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MARITIME REPORTER AND ENGINEERING NEWS

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September 2011

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Propulsion Edition

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Treasure Salvage Law

Market Report
Strong Recovery in Subsea Vessel Segment

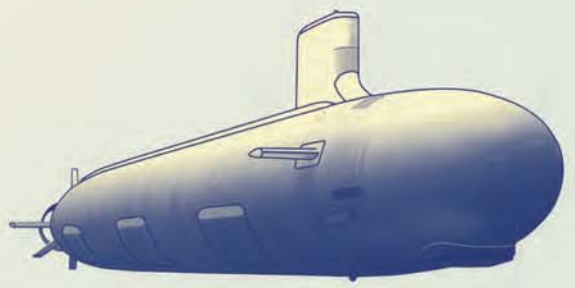
USS GEORGE H.W. BUSH (CVN 77)

USCGC BERTHOLF (WMSL 750)

USS WILLIAM P. LAWRENCE (DDG 110)

USS MAKIN ISLAND (LHD 8)

USS NEW YORK (LPD 21)



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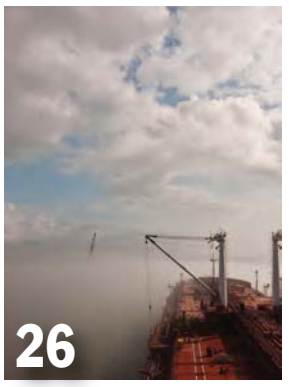
See stories page 54



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For an industry that is regularly tagged as conservative in its approach to adopting new technologies, I must say that this theory has been shattered in the previous few years as operators increasingly step up to investigate and adopt modern marine propulsion technologies designed to provide marine power in a more efficient, emission-free manner.

In this regard specifically I speak of the use of LNG power onboard, a concept that has long been theorized and in recent years has been the topic du jour at a number of leading industry conference and symposia. While the number of installations is still miniscule in the scope of all power installed on ships and boats globally, the bandwagon is starting to gain population, as the latest to invest is Harvey Gulf's Shane Guidry, a U.S.-based offshore operator that is not the biggest in terms of fleet size, but is one that ranks at or near the top in terms of investing in technologies that have significant big picture, long-run benefits to the health and well being of his company.

The contract announced late last month is significant in a number of regards; first and foremost it is the landmark first contract for a U.S. operator to build and own a U.S.-built LNG powered offshore vessel. Signal Shipbuilding emerged the winner for this three-boat, $165m deal, and it is significant to note that the Harvey Gulf Board approved an additional $300m for the possibility of six additional LNG-powered boats.

The question of LNG powered vessels has never been a question of "if," as the concept has long been proven safe and effective. It has always been a question of "when," because to make it efficient there needs to be a basic infrastructure – namely the creation of refueling stations.

Efficiency in propulsion is certainly not limited to the fuel chosen, and in this edition I am pleased to report that regular contributor **Henrik Segercrantz** provides a sweeping overview of new, proven and emerging technologies that offer significant promise in helping to make marine operations increasing fuel and emission efficient. His story starts on page 30.

Switching gears from future tech and bringing it to the 'here and now' has been the specialty of columnist **Dennis Bryant**, who has informed and amused the readers of *Maritime Reporter* for more than 10 years, and who also produces a twice weekly blogs on our **MaritimeProfessional.com**. Anyone who is a regular reader of Dennis' work knows that his topics range from eclectic to indispensible, and it brings a smile to my face every month when I receive his column via my email inbox with the simple words: "Here's my column for the next edition."

This month Dennis goes practical, examining in depth the Towing Vessel Inspection Proposal published August 11, 2011 by the U.S. Coast Guard. Starting on page 16, read his take on the proposed rules, and what they potentially mean to the cost or you doing business on the waterways.

Gregory R. Trauthwein, Editor & Associate Publisher | **trauthwein@marinelink.com**

Pictured on this month's cover

In Kristinehamn, Sweden, Rolls-Royce develops and tests propellers. The Hydrodynamic Research Center celebrates 40 years of successful operation this year, with its first cavitation tunnel built in 1942, five years after production of Kamewa's controllable pitch propeller started. As part of its "Marine Propulsion" coverage, *Maritime Reporter* spoke with **Göran Grunditz**, Manager, Rolls-Royce Hydrodynamic Research Center, about the latest trends in propeller design.

(Image: Rolls-Royce)

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Kent Ekenberg

Kent Ekenberg, founder and owner of KE Marine and Worldwide Diesel Power, Inc., spent five minutes with Maritime Reporter last month to discuss trends in the business of servicing and repairing diesel engines.

When and why did you create your companies?

Ekenberg Chris-Marine was founded in Malmö, Sweden in 1962 as a designer and manufacturer of diesel engine maintenance/reconditioning machines. As the company grew and expanded, in 1980 I was appointed to open, operate and manage the Jacksonville, Fla., office (Chris-Marine USA). From this office we operated a service department to support and provide full services, including repairs and overhauls to diesel engines, serving customers in North, South and Central America as well as the Caribbean. As the U.S. company grew and sales began to flourish, Chris-Marine East Coast was created in 1998 in order to accommodate all Chris-Marine machine and spare parts sales only, while CM USA focused on diesel engine service. For nearly 15 years, Chris-Marine USA (today WWDP) was an authorized repair facility for MAN B&W. In 2005, I purchased the U.S. branches of Chris-Marine, which today are known today as KE Marine (the sales division) and Worldwide Diesel Power, Inc. (the service division). Both companies retain the rights as sole distributor for Chris-Marine equipment in North, South, Central America and the Caribbean and have since gained representation for IOP and Vibracon.

Please give a brief overview of the products and services you supply.

Ekenberg Today we have Worldwide Diesel Power, our full diesel engine support company providing diesel engine services from complete engine overhauls, spare parts reconditioning and parts sales, turbo charger repairs, etc. Our facilities include a 26,000 sq. ft. repair facility with all up-to-date workshop equipment to provide reconditioning services to cylinder heads, liners, fuel pumps, turbochargers, and to support to work in the field. Our field work consists of international diesel engine repair on ships (docked and underway), in power plants or wherever the job may be. In addition to overhaul and engine repairs, we provide in-place/on-site machining services. Finally, we provide training of Chris-Marine equipment to all customers with CM equipment, as well as machine repairs/troubleshooting. In the last 20 years, our sales have been increasingly directed toward the power plant business.

How has the recent economy affected your business?

Ekenberg It has affected everyone, but since we have expanded our business into power plants, business has remained steady. The ship business comes in waves, and there are still some ships today that are laid-up; but power plants don't stop because of a bad economy.

How have your customer's needs most changed, and in turn, how has this changed your business?

Ekenberg The products — both those we use and service — are much more high-tech. We have to ensure we have all the proper equipment, certification and people to carry out work today. Also, ships today have increasingly less time in port, meaning we have to be quick, efficient and effective, or provide riding crews to carry out works underway to accommodate vessels' schedules. With increased power plant requests, we also have crews that service power plants.

What do you count as the biggest challenge(s) to owning and operating a business today?

Ekenberg It is difficult sometimes to simply find the right people. Also, this business is much more competitive today. But the competition comes increasingly from small repair companies that may offer a lower price, but are not offering the appropriate requirements or equally qualified personnel.

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Offshore FPS Demand Grows

IMA has completed a study of the floating production market, and the report documents strong growth in the business sector. According to the market survey, 1 floating production units have been ordered over the past four months a record pace reflecting strong underlying market drivers.

256 floating production systems are in service or available worldwide. FPSOs comprise 62 percent of the inventory. The balance is comprised of production semis (1 percent), tension leg platforms (9 percent), production spars (percent), production barges and FS Us (5 percent). Of the total production floater inventory, 11 units are currently off field and available for reuse making the effective utili ation rate 95. percent.

The 1 orders since March include the world's 1st F N . At billion the Prelude F N is the most expensive floating production unit ordered to date. Among the other orders are nine FPSOs (1 purpose-built unit, 6 units converted from trading tanker hulls and 2 modification/redeployments), 2 production spars and 2 purpose-built FS Us. Total value of the 1 construction contracts exceeds 11 billion.

Current order backlog consists of 5 production floaters, a net increase of 6 units since March. This extends the buildup in backlog that began in second half 2009. 28 units utili e purpose built hulls, 25 are based on converted tanker hulls. 20 units are being built for leasing operators, directly for field operators. In the report IMA identifies 196 projects in the bidding, design or planning stage that potentially require a floating production or storage system.

14 Number of Floating Productions Systems (FPS) ordered since March 2011.

50 Number of potential floater projects in the planning cycle, in Bra il alone, which individually is the most active region for future projects.

196 Number of projects in the bidding, design or planning stage that potentially require a floating production or storage system.

256 Number of Floating Productions Systems (FPS) in service or available worldwide.

$785,714,285.71

The Average Cost of the 1 Floating Productions Systems (FPS) ordered since March 2011.

$11b Dollar amount of Floating Productions Systems (FPS) ordered since March 2011.

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DOJ: Off Course in Shipyard Litigation

Joseph Keefe, in his August 24 Blog on MaritimeProfessional.com, weighs in on the legal dispute between the USCG & Bollinger.

At a time when every federal penny should count, the U.S. Department of Justice is embarking on an ill-advised, potentially expensive and ultimately counterproductive legal action against the U.S. Coast uard's primary shipbuilding contractor. o figure.

Showing questionable wisdom, the United States and its justice department have filed suit against Bollinger Shipyards Inc., Bollinger Shipyards ockport C and alter Bollinger Joint Venture C. In general terms, the government alleges that the ouisiana shipbuilder misrepresented the hull strength of a series of vessels that it was improving and lengthening about five years ago. The first converted cutter, according to the government, suffered hull failure when put into service. Eventually, said the U.S. Justice Department in a prepared statement, Efforts to repair the Matagorda and the other converted vessels were unsuccessful. The cutters are unseaworthy and have been taken out of service.

As the government seeks damages from Bollinger for the loss of the eight vessels the upgrades alone said to be worth about 95 million the Coast uard itself continues to struggle in an effort to renew an aging fleet and related equipment. Ten years after launching the aggressive, 25b Deepwater program to do just that, the nation's fifth military, uniformed service has little to show for the b already spent. The latest DOJ action, coming years after the work itself was complete, cannot hope to hide those failures.

B N E ESP NDS

For its part, Bollinger responded to the suit by saying in a prepared statement dated August 1 , Since its founding, Bollinger Shipyards has operated on the principle that uality is re e bered long after the price is forgotten. hree generations of the Bollinger fa ily ha e earned a spotless record for honest and fair dealing with e ery custo er, including the U.S. Na y and Coast uard, our largest client. Since 1 , Bollinger has built e ery patrol boat the Coast uard has purchased to date so e 1 ha e been deli ered.

The statement went on to say, We are disappointed with the Department of Justice's decision to file a complaint related to work completed in 2006. Throughout this process, Bollinger has been open and cooperative with the government, and we remain committed to providing the government all necessary information and assistance to bring this matter to a close. Bollinger has tried to find a way to resolve this matter short of litigation, but we are fully prepared to defend our good name aggressively in a court of law.

Indeed, and as if to underscore their response, Bollinger also noted the launch of the U.S. Coast uard's second, 15 -ft. Fast esponse Cutter from its ockport, A shipyards. The event according to the Coast uard itself marks a significant milestone in the Coast uard's acquisition of the Sentinel-class patrol boats. And, the third Fast esponse Cutter is tentatively scheduled to be launched Nov. 10. et's sum up 122 Coast uard patrol boats delivered since 198 , an ongoing relationship with the Coast uard and a record of typically delivering what the Coast uard wants in a timely fashion. Not bad for an outfit now accused of misrepresenting the facts.

