie Zeebrugge*, the world's very first purpose-built LNG bunkering vessel. Åsmund points out that the *Engie Zeebrugge* was equipped with four NFD2500H fender davits and four NPF2540C pneumatic fenders.

NEW GROWTH SEGMENTS

"The LNG bunkering segment is, however, not the only area that promises growth for our Fender Division," Åsmund adds. "Our products are also very attractive to the FSRU (Floating Storage Regasification Unit) market. Rather than storing fenders in the water permanently or having to rely on local suppliers towing the equipment to the site, FSRUs can opt for storing fenders on board and deploy them via davits whenever required. This also applies to other floating production and storage units, such as FLNGs (Floating Liquid Natural Gas Facilities) and FSOs (Floating Storage and Offloading Units). Fender davits are definitely the safest and most efficient way of handling large fenders for ship-to-ship operations." PALFINGER MARINE is proud to be contributing to the LNG trend and all technological advances it may bring in the future.

ÅSMUND LILLEAAS

The Director of our Fender Systems Division joined the PALFINGER MARINE family when PALFINGER acquired Harding in 2016. At the time of the takeover, Åsmund was the Managing Director of Noreq Fender, a subsidiary of Harding. With the support of a small team, the 36-year-old Norwegian is in charge of global production and sales.



HOW TO SERVICE AN OFFSHORE WIND CRANE

Approximately 45 km off the Borkum Islands in the North Sea, the Merkur offshore wind farm is in development – and it's set to be one of the biggest of its kind in Germany. With a project capacity of 396 MW, it will supply renewable power to more than 500,000 homes. PALFINGER MARINE is proud to be supplying 66 platform cranes (PSM 400) and has recently won the retrofit contract, too.

ANNUAL CRANE SERVICING CONTRACTS

Wind cranes have to be serviced once a year, with annual service contracts generally including a service and inspection campaign. The scope of service depends on various country regulations – wind cranes in German seas, for example, require yearly UVV approval.

Our ability to safely and efficiently service cranes relies hugely on the weather. "Annual service is a very seasonal business, with high season between April and June," says Frank van der Tuijn, Service Coordinator, Wind Cranes. "You can't go offshore in bad weather – and this can be as often as 50% of the time." When the weather allows, the service engineers leave their onshore base and go out to the site by boat. Usually working in teams of two or three, they service two cranes per day.

CRANE SERVICING IS A BOOMING SECTOR FOR PALFINGER MARINE.

CLOSE TO OUR CUSTOMERS

PALFINGER MARINE's service engineers are based in Schiedam (the Netherlands), Odense (Denmark), and Dägeling (Germany), too. That's where commissioning and service jobs are coordinated and handled. "Having different service stations means we're closer to the customer, which is indeed a big advantage," says Frank.

The service experts located in Salzburg (Austria) serve as consultants for complex inquiries, modification projects and warranty cases. They give support and training to PALFINGER MARINE service engineers. As far as the training is concerned, "all of our engineers have a Global Wind Organisation (GWO) certification, and we invest in comprehensive product training, so they can get to know our cranes by heart. This is just one part of being an original equipment manufacturer (OEM) – an indication of the high quality of service we provide," Roland Pirzl, Service Manager Wind Cranes, points out. "Another massive plus of being an OEM is that all spare parts come from us, thus ensuring the availability of these parts for a crane's lifetime and longer."



Commissioning of our 66 PSM 400 in Spain.

TAILOR-MADE SOLUTIONS

Service Expert of Wind Cranes, Steven Klein, played a central role in commissioning the 66 cranes for the Merkur project, which took place at the transition piece (TP) construction yard in Spain. Along with three service engineers from the Schiedam office, they then ran full-function tests on all of the cranes.

During the commissioning job, Steven realised that the cranes required a modification in the slewing area. He and the expert team in Salzburg set to work developing a tailor-made slewing limitation kit, a tweak that greatly optimises the cranes' functionality. "We always strive to find the best solution for every client and every project," Steven highlights. The modification work will be implemented offshore by our service engineers.

After the successful commissioning, the TPs were transported to Eemshaven in the Netherlands, from where they are shipped for offshore installation, a process that is currently underway.

What's more, PALFINGER MARINE also runs operator trainings for the Merkur offshore wind farm and has trained and certified over 100 people to safely work with our cranes since February 2018.

A LOOK TO THE FUTURE

PALFINGER MARINE was contracted to conduct the annual service for several other wind farms: Rampion, Racebank, Hohe See, Borkum Riffgrund, Teesside, Veja Mate, Godewind, Hornsea, Gemini and WODS. Needless to say, it's a busy time for us - and there are no signs of things slowing down. In fact, the potential is huge. After all, PALFINGER MARINE is already the supplier of almost 2,600 wind cranes, plus 1,000 more from Noreq Acta through the recent acquisition of Harding. And, as annual service tenders run on a yearly basis, there's definitely more to come.