B AME AME

From where I sit, there is probably plenty of blame to go around, but don't take my word for it. The recent (28 July) AO eport about the Coast uard's Deepwater program is also telling. The 86-page e-port, AO-11-1 , Coast uard Action Needed As Approved Deepwater Program emains Unachievable, says, among other things, The Deepwater Program continues to exceed the cost and schedule baselines approved by D S in 200 . None of that is any secret, of course, and the report goes on to list numerous problem and setbacks associated with the star-crossed efforts. Central to the Coast uard's troubles in the Deepwater effort was its own failure to properly oversee the effort from the beginning. Coast uard Commandant ADM obert Papp himself was recently quoted as saying, I ll be the first to admit, we weren t prepared to start spending this money and supervising a project this big. eaving the details and supervision of the projects to the contractors themselves, the Coast uard eventually lost control of the multi-billion dollar project. The government's action against Bollinger also comes as a cost-conscious Congress, led by ep. Frank obiondo (-NJ), are on record as saying that they will no longer provide a blank check to the Coast uard. And, while that makes sense on many levels, it also comes at a time when the Coast uard's efforts in the rapidly thawing Arctic are also ramping up significantly, with inadequate resources particularly in way of icebreakers that can cost up to 1 billion each to do the job. In numerous interviews over the past few years, especially where it comes to Deepwater and ship acquisition efforts, the Coast uard leadership has opted to look ahead, not behind. The party line has become, Don't look at where we've been; instead look how far we've come. Fair enough. Today, however, and as the Coast uard implores Congress to forget the past, the Department of Justice seems just as intent upon dredging it up. But, it doesn't seem right to let them have it both ways, does it Bollinger certainly won't be afforded that luxury.

At the end of the day, you have to wonder how much it will cost Bollinger and ultimately, the U.S. taxpayers, to defend and prosecute a case from which virtually nothing good can come. Did the shipyard drop the ball or was the Coast uard deficient in their contract administration I honestly have no idea. Five years down the road, it is a curious time to be finding out. It will also be expensive. ow many patrol boats could we be building with that money Finally, and perhaps most importantly, who will build these boats and others, if and when, years from now, the government triumphs

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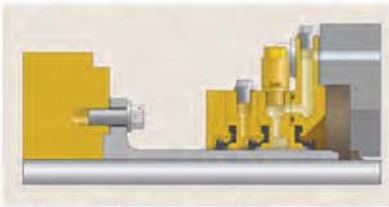

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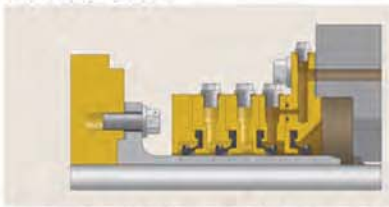

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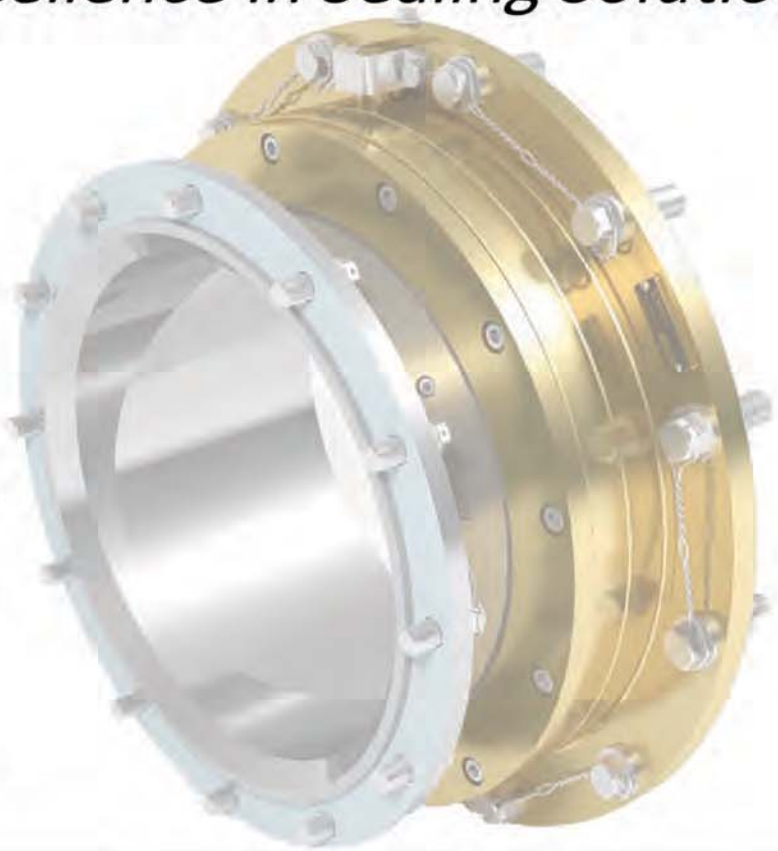

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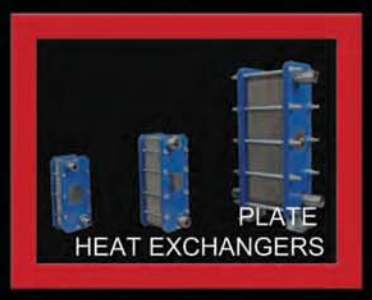

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First U.S. Navy Ship Visit to Vietnam in 38 Years

Military Sealift Command dry cargo/ammunition ship **USNS Richard E. Byrd** (pictured) left Cam Ranh Bay in southern Vietnam, marking the end of a historic visit — the first by a U.S. Navy ship to the port in more than three decades. Byrd spent seven days at Cam Ranh Shipyard for routine maintenance and repairs that included underwater hull cleaning, polishing of the ship's propeller, repairing shipboard piping, and overhaul of the salt water cooling system that keeps the ship's engines cool and runs the air conditioning.

MSC Ship Support Unit Singapore routinely contracts shipyards throughout Southeast Asia to conduct maintenance and repairs on the command's Combat Logistics Force ships. The Navy saves both time and money by using multiple commercial shipyards throughout the region, reducing transit times to more distant shipyards, and thereby also reducing the amount of time these ships are off-mission.

Cam Ranh Bay is a deep-water and sheltered harbor which can easily accommodate larger naval vessels with deep drafts. Byrd measures more than 680 feet in length and displaces more than 41,000 tons.

DNV Summer Student's Projection

Arctic Drilling 4x More Expensive

DNV's summer students presented the results of seven weeks of intense and targeted work with a concept for year-round drilling and exploration offshore north-east reenland. More than anything their work unfolded a massive need for new technologies, improved standards and increased arctic research. But that's not all; the students predict that drilling in the Arctic could be up to four times as expensive as drilling in the North Sea.

DNV's summer project is an annual program organi ed during the summer months for students in their final year of a master's degree program. This year, 10 students with varied cultural and academic backgrounds have been working intensely for seven weeks with the project Drilling in the Arctic. The focus has been on developing a comprehensive concept for drilling in the complex, rough and challenging conditions that are prevalent around the north-east coast of reenland.

One of the premises for the project was that the risk associated with drilling in this part of the Arctic should be similar to the risk of drilling in the North Sea.

We know that the world needs more energy. And we know that much of this energy is located in unfriendly areas of the world. These are complex issues that the world's leading scientists, researchers and engineers spend considerable time and resources on. I am therefore impressed by what these ten students have been able to process and produce throughout seven short summer weeks.

And even though their calculations show that the costs associated with drilling in the Arctic could be substantially higher when compared to drilling costs in the North Sea - their concept also clearly demonstrates that it is possible to engage in safe and sustainable drilling in these areas of the earth in the future, said CEO enrik O. Madsen.

A U-A EA S CC NCEP

esearch shows that about 22 25 of the world's undiscovered petroleum resources are located in the Arctic. owever, there are many complex challenges related to drilling in this region. Not least due to factors such as a harsh climate, geography, costs and geopolitics. Thus, in order to extract the resources from deep below the sea bed we need to develop and deploy new methods and technologies. In their concept, named Allu after the reenlandic words for hole in the ice, the students present a realistic blue print for how stakeholders can engage in exploration and drilling in the Arctic on a year-round basis, with a risk level similar to that in the North Sea. Among other things the students suggest how stakeholders can proceed to develop new methods and technological solutions as well as how the same stakeholders can adapt existing standards, technologies, communication equipment and vessels to the prevailing circumstances.

In a comparative analysis the students have found that the estimated total cost per day of Allu against traditional North Sea solutions is four times higher. owever the students emphasi e that in the future, factors such as economies of scale and innovations in technology have the potential to reduce these costs. In combination with accurate data on actual arctic field si es this will provide a better decision foundation for whether or not to engage in Arctic drilling operations. In the end, more than anything, the student's work unfolded a massive need for further Arctic research, new technologies and improved standards.

BMT Engineer Competes in Sky1 TV Challenge

Naval Architect Sam Stevens, from BMT Nigel ee, recently undertook one of the biggest engineering challenges of his career. Sam was part of a team of four competing in the Sky1 premiere of SAFEB EAKE S, a new series produced by Maverick TV, hosted by Ben Shephard. Sam and his team were tasked with building an amphibious car from scratch, with a budget of 1000. After just two days designing and building the special machine, his team, The CADS, went head to head with fellow engineering enthusiasts to battle it out for the top pri e of 5,000, secured in a safe in a seemingly inaccessible location. This fast paced, engaging series encourages mind power and problem solving. Each week two teams must construct their own vehicles, from fire engines and bulldo ers to cranes and tanks, in a mechanical challenge that will push them to their limits. To win the money, the teams must collect the numbers needed to crack the code on the safe with speed and agility, which is easier said than done. Sam Stevens explains Building a car in just two days was certainly no mean feat, but we were very proud of the end result. The most challenging aspect of the design was the compromise between the required performance on land and water, while adhering to the limited budget for parts and materials and the very short timescale in which to build the machine. All this required some innovative engineering

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o da u ust .

"Beat the Block" Challenge
8,000 Tons of Steel *vs.* 50 Cyclists

The mid section of the UK's first ueen Eli abeth Class aircraft carrier last month left BAE Systems' shipyard at ovan, step one of a 600 mile journey by sea to osyth, where the aircraft carrier will be assembled. With the hunk of steel left 50 cyclists from the yard , tracing the path of ower Block 0 on land in an attempt to beat the block' to its final destination on the Forth and raise money for the oyal Navy and oyal Marines Charity. This marks an important milestone - the start of the assembly phase of the MS ueen Eli abeth aircraft carrier, said erald owarth, Minister for International Security Strategy.

Steven Carroll, ueen Eli abeth Class Project Director at BAE Systems, said There's a real sense of pride in the yard and across the Carrier Alliance today. Watching ower Block 0 be towed down the Clyde gives us chance to reflect on the huge achievements of the past two years since we cut the first steel on this first section.

37m Cat Ferry

Incat Crowther launched the m Catamaran Passenger Ferry Kilimanjaro III. Built by ichardson Devine Marine (DM), Kilimanjaro III is the third vessel from the designer builder partnership for Coastal Fast Ferries in Tan ania, Africa. Kilimanjaro III was developed following the success of Kilimanjaro I and Kilimanjaro II. Incat Crowther and DM were approached by the operator to develop a larger, faster and more versatile vessel. The result is a 558 passenger vessel that is larger than any other vessel on the an ibar Dar Es Salaam route, in addition to being capable of the more rugged offshore route to the Island of Pemba. Furthermore, Kilimanjaro III carries more passengers at less cost per-passenger to the operator, taking further advantage of the operation's revenue-making potential. The main deck passenger deck features 2 9 economy class seats, with those nearest the aft kiosk equipped with tables. The aft end of the main deck has been reconfigured with a larger luggage room, located directly adjacent to the side crew ramps to speed up turn around. The upper deck has outdoor seats for 10 passengers. Amidships there is a first class cabin with seats. The sundeck has seats for a further 60 passengers. Kilimanjaro III features Incat Crowther's new generation hull form, which offers increased efficiency and improved seakeeping. It is powered by a pair of Cummins KTA50 engines, each producing 1 0kW. oaded performance was recorded at over 1 knots, and will operate at 29 knots at MC .

Main Particulars

Length, o.a.	125 ft. (38.1m)
Length, w.l.	122 ft. (37.3m)
Beam, o.a.	34.5 ft. (10.5m)
Draft (hull)	3.6 ft. (1.1m)
Draft (prop)	5.9 ft. (1.8m)
Depth	12 ft. (3.7m)
Fuel Oil	1585 gal.
Fresh Water	330 gal.
Sullage	330 gal.
Passengers	558
Speed (Service)	29 knots
Main Engines	2 x Cummins KTA50
Power	2 x 1340kW @ 1900rpm
Propulsion	2 x Propeller
Generators	2 x Cummins, 170kVA, 50 Hz
	1 x Cummins, 17kVA, 50 Hz

New Ferry for Fire Island

Vessel Data and Specifications Information

Vessel Name	Fire Island Queen
Owner	Fire Island Ferries Inc.
Builder	Gladding-Hearn Shipbuilding, Duclos Corporation
Length	85 ft.
Beam	20.3 ft.
Draft	5.4 ft.
Date delivered	July 2011
Passengers	387
Coast Guard certification	USCG Subchapter K
Main engines	(3) MTU Series 60 diesel engines
Power	1800 Bhp @ 2100 rpm
Gears	ZF550
Radar	Furuno FR8122
GPS	Garmin 4010
Depth sounder	Raymarine ST-40
Compass (type/make)	Ritchie

ladding- earn Shipbuilding, Duclos Corporation has delivered a new high-speed ferry to Fire Island Ferries, Inc., on the south shore of ong Island in New ork. The new 8 -passenger, all-aluminum, mono-hull ferry is a further refinement of a vessel design concept optimi ed by Fire Island Ferries since the early 19 0s to operate on the 20-minute crossing on the shallow reat South Bay. With an emphasis on economy, efficiency, and quick turn-around, there are large passenger doors mid-ship on the main deck. There is indoor seating for 20 passengers on the main deck and seating for another 18 passengers on the upper deck.

According to the builder, to ensure a smooth integration of the new vessel into a fleet of more than 20 ferries operated by Fire Island Ferries, the design priority was the use of common components, systems and critical arrangement dimensions to aid in crew training and maintenance. The vessel is powered by three MTU Series 60 diesel engines, delivering a total of 1800 bhp at 2100 rpm and connected to F550 gear boxes, each turning Ni-BrAl propellers. Top speed loaded is 21 knots.

New Tugboats Serve Petroleos de Venezuela

The first high-specification tugboats featuring ComAp Inteli en NT Marine equipment are now in full operation providing South American oil company Petroleos de Vene ula (PDVSA) with fully owned assets capable of quick response to firefighting operations and maneuvering tankers at Vene uelan oil terminals. Previous to the Vene uelan general strike of 2002-200 , PDVSA had a fully leased fleet, leaving it vulnerable in the crude oil loading and unloading operations. As a result the Vene uelan government decided to acquire its own tugboat fleet from Cuba, placing an order for four tugboats with Caribbean Drydock Company (CDC), as part of a procurement arrangement made between the Cuban and Vene uelan governments.

On April 0 2011, CDC delivered the first tug KA I A which will be followed by UAI UE I in August, CUMANA OTO in December, with the last of the initial order CA IBE arriving in January 2012. The vessels are modern tugboats with a capacity of 5 tons of thrust and an output of , 00 hp. The tugboat switchboards use Inteli en NT Marine controllers to supervise and monitor the onboard genset. Inteli en NT Marine provides a range of dedicated functions including automatic synchroni ing, AMF function, Baseload, Import/Export, Peak shaving and Voltage PF control (AV). It also provides operators with a range of communication options that allows remote monitoring and access to useful data such as performance and event-based history log. CDC (Caribbean Drydock Company) has confirmed its satisfaction with Inteli en NT's performance and the service and support.

DonJon Adds Tug

On August 1, 2011, Donjon added the 2 00- P-class tug Caitlin Ann to its growing fleet to support the company's dredging, marine salvage, bulk material transportation and marine demolition services. The addition of the Caitlin Ann increases the Donjon towboat fleet to 1 total vessels ranging from 1200 to 000 horsepower. In addition, Donjon also owns and operates five derrick barges with a maximum capacity of 1,000 tons, more than 0 deck and hopper barges, - 000-cubic yard split hull dump barges and numerous small vessels, floats and related marine craft.

Electric Ferry for China

BMT Nigel ee td. won an order for the design of a 25m all electric, 150-passenger ferry in China. In order to demonstrate the practical use of a battery powered ferry within the estuarial and coastal waters, a new green ship design will be developed. BMT was tasked to provide a design based on its design capability and its proven low resistance hull form technology which is currently in use in many low wash catamaran ferries. In addition to providing the fundamental naval architecture design, BMT will develop the layout and styling of the vessel to provide an elegant, yet simple design that reflects the vessel's modern green credentials and practical functionality as a passenger ferry. The design uses a catamaran hull form with V B batteries providing the power to the electric drive motors, which will achieve a 10 knot service speed. Solar cells are incorporated into the roof structure to top up the batteries while the vessel is in use. Construction of the vessel will start by the middle of 2011 with trials and delivery by mid- 2012.

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Towing Vessel Inspection Proposal

About the Author
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On August 11, 2011, the US Coast uard published in the Federal egister its proposal for an inspection regime for US-flag towing vessels. The towing vessel inspection program was first mandated by Congress in 200 . Creating a wholly new inspection program has not been easy, in large part because the commercial towing vessel industry in the United States is highly diverse. There are a handful of large towing companies with sophisticated management systems. There are a number of medium-si ed towing companies operating a variety of vessels engaged in different types of towing in several locations. Finally, there are numerous small (some truly mom-and-pop) companies operating a small number of vessels out of one or two locations. Establishment of a regulatory regime that adequately accounts for these different situations is quite challenging.

ather than tackle the entire towing industry in the first iteration, the Coast uard has hived off a few segments. First, the new inspection regime would not apply to towing vessels that are already subject to inspection. This exempts towing vessels currently subject to inspection as sea-going motor vessels from having to comply with two sets of inspection requirements. Small towing vessels (less than 26 feet or eight meters in length) would be exempt unless used for pushing, pulling, or hauling a barge that is carrying dangerous or ha ardous materials. Also exempt would be a vessel used for assistance towing; towing recreational vessels for salvage; or transporting/assisting the navigation of recreational vessels within or between marinas and marina facilities within a limited geographical area. Work boats would be exempt if operating exclusively within a worksite and performing intermittent towing within the worksite.

The proposal, if adopted, would establish safety regulations governing the inspection, standards, and safety management systems of towing vessels.

egulations would address the following major topics (1) certification; (2) vessel compliance; ( ) Towing Safety Management Systems (TSMSs); ( ) third-party organi ations; (5) operations; (6) lifesaving; ( ) fire protection; (8) machinery and electrical systems and equipment; and (9) construction and arrangement. Potential requirements for hours of service or crew endurance management for mariners aboard towing vessels have been deferred at this time, with additional data, information, and public comment specifically sought by the Coast uard. The intent of the rulemaking is to promote safer work practices and to reduce casualties involving towing vessels by requiring that towing vessels and the companies that own and operate them adhere to prescribed safety standards and safety management systems.

Compliance could be demonstrated by one of two means (a) the vessel and its owner/operator would be subject to the usual Coast uard inspection regime; or (b) the vessel and its owner/operator would be subject to audit by an approved third-party organi ation with periodic oversight by the US Coast uard. The rulemaking is worded so as to indicate that the owner/operator may select either of the two options. Actually, if the third-party organi ation option is not selected, the vessels of the owner/operator will automatically be subject to the usual Coast uard inspection regime. The owner/operator may choose separate options for separate vessels within their fleet. It is important that the owner/operator decide as soon as possible after the final rule comes into effect (but not later than two years thereafter) if the third-party organi ation selection is to be made. The regulations, as proposed, allow for a change in options, but the burden is on the owner/operator to demonstrate compliance with the requirements of the newly-elected option prior to approval.

The regulations, as proposed, allow the owner/operator two years after the requirements come into effect to develop and implement a Towing Safety Management System TSMS (if the third-party organi ation option is selected) or to otherwise bring their towing vessels into compliance (if the Coast uard inspection regime is selected). It then provides for a four-year phase-in schedule for issuance of Certificates of Inspection (COIs). For an owner/operator of more than one towing vessel, 25 of the company's towing vessels must have onboard a valid COI. Within two years, 50 of the company's towing vessels must have onboard a valid COI. Within three years, 5 of the company's towing vessels must have onboard a valid COI. Within four years, 100 of the company's towing vessels must have onboard a valid COI.

For an owner/operator of more than one towing vessel, 25% of the company's towing vessels must have onboard a valid COI. Within two years, 50% of the company's towing vessels must have onboard a valid COI. Within three years, 75% of the company's towing vessels must have onboard a valid COI. Within four years, 100% of the company's towing vessels must have onboard a valid COI.

The rulemaking seems to assume that the towing vessel fleet will remain relatively static as no provision is made for the sale or transfer of towing vessels from one company to another. It is unclear what occurs when a towing vessel the COI of which is based on the owner/operator's participation in an approved TSMS is transferred to an owner/operator that does not participate in an approved TSMS (or utili es a different TSMS). It is recommended that, prior to finali ation, the rulemaking be amended to address this issue. On the same theme, the rulemaking should address the process for a change in its TSMS, including a change in a company's third-party organi ation.

The rulemaking should also address the situation where, for instance, in year three, a towing vessel that has not yet acquired a COI is transferred to a new owner. On a related issue, would establishment of a single-ship corporation for each towing vessel delay the COI deadline until year four

The Coast uard is providing an alternative means by which compliance with certain lifesaving or machinery and electrical requirements may be demonstrated. For those provisions, compliance with certain functional requirements may be utili ed in lieu of compliance with the usual proscriptive regulations. The Coast uard should consider expansion of this concept to a broader range of its rulemakings.

This rulemaking was not created by the Coast uard out of whole cloth. Meetings with industry representatives and other stakeholders were held shortly after the enabling statute was enacted in 200 . An in-depth study of the towing industry, its composition, and its safety record was conducted to inform the project. The Towing Safety Advisory Committee (TSAC) established a working group to analy e implementation of the inspection regime. The rulemaking tracks closely the recommendations of the TSAC working group. The TSMS proposed in the rulemaking builds on the esponsible Carrier Program (CP) of the American Waterways Operators (AWO) trade association. In 2009, the Coast uard established the Towing Vessel Bridging Program (TVBP) to ease the transition of these vessels from uninspected status to inspected status. As mentioned above, there is room for improvement in this rulemaking, but it represents a solid first step to enhancing safety in this important industry.

Public meetings on this rulemaking have not been scheduled as of the writing of this article, but are expected to be announced shortly. It behooves owners and operators, as well as potential third-party organi ations, to actively participate in the rulemaking process. The Coast uard cannot address your particular concern or your unique situation if that concern or situation is not brought to the agency's attention in a timely manner.

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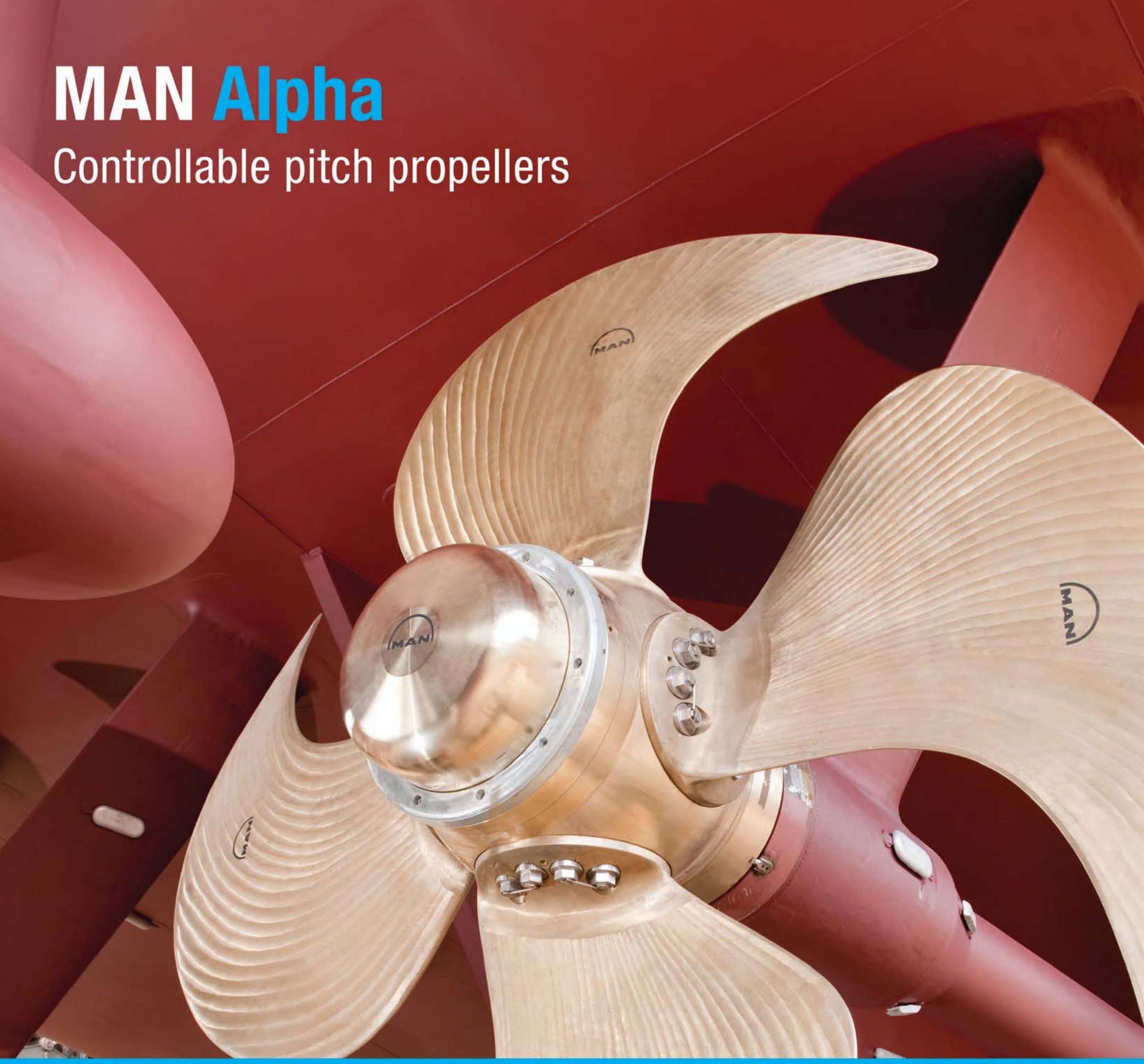

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Treasure Salvage Cases

Should U.S. Courts Exercise Jurisdiction In where the Wreck Is Located In International Waters?