Market development is also on our side. Due to European efforts to reduce CO2, wind turbines are being used more and more to produce energy.

No wonder, then, that we here at PALFINGER MARINE are excited to see how the future of offshore wind energy will look. And how the work of our service engineering team will grow in scope.

MEET US

PALFINGER MARINE AT FIRST HAND

Feel like reading our PASSION magazine on your computer or mobile device? No problem at all: check out our PALFINGER MARINE Stories blog.

In this online magazine, we blog about trending topics within our marine world. These may be order-related news, exciting product innovations, interesting personalities, industry trends, events, and behind-the-scenes reports to complement our PASSION magazine.

Apart from hot topics, it also features all articles published in the print edition of PASSION magazine. The added value of PALFINGER MARINE Stories is that it allows us to dive deeper into specific stories. It's our platform to share additional background information and images, as well as exclusive video material.

PALFINGERMARINESTORIES.COM

UPCOMING EXHIBITIONS

SMM
04.09.-07.09.2018 | [Hamburg, Germany](#)

RIO OIL AND GAS
24.09.-27.09.2018 | [Rio de Janeiro, Brazil](#)

WIND ENERGY
25.09.-28.09.2018 | [Hamburg, Germany](#)

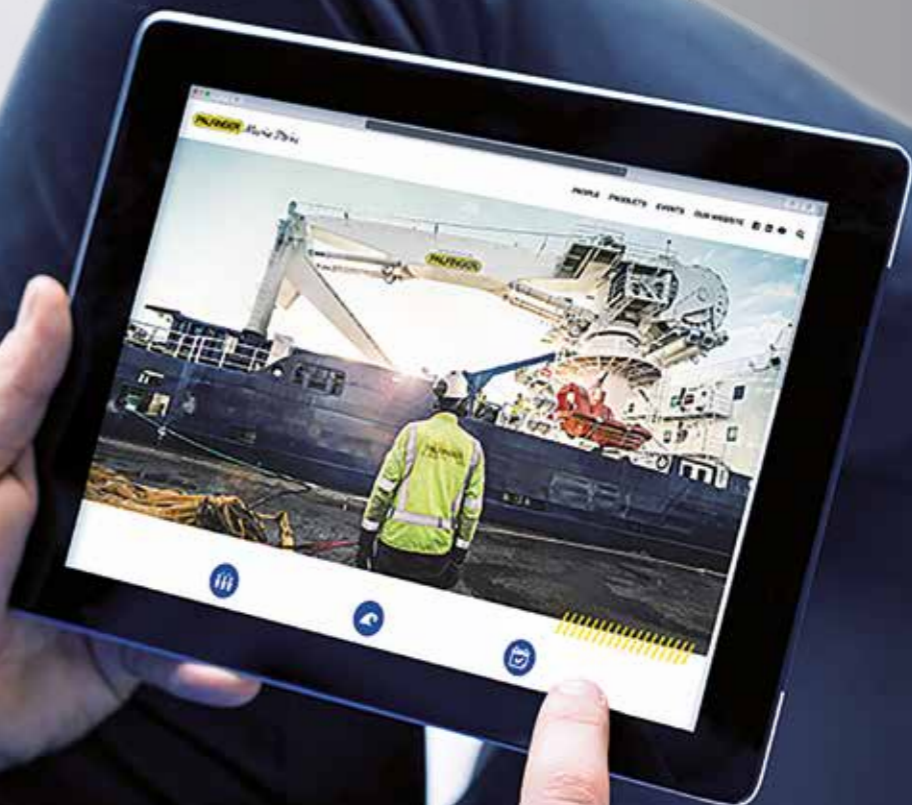
PACIFIC MARINE EXPO
18.11.-20.11.2018 | [Seattle, USA](#)

INTERNATIONAL WORKBOAT SHOW
28.11.-30.11.2018 | [New Orleans, USA](#)

SEATRADE CRUISE GLOBAL
08.04.-11.04.2019 | [Miami, USA](#)

OTC
06.05.-09.05.2019 | [Houston, USA](#)

NOR-SHIPING
04.06.-07.06.2019 | [Oslo, Norway](#)



PALFINGER MARINE ON INSTAGRAM!

With the launch of our Instagram channel, we have completed our social media portfolio. Check out our PALFINGER MARINE blog, LinkedIn, Facebook, Youtube and Instagram pages to stay tuned to all updates from the marine world.



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