About the Author
Tom Belknap, partner at Blank Rome, concentrates his practice in the areas of international commercial and insurance litigation and arbitration, with a particular emphasis on the maritime industry. Email: TBelknap@BlankRome.com

The term treasure salvage has a tendency to conjure romantic images of pirates and adventurers. Not, I might add, of modern day pirates, who are widely acknowledged to be unromantic thugs and scoundrels, but those of the old story books, of whom time and fiction writers have been more forgiving. In the stories, x marks the spot and the hero follows obscure and cryptic clues in a wild adventure to the long-lost chest of gold in the abandoned sunken shipwreck, keeping it all for himself and living happily ever after.

Just to define our term, by treasure salvage we mean the subsea exploration and recovery of artifacts from sunken vessels which are believed (or, more often, hoped) to be of historical or monetary significance. Successful treasure salvage has always required mastery of the combined disciplines of historical research and subsea exploration and recovery, and in real life, of course, it has always involved long hours and a lot of disappointment.

As in many areas, technology has been the driver of change. Subsea exploration that was impossible just twenty years ago is now practically routine. Modern satellite positioning capabilities are precise to a degree that was only recently inconceivable. Data analysis and computer modeling capabilities are exponentially more sophisticated and are expanding rapidly with each passing year. istorical research and information is more widely available and accessible thanks to the internet. Successful treasure salvage, in other words, has become increasingly a product of investment and hard work rather than a game of chance.

The result of these changes is that sunken shipwrecks that were once assumed to be lost forever are increasingly being found. In addition to the rogue salvors who have traditionally engaged in the treasure salvage business, sophisticated publicly traded companies have entered the scene in recent years and have applied considerable funding and efforts towards seeking out newer and more dramatic discoveries. The discovery of the TITANIC in 1985 and of the sidewheel steamer CENT A AME ICA in 198 are good examples of early high-profile discoveries, and more recently Odyssey Marine, a publicly traded company, discovered a shipwreck it nicknamed the Black Swan, recovering over 500,000 silver coins weighing some 1 tons and hundreds of gold coins and worked gold. According to news reports, the estimated value of the recovered property in this case was about 500 million.

The United Nations estimates there are some million shipwrecks on the ocean floor. Most, of course, are of no interest to treasure salvors; however, there are many undiscovered wrecks of substantial interest to subsea explorers. Of course, treasure salvors are only one subset of subsea explorers, and a perennial conflict exists between the interests of archaeologists and historians on the one hand, who are principally interested in collecting and preserving historical and culturally significant information, and treasure salvors on the other who, at least according to stereotype, are principally interested in recovering artifacts of value.

As often occurs, the law has been forced to adapt to these technological developments, and the adjustment has not always been entirely smooth. Early treasure salvage cases tended to rely upon the maritime law of finds to hold that a party that recovered artifacts from an abandoned shipwreck was entitled to keep them. More recently, however, the Courts have substantially favored applying maritime salvage law. In a nutshell, the difference is that under the law of finds the finder is considered to have title to the property once it obtains possession. Under the salvage law, by contrast, the salvor merely has a lien in the property and is deemed to be holding it in trust for the owner. It does not obtain title but instead is entitled to a salvage award to reward it for recovering the property for the benefit of the owner. The salvage law presumes, in other words, that a property's owner did not intend to abandon the property merely because it was lost at sea.

To enforce a salvage lien, the salvaged property must be arrested within the jurisdiction of a competent court or must otherwise be physically brought into the jurisdiction of the court. In the United States, the Federal District courts are vested with exclusive jurisdiction over maritime salvage claims. Once the property is within the jurisdiction of a competent court, that court may adjudicate the ownership and salvage interests in the property as against all potential claimants. This is based on its in rem jurisdiction over the property.

But what about a shipwreck sitting on the ocean floor in international waters What law applies And what court has urisdiction r, indeed, should any court ha e urisdiction

This issue was at the fore in the litigation concerning the TITANIC, which has reached the Fourth Circuit Court of Appeals on three separate occasions. In those decisions, the Fourth Circuit confirmed the view that the law of salvage should ordinarily prevail over the law of finds in this context. It also concluded that the law of salvage was so universal and well accepted that it constituted, in essence, the general maritime law of nations that should—and would—be uniformly recogni ed in maritime jurisdictions around the world. Thus, a U.S. District Court may exercise constructive in rem jurisdiction over a shipwreck in international waters, so long as the salvor has managed to bring some small artifact from the wreck in to the jurisdiction.

Constructive in rem jurisdiction means, in essence, that a U.S. court may issue orders designating a party as exclusive salvor of a wreck and may issue orders to protect the wreck site from interference from others.

It may also issue orders to protect archaeological or historical data that might otherwise be damaged or lost in the course of salvage operations. It may not, however, adjudicate ownership of the property, nor may it issue a salvage award in the property, until such time as the property is physically brought within the jurisdiction of the Court. The premise for

exercising such extra-territorial jurisdiction is that the law of salvage is so widely recogni ed that a foreign court would enforce an order of the U.S. court as part of the international general maritime law.

This premise may be a bit wishful while it is unquestionably true that the law of salvage belongs to the ancient and revered maritime law, its application to confer some degree of jurisdiction over shipwrecks located in international waters is certainly a newer—and probably less universally recogni ed—phenomenon. And perhaps it begs the question should salvage law allow a U.S. court to effectively extend its jurisdictional reach into international waters

As a practical matter, it is difficult to see an alternative that allows the salvor its reward and yet also protects both the private interests of the original owner of the property and also the public interest of preserving sites of significant cultural or archaeological importance. Under the law of finds, the finder has the incentive to reduce found property to its possession at the earliest possible opportunity, because that is how it establishes its rights in the property.

Under a strict sal age regi e, on the other hand, the sal or would ha e a si ilar incenti e to take and deli er possession of sal ed property into the custody of the court at the earliest possible opportunity so that it could perfect its clai for a sal age award. In either case, the recovering party would have a strong incentive to immediately recover found artifacts even at the expense of the integrity of the wreck site.

Under the constructive in rem approach, by contrast, the salvor can take a more methodical approach to salvaging the wreck once it has done its preliminary investigation and has determined that it has found a site of sufficient importance, it can commence an action by delivering only a token artifact into the jurisdiction of the court. This is largely a symbolic gesture but also serves to confirm that the salvor has, in fact, located a wreck and that it has the means of recovering artifacts from it. Once the court has constructive in rem jurisdiction it can enter orders to protect the salvor's salvage interest, such as naming the party the exclusive salvor in possession, which can help to avoid a fight over access to the salvage site or a damaging race to recover astifacts. It can also substantially incentivi e the salvor to use best practices in conducting the salvage operation, because the Court can make it a condition of maintaining its exclusive status that the salvor demonstrate a continuing commitment to preserving the integrity of the site and any recovered property. The court can also enter orders aimed at protecting the site itself, such as requiring certain specific record-keeping procedures or preservation methods. It can also entertain submissions by third parties who may have a specific interest in ensuring the site is properly handled or salvaged.

It is probably impossible to construct a legal regime that fully recogni es and protects all of the competing interests in a historical shipwreck located in international waters.

But devising the best possible balance within the confines of existing, well-recogni ed legal principles must continue to be the goal, and ultimately it will be up to the Courts to continue to wrestle with this issue in the coming years. The one thing that seems certain is that the cases will keep coming as long as there is still treasure to be discovered at the bottom of the sea.

National Maritime College of Ireland

Technologically advanced – economically sound

About the Author
Joanne Kelleher has worked with National Maritime College of Ireland for 5 years and is now the Marketing Executive for GTSS. For more information about GTSS and its courses, email: nmci@gac.com or visit www.gacworld.com/solutions.

oanne Kelleher, marketing e ecutive, raining and ervice olutions e plains how the technologicall advanced facilities at the ational Maritime ollege of Ireland help make training from a sound investment

Training is vital. That much is regularly made clear by regulatory bodies and private companies alike. From the European Commission Task Force on maritime employment recommendations in July, to China speaking out at the IMO Maritime Safety Committee Meeting in June, ensuring that maritime professionals are qualified, capable and confident of doing their jobs to the best of their abilities is spoken of as an absolute priority at every level, in every country.

Why then, in a recent online survey by shipping daily newspaper *lo d s ist*, was a lack of training opportunities highlighted as a leading cause of disenchantment across a broad spectrum of industry groups such as brokers, charterers, and traders; up to and including executives and senior management Moreover, the Marine Accident Investigation Board (MAIB), the IMO and DNV have all raised concerns about corners being cut and seafarers serving in positions for which they lack the qualifications and experience. The temptation is to see training and crewing as soft' costs that can be cut to protect the bottom line. Amid continued economic uncertainty, shrinking margins, rising bunker prices, increasingly stringent environmental regulations and ongoing operational challenges, it is perhaps understandable that some might regard training as just another cost.

owever, one should weigh this inclination against a recent report from DNV, stating that 60 of the most costly incidents for ship owners and operators were collisions, groundings, and contacts; all as a result of human error.

That is why TSS is committed to delivering high value, technologically-advanced training that uses state-of-the-art training tools, among the most exciting of which are housed at The National Maritime College of Ireland (NMCI). Part of the 100million facilities is the world's largest simulator suite, with 1 simulators supplied by Kongsberg Maritime. This includes one of only a few full 60-degree simulators in the world, as well as damper-mounted simulators that realistically simulate the movement of the ocean. This makes the simulators ideal training for situations in which ship-handling experience is key. For example any situation in which ships are in close proximity to each other or moving at speed poses very real dangers, including vessel damage, injuries to the crew and environmental implications. So training on the job' means putting someone with little handling experience in control, increasing the risks to the ship and its crew. Man-model training has therefore been seen as a preferable alternative; scale replicas of ships designed to react and feel like their full-si ed counterparts in terms of momentum and inertia when used in the water have been used to train masters, pilots and officers for decades.

owever, recent advances mean that simulators such as those at NMCI can overcome the obstacles of man-model training, such as the limited number of vessel types available and the constraints of weather conditions on the day.

With simulators there are many vari-

ables at the disposal of the course lecturer, such as different vessel types, locations, weather conditions and every imaginable operational scenario, meaning that attendees can be trained on precisely the right type of vessel and situation for their needs. Once an exercise has begun, participants tend to forget it's a simulation. This is particularly useful when worst-case scenarios such as engine breakdown or steering failure are enacted. Trainees experience the full stress of the situation in a safe environment, allowing them to understand how to react appropriately should it happen in real life.

For example, using this technology TSS provides courses on Seismic e-plenishment at Sea (AS) for seismic and seismic support vessels, N vessel simulation, as well as ship handling, berthing and alongside maneuvering simulation exercises. TSS also offers a week-long Ship-to-Ship Transfer simulator course which covers safe manoeuvring using the ship's engines and helm, the impact of natural forces, such as wind, current and interaction, the importance of approach planning, efficient management of bridge procedures, and effective and safe bridge team management. The simulator enables a progression of challenging scenarios and a flexible and varied range of conditions, as well as the capacity to link two bridges together as in real world ship-handling scenarios. The ability to record and playback entire exercises also makes the debriefing from TSS lecturers more effective.

Organi ations rely upon their staff to do the best job they can, to make the right decisions and take appropriate action on the behalf of the company. With this expectation comes a responsibility to empower them to do so. Whether afloat or ashore, specialist training is fundamental to realising profitable efficiencies and minimising environmental and financial risk.

Just as slow steaming has emerged to counter rising fuel costs and new environmental solutions have been developed to drive up vessel efficiency, so too has the training sector responded by modernising its methods and tools to equip all maritime professionals with the skills that they need. New technologies are playing a decisive role, not only in revolutionising shipping operations through the likes of ECDIS, but also in helping to deliver safe, effective, realistic and value-for-money training for crews and land-based personnel alike. In doing so, it is helping its customers to both minimise risks and maximise efficiencies in their operations.

In these tough economic times staff training must be viewed as a long-term investment. The cost of training is low relative to the investments that owners and operators are putting at risk. In addition, ensuring that maritime professionals are qualified, capable and confident of doing their jobs to the best of their abilities is not only an investment worth making, but one that could also give companies a crucial commercial advantage over their competitors, particularly when there is a shortage of qualified, experienced crew.

Forward thinking companies are recognising that their human capital can be the strongest link in their value chain and are investing in training for both their seafarers and land-based teams. As the shipping industry strives to keep up with the increasing demands of world trade and globalisation amid escalating bunker prices and shrinking margins, avoiding costly errors and realising efficiencies directly impacts the bottom line, making an experienced, well trained and knowl-

Growth is Good, But ...

Increased Risks Can Come Along for the Ride

About the Author
Ken Baldwin, CPCU, AMIM, Regional Vice President, Travelers Ocean Marine
Ken has more than 20 years of experience in the marine insurance industry. Travelers Ocean Marine is a leading provider of property and casualty insurance with an extensive product portfolio including cargo, hull, liabilities and luxury yacht.

Few U.S. industries have escaped the recession unscathed, but the maritime industry has been able to bounce back a bit more quickly than some due to prudent business owners who have continued to re-invest in their operations.

The desire to remain competitive and the pressure of tighter regulations have prompted many to upgrade their infrastructure, expand existing services and pursue new market opportunities.

A sometimes hidden underside of growth, however, is that maritime businesses can unexpectedly find themselves with new exposures to risks and liability as they change their operations or revise their business model.

MPAC F MA ME E U A E U EMEN S

One example of regulatory influence on maritime business investments is the double-hull requirement for vessels hauling petroleum and other liquid products. This mandate has been in place for new tanker construction for over 20 years and now is beginning to have a broader impact, as smaller vessels are being replaced with double-hull construction as well.

Under the double-hull regulation, by January 1, 2015, even vessels that are less than 5,000 gross tons must have double hulls or Coast uard-certified equivalent containment capabilities for spills. For some maritime operators, this could mean an overhaul of their existing business model. For example, one company that built its business model around using 100-foot tankers to service the oil and gasoline needs of vessels within harbors has had to replace all of its fleet.

While U.S. shipyards have been busy fulfilling a variety of orders they delivered more than 200 vessels under contract during 2010, according to the U.S. Coast uard the double-hull requirement has certainly added to the crunch of construction.

EEP N UP W C MPE S

Another driver of investment activity has been the desire to stay ahead of competitors as the market for maritime services tightened and customers grew ever more cost-conscious. Many maritime businesses have invested in upgrading their capabilities or purchasing new equipment which allows them to take advantage of different opportunities.

The reasoning is straightforward. A business that does not invest in current technology may find its customer base opting to deal with others who offer more services, updated equipment and better reliability. An additional investment in equipment may allow a company to grow by leveraging what it already has in place by providing new services to existing customers or attracting new customers with different needs.

Also, it is difficult to ask for top price for services when equipment is outdated, prone to breakdowns or simply incapable of providing the level of performance that customers are looking for. Finally, allowing a company's capital assets to deteriorate can result in higher operational and overhead costs for repairs, insurance and other day-to-day expenses.

All of these reasons both regulatory and competitive add up to a solid incentive for companies to continually assess their operations and invest in ways to improve their business model.

ADD ESS N E S S F C AN E

Change is the one constant in business. While changes designed to stay competitive can lead to growth, change also brings risks. Some are obvious, while others may require businesses to work closely with experts to understand their exposures.

For example, when a maritime business buys new equipment, it makes sense to provide employees with the right training to operate the equipment safely and effectively.

In addition, it may be a good idea to have dry runs or practice opportunities so that a crew becomes familiar with new operational conditions or different idiosyncrasies than they are used to.

It is also important for the maritime business to be aware of the potential ripple effect of new equipment or a different way of operating.

Perhaps new technology allows the company to assign a smaller crew to take care of a certain responsibility, which makes operations more efficient. owever, this may also mean that fewer hands are available during an emergency. Considering these aspects ahead of time may allow a company to be better prepared if things go wrong.

EEP N C E A E CU EN

When a company is busy planning investments or bringing new equipment into operational mode, insurance may not be a top priority. But it should be, for a number of reasons, including

1. he right co erage A business that expands into a new market opportunity may not have coverage that reflects the new activities. For example, an insurance policy written to cover the risks involved in hauling goods from one location to another may not provide necessary protection for a company that adds cruises for passengers to its services.

. Ade uate li its Expanding or changing the type of services a business provides by installing different equipment may mean prior limits on insurance coverage are no longer adequate. For example, a dry dock operation that adds a travel lift may now be picking up multi-million-dollar tug boats, putting them up on blocks and performing repairs. Because of the new and greater exposure to possible damages, the current insurance limits may need to be adjusted.

. Accurate aluations An investment in new or different equipment may increase the value of a company's capital assets. Making sure insurance coverage has adequate limits to reflect this greater value is an important protective measure. No one wants to pay for more insurance than necessary, but after a loss has occurred is a bad time to find out that coverage is inadequate for a business to recover and carry on.

By working closely with their insurance broker and carrier on a regular basis, maritime companies can address their insurance needs continually, in real time and in synch with the growth and changes that their businesses undergo.

aving the right insurance is an important way to protect the investments and growth of the marine industry.

Key Data & Statistics

S A E F W D ADE
http://stat.wto.org/CountryProfile/WSDBCountryPFView.aspx?Language=E&Country=US

M EMEN F DS B WA E NDUS MPAC
http://www.spn.usace.army.mil/value_to_the_nation/DeepWaterPorts.pdf

D UB E U E U EMEN
http://law.justia.com/cfr/title33/33-2.0.1.5.25.9.177.3.22.html

US S PBU D N F U ES F M C AS UA D
http://shipbuildinghistory.com/today/statistics/activity2010.htm

Ship Operating Costs Under Immense Pressure

If it wasn't bad enough that demand in the shipping markets has not recovered, commodity price rises have put more than a little pressure on ship operating costs. Fleet owners and managers are certainly feeling the squee e in 2011.

Drewry has just published its latest annual analysis of ship operating costs, covering 8 vessel sectors and over 5 different si es of vessel plus detailed operating budgets for a range of oil tankers, chemical tankers, gas carriers, dry bulk vessels, container vessels, ro-ro, general cargo and reefer vessels; making it the most comprehensive survey of this crucial area of vessel management.

Paula Pus et, managing editor commented, In 2010, vessel operating costs overall remained static. owever, in 2011 commodity price increases will push up lube, repair and maintenance costs. With some owners having to take additional insurance cover for kidnap and ransom, overall costs are forecast to rise by between and 6 , depending upon vessel sector.

SUMMA F E MA N F ND N S

Manning

The key change here is that low market demand has kept wage levels down across the globe. This has also had the effect of narrowing the gap between demand and supply for experienced seafarers ... a continual problem over the last few years. owever, as more newbuilds come on stream, the gap will no doubt widen again forcing wages up.

With the next STWC round as well as I O M C regulations cutting in next year, owners and managers will come under wage and staff cost pressure particularly in the areas of travel, training and victualling.

nsurance

In M, premiums have barely risen. Vessel values have become more stable following the drop in recent years, the outlook points to premiums rising to reflect the pressures the insurance market will find itself under following non-marine related claims, such as the earthquakes in New ealand and Japan.

P& Co er

In 2010 saw standard surcharges falling to an average .5 . Stock markets rallied and so this had a positive effect on P I rates. The exception is the offshore sector where increases of up to 0 in P I rates have been reported. Deepwater ori on has been the main cause and the problems this year. Excess loss reinsurance rates, on the other hand, were reduced for all vessel categories.

epairs & Maintenance

The increase in commodity prices, par-

ticularly steel, has had an effect on the cost of M. But rising oil prices has meant more expensive lubes, paints and coatings. In a difficult market, owners and managers have been looking for the best prices and increases in yard capacity, mainly in China, have helped this cause.

Stores & lubes once again there is a concern that lube prices could become disconnected from oil prices and so a significant increase in lube prices could be on its way. Those owners and managers that had pinned down lube prices with forward contracts may find those agreements run out this year and so the cost benefit will likely disappear.

Manage ent & Ad inistration regulatory issues loom largest in this cost area. SO AS Chapter V stipulates that Electronic Chart Display and Information System (ECDIS), along with Bridge Navigational Watch Alarm System (BNWAS) must be fitted to all new vessels immediately and will affect all ships in time.

Tighter Sulphur Emission Controls for vessels sailing within SECA areas came into effect last year. This raises fuel costs and has made record keeping on o one depleting substances on board mandatory.

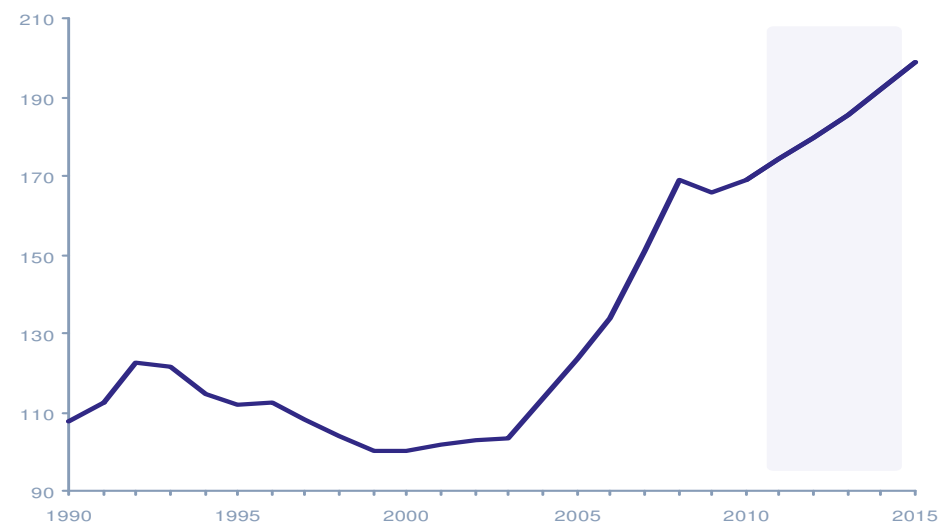
Fleet operators know that the many conventions that abound on safety, emissions and manning will result in increased costs. ike low demand and high commodity prices, regulation is a brutal fact of maritime life.

Ship Operating Costs 2011/12

is an Annual report by Drewry Shipping Consultants td is available for purchase.

E-mail: puszet@drewry.co.uk

Figure 1 **Evolution of total operating costs (Index: 2000=100): total operating costs**



Source: Drewry Maritime Research

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Cloud Computing

Is it the right time for Maritime?

lot has changed in the shipping industr in the last decade or so. or instance, cloud computing has found its wa into shipping. ut the main thing has remained the same the essential pur pose of shipping, which is to connect economies, and to make a profit for the ship owners. In terms of profit, there have alwa s been two wa s sell more and spend less. his means increase cargo capacit to increase revenues, and to improve ef ficienc to lower costs. While investing in more capacit is a matter of strateg and finances, op timi ing cost efficienc is a matter of dail oper ations performed b crews and defined b management.

by Christa Thoma, Mespas

C S EFF C ENC A PE P E, P CESSES & SMA S

In operations, more emphasis must be laid on well trained crews, processes and smart tools to reduce the costs of the products and services offered, and to reduce the capital employed.

Processes are usually optimi ed on a continuing basis. And demands on crews are changing too. This is also due to the fact that crew si es have been reduced significantly in the last years. According to the Company of Master Mariners of Canada, they have gone from about 50 a ship to an average of less than half that, with some of the bigger ships operating with crews of fewer than 20. The situation today means that ever more complex systems aboard the ships must be operated by fewer crew members. But even with small crews, ships must be kept in top condition so as to avoid any unnecessary downtime or costly repairs.

That's where Cloud Computing comes in. Cloud-based software may be the answer to those seeking to reduce operational costs and minimi e capital employed. We all know, employing smart tools and state-of-the-art software can improve efficiency. This is particularly important for technical management software such as planned maintenance, procurement and crewing. Such software must ensure all relevant people aboard or ashore are provided with the right level of information whenever they need it. For example, crew members must be able to plan their work in detail (what to do, when and how to do it) and report back to shore; staff ashore need the correct information (performance data, running hours, purchase requests etc.) at the click of a button; and management must be able to compare, analy e and benchmark data across the fleet. The information must be available on-time and in one place to ensure data integrity. Cloud-based software performs exceptionally well on these and more requirements.

On-premise Software	SaaS delivery model
The software is purchased upfront and integrated into the IT landscape of the company.	SaaS suppliers provide customers access to the software via the internet.
The software is owned by the customer.	The software is not owned by the customer; it's owned by the SaaS provider.
The software is deployed, managed and supported as well as maintained by dedicated inhouse IT personnel.	The services noted on the left are offered by the SaaS provider as part of the subscription fee.
The customer provides the inhouse infrastructure to support the software, such as servers, hardware, networks and security measures.	The SaaS provider is responsible for maintenance, upgrades, support and security of the software and infrastructure.
It's the customer's decision whether or not to utilize the latest version of the software. If so, additional costs are incurred.	The software provider makes available the latest version of the software to all its customers, at no additional costs.

Cloud Co puting is not a new technology, it s a new way of deli ering co puting resources

et's look at the underlying technology of cloud-based software such as software as a service (SaaS). With SaaS, we're not talking about a new technology. The SaaS concept is based on the idea to provide, support and run software via the Internet. So companies starting to employ SaaS will not have to change technology; they'll just make use of a new way of accessing computing.

Then the importance of SaaS on a global basis In August 2010, IDC (a global market intelligence firm) said that SaaS will overtake traditional software in 201 . They went further by saying that nearly 85 of new software firms coming to the market will offer products in the SaaS model.

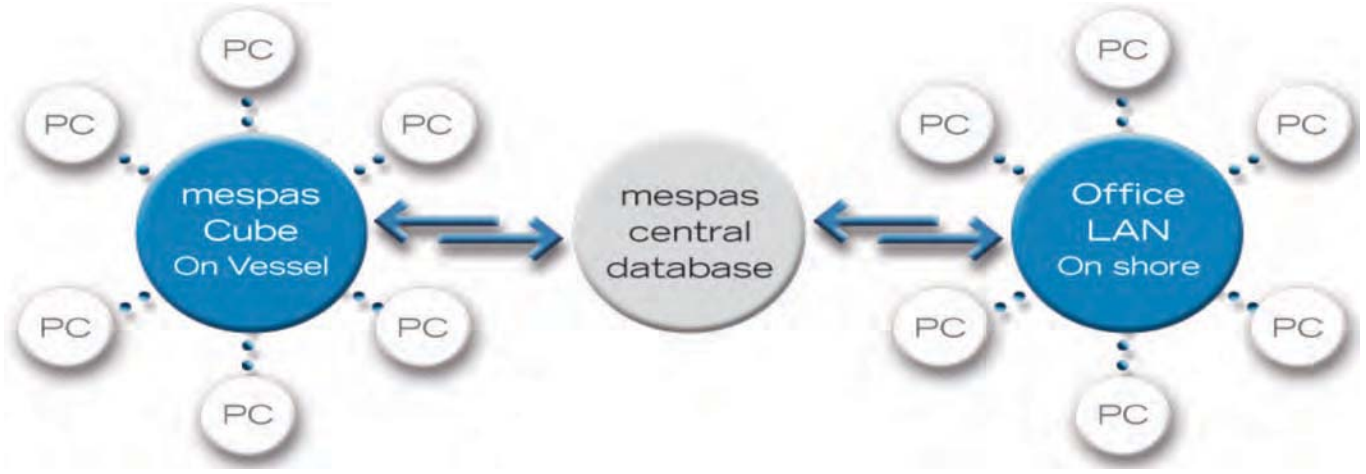
Another analyst, artner Inc., said that the SaaS market will total almost 11 billion in 2011. These are impressive figures underpinning the fact that SaaS and cloud computing are more than a highly accepted IT trend, they're reality.

SAAS E SUS AD NA N-P EM SE S S EMS

The popularity of SaaS is steadily increasing because it reduces costs and simplifies deployment.

With SaaS, the software provider can support many customers with a single version of a product. This approach allows customers to scale as fast as needed without replacing IT infrastructure or adding IT staff.

A SaaS application means there is one central server and one central database. All employees share the same database, all employees have access to the same current information (within their access rights).



The Cloud Advantage:
You own your data, but you don't need to own your central server hardware. Updates, new releases, and new data are distributed with minimal effort via the central database.

SAAS P ESEN S A W-C S A E NA E

SaaS has been thriving in recent years; that's no surprise since it offers some important benefits to businesses of all si es and types

No up-front costs, reduced IT costs, predictable subscription fees

Speed of deployment

Access software application from anywhere

Concentrate on core business and increase productivity

Benefit from flexible, scalable system igh reliability, performance, and security

Always current and compatible software

ow entry and no exit barrier

In terms of total costs of ownership (TCO), there are some distinct differences between on-premise solutions and SaaS solutions. With SaaS, the software is neither installed nor operated on the company's IT landscape, but is offered as a hosted service. Employees use the application via a web-based frontend, or open an offline software client which regularly synchroni es with the central database.

The latter is particularly important in the maritime industry, i.e. for ships that have no continuous internet connection. No server needs to be hosted at the client's site, nor do clients have to worry about security, backups or installing software updates on users' computers.

DA A SECU S F PA AM UN MP ANCE

Despite the advantages of SaaS, some reservations exist. Issues such as security, data sovereignty and inflexibility in terms of customi ation of the software tend to be mentioned. When it comes to extremely sensitive data, particular attention must be paid to data security and legal issues. But this applies to any software application, be they traditional or SaaS applications. In terms of data sovereignty, some people may worry about losing physical control over their data. Experience shows, however, that security issues tend to be dealt with more professionally at a dedicated SaaS application provider than would be the case with in-house solutions. eputable providers have a vital interest in safe IT environments Security problems would soon mean the end of a SaaS company.

For SaaS applications to work efficiently, access to the Internet is essential. et, this is already a given in today's business environment. For use aboard ships, the SaaS application is managed offline, and data transfers as well as software updates are conducted via regular synchroni ation.

EA FE E AMP E

Mespas is a cloud computing provider of fleet management software offers its products as SaaS. The company probably maintains the largest central database, containing master data such as OEM products data, parts information, maintenance schedules, and manuals. This master data, which is continually being expanded, is available to all relevant customers and just needs to be linked to the relevant ship.

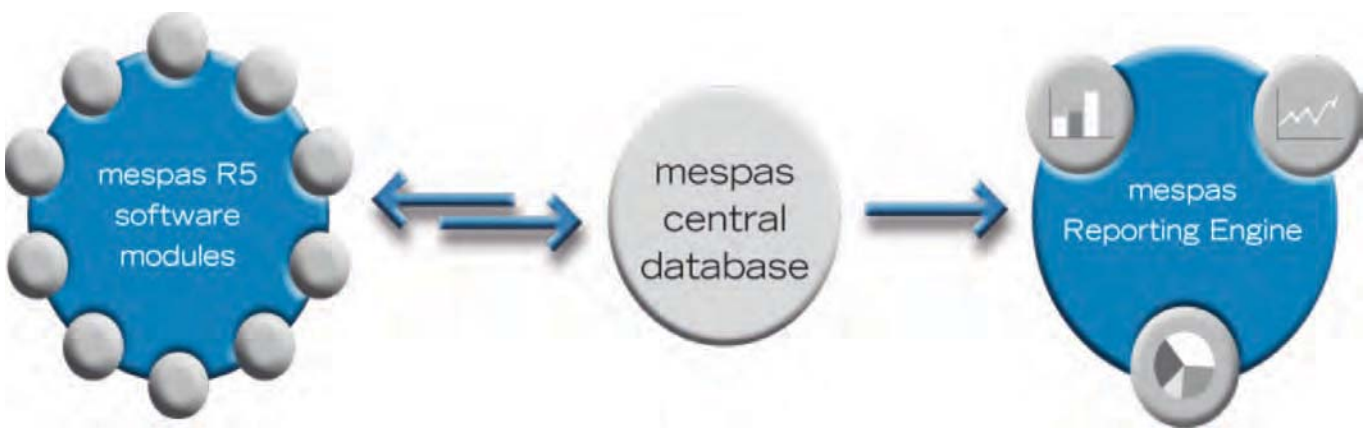
Increased operational efficiency was one of the main reasons why a erman shipowner with 28 vessels chose to install the cloud-based solution of Mespas. The ship-owner sought class-approved software that is easy to use, offers a clearly structured user interface, provides outstanding functionality in terms of managing maintenance work, and offers data and system security (banking-level encryption).

After several years of use, the ship owner's technical director reported that the system has been particularly helpful in reducing complexity and facilitating information flows. Issues such as monitoring and ensuring a flawless synchroni ation mechanism, data security, data back-ups and software updates are delegated to Mespas. With regards to the initial system evaluation he said The time required for decision making and implementation was very short since minimal IT involvement was required. There was no need to evaluate a central server for the office and assess how it would fit into the company's network IT environment. Also, the whole issue of IT hardware in the office was virtually inexistent. In terms of reducing complexity in daily operations, the technical director highlighted When traveling, we can simply access the system via the web. All we need is an internet connection. This is part of what I mean when I say cloud computing reduces complexity .

With the Mespas cloud-based software, the server infrastructure is managed centrally and in parallel instead of separately for each user/customer. Its comprehensive database contains current, generic information on machinery specifications, supplier information, manuals and other documents. This data exists once only in the database, regardless of how often that information (e.g. a part or a manual) is linked to various users or vessels. Manual data entry is kept to an absolute minimum, thereby minimi ing or eliminating wrong and duplicate data. This is important for data analysis across the fleet, integrated procurement and seamless communication within the company, as well as with suppliers.

Working with one central database means that all people within the company work with fleetwide consistent PMS settings. Forecasting of required spare parts, tools and manpower across the fleet is a matter of a few mouse clicks. And so is end-to-end procurement, thanks to integrated machinery data and catalogues as well as complete supplier information. Customers no longer have to enter data manually or copy it from some other source; instead, they simply choose the correct data from a drop-down menu.

egular synchroni ation with the cen-



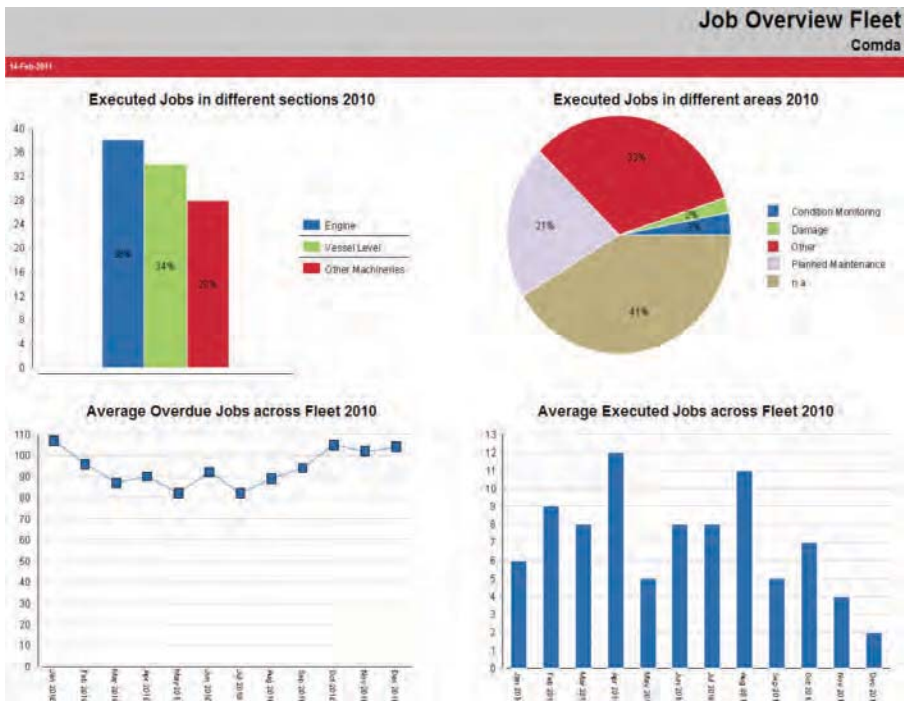
The mespas Reporting Engine is designed to securely retrieve the information via the web, and produces meaningful reports at various levels of detail.

On-premise Software	SaaS delivery model
Opex • Integration and deployment • Managing, supporting, maintaining the software; deployment of new releases • IT Personnel costs and overheads • Purchase or renting of floor space for server room	**Opex** Subscription fee (e.g. per user, per transaction, per month, per year, per company)
Capex • Costs for hardware, networking equipment, infrastructure and security, costs for replacements and upgrades of hardware over time • Purchase and licensing price of software, recurring costs for software upgrades • Additional costs for licenses and hardware when the business grows, i.e. when new users are added	**Capex** No capital expenditure incurred if the company already has sufficient internet access.
	Opex = operational expenditure **Capex** = Capital expenditure

tral database ashore ensures all data is kept up-to-date. This process can even be automated if required. So we are finally past those days where shipping companies had dedicated people responsible for data synchroni ation between ship and shore.

One of the biggest advantages of having all data in one central database is the system's ability to provide reports on any desired key performance indicator. All vessels synchroni e with the same database and all master and business specific data are available, too. This allows to transform PMS or procurement data into meaningful reports. Web-based, dynamic KPI reports give an immediate overview across the fleet and help companies make informed decisions based on accurate facts.

SaaS has been around for nearly ten years. It probably won't take as long until SaaS becomes the system-of-choice for the majority of companies in the shipping industry. The reasons are clear the SaaS concept not only allows for more efficient resource utili ation, it also eliminates the high costs of proprietary hardware and applications, and the IT resources to maintain and operate the infrastructure. Since SaaS shifts some of the costs from Capex to Opex, it relieves the balance sheet of non-core issues such as IT and the company gets back some of its flexibility to invest in strategic projects. So we're back at what we were looking for increased efficiency and lowered costs.



Screenshot from the mespas Reporting Engine.

Advances in Marine Propulsion

Many new developments have taken place regarding the ship propulsion machinery and systems, and also regarding the methods used to find the best design parameters for an energy efficient vessel. Increasing environmental considerations, set into practice by global and regional regulations and by public opinion, combined with a higher fuel price, continue to push designers towards better products.

By Henrik Segercrantz

E EED

Carbon dioxide CO2 greenhouse gas emissions are directly related to ships fuel efficiency and fuel consumption of the engines, and is thus relates directly to the total transport efficiency of ships and to engine manufacturers D work for fuel efficiency. The basic idea behind the energy-efficiency regulations is that an Energy Efficiency Design Index (EEDI) be calculated for each new ship in the design phase.

This value consists of the relation between the amount of carbon dioxide produced by the ship's engines and the amount of cargo it carries. The calculation assumes that a ship is moving at a speed corresponding to 5 percent of its engine power. It measures a vessel s inherent fuel efficiency and compares CO2 emissions to transport work. A reference EEDI is determined by IMO for each type of ship, e.g. for tankers, bulk carriers, container ships etc.

MEASU ES EDUCE

In July, the Parties to MA PO Annex VI represented in the Marine Environment Protection Committee (MEPC) of the IMO, adopted mandatory measures to reduce emissions of greenhouse gases (s) from international shipping. his is the first e er andatory global greenhouse gas reduction regi e for an international industry sector.

The amendments to MA PO Annex VI egulations for the prevention of air pollution from ships, add a new chapter to Annex VI on egulations on energy efficiency for ships to make mandatory the EEDI, for new ships, and the Ship Energy Efficiency Management Plan (SEEMP) for all ships. Under SEEMP, new and existing ships will have to keep on board a ship-specific energy use management plan during operation. It sets out best practices for the fuel efficient operation of ships as well as provides guidelines for the voluntary use of the Ship Energy Efficiency Operational Indicator (EEOI) for new and existing ships which enables operators to measure the fuel efficiency in grams of CO2 per ton-mile of a ship.

he regulations apply to all ships of a gross tonnage of and abo e and are e pected to enter into force on 1 anuary 1 . owever, the Administration may waive the requirement for new ships of 00 gross tonnage and above from complying with the EEDI requirements. This waiver may not be applied to ships above 00 gross tonnage for which the building contract is placed four years after the entry into force date of chapter ; the keel of which is laid or which is at a similar stage of construction four years and six months after the entry into force; the delivery of which is after six years and six months after the entry into force; or in cases of the major conversion of a new or existing ship, four years after the entry into force date. The new chapter includes a regulation on Promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships, which requires Administrations, in cooperation with IMO and other international bodies, to promote and provide, as appropriate, support directly or through IMO to States, especially developing States, that request technical assistance.

It also requires the Administration of a Party to cooperate actively with other Parties, subject to its national laws, regulations and policies, to promote the development and transfer of technology and exchange of information.

The MEPC agreed a work plan to continue the work on energy efficiency measures for ships, to include the development of the EEDI framework for ship types and si es, and propulsion systems, not covered by the current EEDI requirements and the development of EEDI and SEEMP-related guidelines. The MEPC agreed to the terms of reference for an intersessional working group on energy efficiency measures for ships, scheduled to take place in February/March 2012.

For each individual ship, the attained EEDI shall not exceed the proposed reference (baseline) line value agreed by the IMO for each ship type. Under the proposal agreed at MEPC 62, the EEDI reference line will be reduced by 10 for ships built between 2015-2019; by 15-20 (depending on ship type) for ships built between 2020 and 202 and 0 for ships delivered after 202 . The design process of a novel Aframax crude oil tanker describes well the development process of today, of which propulsion is an integrated part. The classification society ermaischer loyd ( ) points out that the reason behind the development project was that the oil tanker design has not evolved enough since the introduction of double hull concept. ittle attention has been paid to the product s performance over the lifecycle and, in particular the fuel efficiency has not improved in the last 20 years despite the general improvements in systems and their efficiency, said.

The recently developed Energy Efficiency Design Index (EEDI) is a simple but accurate measure of a vessel's inherent fuel efficiency, which compares CO2 emissions to transport work. said that although oil tankers are considered to be among the most energy efficient vessels today, with an EEDI value ranging from 2 to 6g CO2/(t nm), they emitted approximately 115 million tons of CO2 in 2009. The current share of oil tanker CO2 emissions is approximately 12 percent of the total CO2 emissions from international shipping.

and the echnical Uni ersity of Athens tea ed up in to de elop this no el Afra a tanker design concept. The ideas from the market were incorporated in the new design concept called BEST-plus. The hull form was hydrodynamially optimi ed to reduce fuel consumption and emissions using Computational Fluid Dynamics.

The design concept targets the typical Aframax oil tanker trades in the Caribbean Sea. Facilities in the main U.S. ports and the U.S. Emission Control Area (ECA) set the operating conditions. If a Mexican ECA would be implemented as well, approximately 0 percent of the total transit distance for this trade would be inside an ECA. The current design assumes the use of M O as fuel when sailing in an ECA. N as ship fuel, or the use of scrubbers, are the alternatives. The need for a relatively high speed in this trade was considered with regard to the upcoming EEDI requirement to ensure superior competitiveness of the vessel.

The design approach used an advanced optimi ation environment, which integrates tools to predict required propulsion power, stability, oil outflow index, cargo capacity and hull structural scantlings according to IACS CS . Cost of transport normali ed with respect to the reference design, was used as the primary target function for the optimi ation.

The reference design for comparing cost of transport is an existing pre-CS tanker. Compared to the reference design,

First orders for

MAN's G-Type Engine

In June, MAN Diesel Turbo announced it has received its first orders for their ultra-long-stroke new -Type engine. Thenamaris placed an order for four 6 80ME-C9.2 engines to power four 5,000 TEU container vessels, with the first ship scheduled for delivery in August 201 from yundai (S I) in South Korea. Specifications indicate a ship speed of 21.5 knots with a design draft of 12m. he shipping industry is currently debating, according to MAN Diesel & urbo, whether or not CC lay-out speed should be reduced to 1 knots fro the e isting 15 to 15.5 knots, a scenario which the 80 is tailor-made to meet. We always follow developments in the shipping market closely and have kept a close eye on the trend for fuel optimisation in recent years. As such, we experienced great interest in the -type engine during the extensive consultations MAN Diesel Turbo held with industry partners, stemming from which we initiated a variety of projects with shipyards and major shipping lines during the lead-in to the -type's market introduction, Ole r ne, Senior Vice President ow-Speed Promotion Sales, MAN Diesel Turbo said. Tankers and bulk carriers have traditionally used MAN B W S-type engines with their long stroke and low engine-speed as prime-movers, while larger container vessels have tended to use the shorter-stroke K-type with its higher engine speed. Following efficiency optimisation trends in the market, the engine manufacturer has thoroughly evaluated the possibility of using even larger propellers and thereby engines with even lower speeds for the propulsion of tankers and bulk carriers. arger container vessels are now increasingly being specified with S80ME-C9 and S90ME-C8/9 engines because of the opportunity they offer to employ larger propeller diameters; an S90ME-C9 engine will replace a corresponding K98 with the same cylinder count. t is esti ated that such new designs offer potential fuel-consu ption sa ings of so e - , with a si ilar reduction in C e issions.

Ole Grøne, Senior Vice President Low-Speed Promotion & Sales, MAN Diesel & Turbo

enrik egercrant

a seven percent improvement in cost of transport was reali ed due to the better hull form for the best design variant. notes that many design variants can be considered optimal, which means that the final selection depends on the weighting of the different optimisation targets. Therefore, a design optimised for oil outflow, for EEDI, or for cost-of-transport might be selected.

The resulting hull form facilitates a speed of 15.6 knots at design draft and 16.8 knots at ballast draft. notes that with a standard main engine for Aframax oil tankers, a MAN 6S60MC-C, the fuel consumption is comparable to similar vessels.

s conclusions on the new design reflect the way Naval Architects have to think today, when designing vessels With this high speed and large cargo capacity, the vessel easily meets future EEDI requirements. The attained EEDI value is merely 8 per cent of the latest published reference line value for this ship si e. This means the vessel would be in compliance with EEDI regulations even if the first reduction to the required EEDI had already begun.

ECEN DE E PMEN S W EED

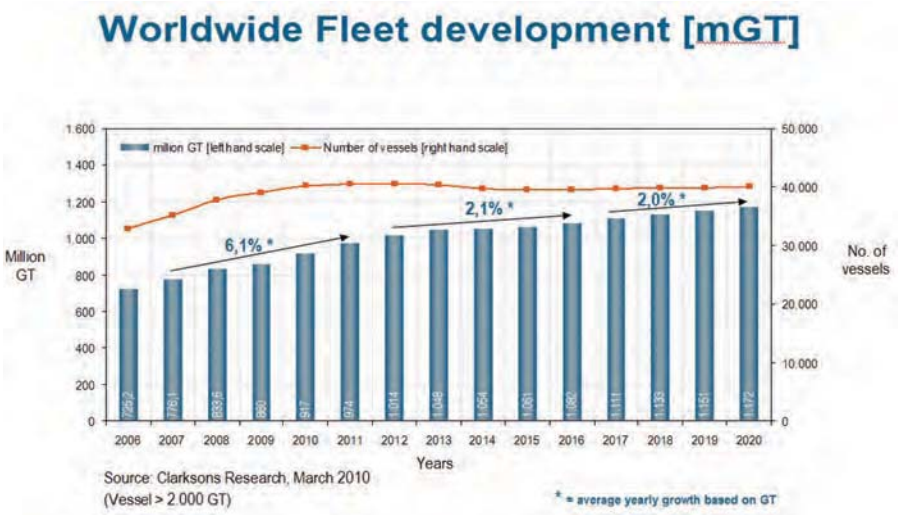
In a recent presentation attended by *Maritime Reporter*, Olaf Mager, ermanisher loyd, presented a graph (below) showing the world fleet is expected to grow by a moderate 2.1 to 2 in the years to come, but indicating there will be more emissions from ships. e pointed out that shipping has been invited to pay its contribution to post-Kyoto UN agreements. In another graph by Clarkson esearch, he presented the estimated CO2 emission development without any actions, showing sharply raising emissions until year 2050. At the same time we have very ambitious goals to reduce CO2 and other emissions, he said indicated with the green line showing the goal of 80 percent reduced CO2 emissions in year 2050, from the level in year 1990. There is a clear commitment by IMO to make sure that the worldwide shipping industry is paying its contribution. IMO came up with the Energy Efficiency Design Index which is opening up completely new perspectives. International shipping accounts for 2. - . of global greenhouse gas emissions. Unregulated, these emissions are expected to reach 6 of global emissions by 2020 and to double or triple by 2050.

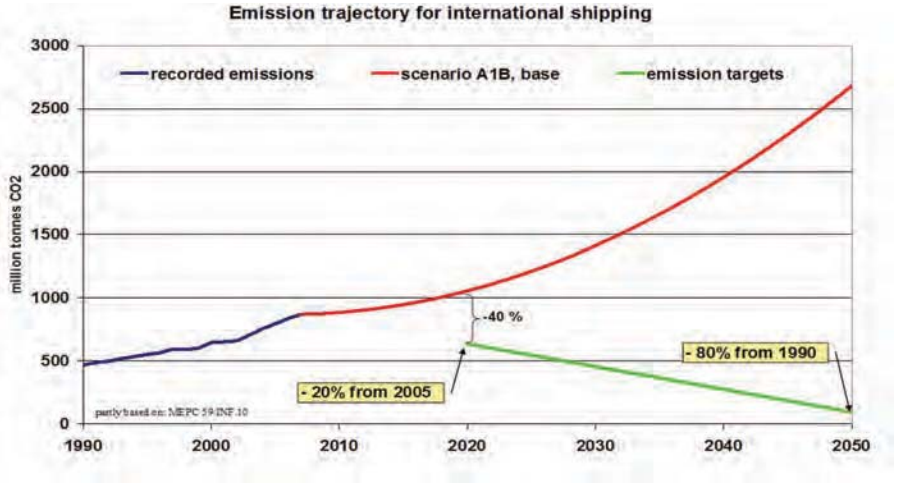
B D P PU S N

A recent propulsion technology trend, for advanced offshore service vessels, besides that of a N fuelled machinery, is to use hybrid propulsion. The hybrid system is more economical than a comparable diesel-electric system what regards investments costs. This is why it has been applied on many anchor handling vessel newbuildings. A recent example is Farstad Shipping s order for two UT 1C anchor handling vessels. These are designed by olls- oyce to work in extreme environmental conditions and to carry out operations in water as deep as ,000 meters. Another recent example is Bourbon s six seismic support/chase vessels ordered from Dubai s randweld Shipyards, with first vessel to be delivered in 2012. A hybrid propulsion system combines diesel-electric and diesel mechanical machinery, maximi ing efficiency and minimi ing fuel consumption, with resulting cut emissions. When working in DP mode, diesel-electric machinery provides a better optimi ation of running the engines at optimum load, providing smooth variable speed, whereas in transit, or when towing, mechanical transmission provides less transmission losses.

ABB S NEW DC- D P WE

ABB launched, in May, a new DC direct current electrical system for marine applications. Called the DC- rid, the new power distribution and electric propulsion system is designed for ships with low-voltage onboard power systems, such as offshore support vessels, tug boats, ferries and yachts. It was developed based on the fact that in traditional electrical propulsion vessels, there are multiple DC connections from the AC circuit to thrusters and propulsion drives, which account for more than 80 percent of the electrical power consumption. ABB's onboard DC system connects all DC links and distributes the power through one main DC circuit. With an onboard DC solution, we can vary generator speed to optimi e fuel consumption and improve a ship's operational efficiency by up to 20 compared with traditional AC powered systems, says Veli-Matti einikkala, head of ABB s Process Automation division.





Trends in propeller design

In Kristinehamn, Sweden, olls- oyce develops and tests propellers. The ydrodynamic esearch Center celebrates 0 years of operation this year, with its first cavitation tunnel built in 19 2, five years after production of Kamewa s controllable pitch propeller started. Mariti e eporter talked with ran runditz, Manager, olls- oyce ydrodyna ic esearch Centre, about the latest trends in propeller design.

Göran Grunditz, Manager, Rolls-Royce Hydrodynamic Research Centre

enerally speaking, during my 11 years at the ydrodynamic esearch Center, one change which can definitely be seen is that 10 years ago one concentrated on low pressure pulses and low vibrations, whereas today the focus is much more on propulsion efficiency, rundit said. What happens is that one has to look at the efficiency of the entire vessel, and not only the propeller, in a much higher degree than before. We look at the total design of the vessel. If it is a vessel with a conventional propeller and rudder, we prefer to design the propeller and rudder together as an integrated system. One utili es various energy saving devices, such as our Promas system, an integrated propeller and rudder system with a bulb integrating the propeller hub with the rudder. rundit notes that this type of devices are not necessarily new, but are often old ideas which now are gaining interest as the focus earlier has not been in the same extent on fuel savings and harmful emissions.

It is not possible to do miracles regarding propulsion efficiency by looking at the propeller blade only. One might be able to reach a, say, two percent improvement at the cost of higher pressure pulses in the hull aft. n order to sa e energy, in fact regardless of type of propulsion, runditz says they look uch ore at the entire essel, than only on the efficiency of their particular products. There is much more optimi ation of the hull lines and much more consideration on how the various propulsion and other devices interact.

But the propeller itself has though changed over the years, as well. If we look at a controllable pitch propeller, we have over recent years re-designed the propeller hub in order to be able to make it smaller. We have made the propeller hub stronger, and can thus decrease its si e and we have improved its contour with improved efficiency as a result. Today one sometimes also uses anti-fouling paint on the propeller blades, to prevent fouling and to keep the surface smooth, he said. ere the development today focuses on finding coatings that stay attached to the propeller, which can be difficult, and also on solutions that do not affect the geometry of the blade. On the other hand, regarding wear, where there is cavitation there is no fouling either, rundit said. olls- oyce also looks at various propeller materials, and works today quite much with stainless steel propellers, for icegoing ships, and also for other vessels, as a mean to improve efficiency, as steel has shown to be a better material than bron e for propeller blades what regards maintaining a smooth surface. A steel propeller does not have to be polished as frequently as a bron e propeller. If we look further in the future, there are other materials as well to be considered, such as various composites, although they today are way too expensive for the maritime sector, rundit said. There is of course a continuous development taking place also regarding the design of the propeller also. The analyses and tools olls- oyce has to predict the performance, such as how much cavitation will occur and how it will behave, has also become better. This makes it possible also to design better propellers, with even smaller blade area which also have better efficiency. We strive to make propellers with as small propeller blade area as possible, rundit said. One also tries to design the propulsion system of the vessel with as big propeller as possible, to improve on efficiency. A big propeller has better efficiency as long as you can adjust and optimi e the propeller revolutions to the propeller diameter. I think this is a current design trend. Summari ing, rundit said that the trend in propeller design is towards bigger, low loaded propellers with higher efficiency and less blade area.

enrik egercrant

To meet EPA Tier 3

Caterpillar's 3500C Engine

Caterpillar Marine Power Systems announced, in August, that starting in January 2012, its legendary Cat 500C marine engines will enter full production meeting United States EPA Tier regulations. We're pleased to offer our customers impacted by the United States EPA regulations a timely, comprehensive power solution that doesn't require after treatment or sacrifice performance, said Bob allengren, Caterpillar Marine Power Systems Product and Application Manager. We're offering a wide range of power ratings

Western Towboats' Ocean Titan meets EPA Tier 3 emission limits.

to the market and were also able to incorporate several new standard features into the design. The Cat 500C engines will not require after treatment modules to meet Tier regulations as a result of incorporating innovative fuel and air system modifications into the design of the engines. The 512C Tier is a V12 cylinder engine with a 1 0mm bore by 215mm stroke and a 58.6 liter cylinder volume. The 516C Tier is a vee-16 cylinder with the same bore and stroke and a 8.08 liter cylinder volume. The engine series has power ratings ranging between 1, 1 and , 86bhp. We installed the 516C EPA Tier engines on the Ocean Titan, a 120-ft. -drive tug boat and have been very pleased with the powerful performance delivered by the Tier engines, noted Bob Shrewsbury, co-owner of Western Towboats based in Seattle, Washington. It is imperative for our operations to incorporate sustainable, efficient power solutions into our vessels and we know we can always rely on Caterpillar.

enrik egercrant

D E F N AS FUE

The tougher restrictions on sulphur oxides and nitrogen oxides being implemented for ships in Emission Control Areas result in a few options to comply for shipowners. One either has to switch to low sulphur fuels or distillates, use heavy fuel but have a scrubbers in the exhaust gas system, or switch to using N as fuel, which reduced NOx by 85 to 90 percent and SOx by almost 100 percent. The third option is applicable for newbuildings, and requires an onshore supply network in place for the liquefied natural gas fuel, thus making N suitable for short-sea vessels operating between fixed ports.

N AN A E NA E F ECAS

Earlier, in March, W rtsil secured the order for its dual-fuel gas engines for Finnish 2,600 passenger cruise ferry owner Viking ine, which opted for N as fuel for its two Baltic ferry newbuildings ordered from ST Finland. The first ship is scheduled to enter service in 201 , for operation between Finland and Sweden. The new cruise ferries are the largest such vessels to operate on liquefied natural gas sofar. The ice class 1A vessels are 21 m long, 1.8m wide and have a gross tonnage of 56,850.

There are four ,600kW 8 50DF main engines in a diesel-electric power plant configuration, with shafts with fixed pitch propellers, driven by two 10,500kW electric propulsion motors. W rtsil will also supply the onboard N storage, a N Pac200 with 2x200cu.m tanks, including the gas supply system.

The new technology enables the ferries to meet coming IMO, and EU sulphur and nitrogen restrictions in the Baltic Sea emission control area. The vessel will be the first newbuildings to comply with loyd s egister of Shipping s provisional rules for N propulsion.

P MAS N E A ED P PE E & UDDE

olls- oyce has developed an integrated propeller and rudder system that offers increased propulsive efficiency without any loss in manoeuvrability. Named Promas, the propeller and the rudder are considered as one propulsion unit and are designed together for optimum propulsive efficiency. The rudder design is adapted to the particular propeller design and is optimised to regain losses from the propeller slipstream, whilst the propeller design utilises the presence of the rudder bulb and hubcap to recover losses behind the propeller hub. A well-designed twist adapts the rudder to the rotation of the propeller slipstream and reduces the local angle of attack on the rudders leading edge. This gives a more efficient rudder with lower drag and better recovery of rotational energy from the propeller slipstream.

Propeller and rudder are designed together as a single unit for optimum propulsive efficiency. Propulsive efficiency is typically increased by -6 percent. In addition it improved low speed manoeuvrability and also improves the possibility for installing low pressure pulse and low noise propeller designs, according to rundit . e says the best results are achieved on blunt single screw vessels with a block coefficient of 0. 5-0.85 and a design speed in the 1 to 16 knot range. ere the efficiency gain can be as much as 6-9 percent compared with conventional solutions. For faster and slenderer single or twin screw vessels such as car carriers, efficiency improvements of 2-5 percent can be expected.

The ferry operator Scandlines is currently building two ferries for their Denmark- ermany route which will receive one five-bladed Promas arrangement at the centreline and two ,500kW olls- oyce s A ipull units, also five-bladed, on the sides.

Promas ite, a simplified version of Promas is intended for vessel upgrading. The vessel's existing rudder is retained, but is fitted with a prefabricated bulb, while the propeller is equipped with a special hubcap and new blades. The roro-passenger ferry DFDS Pearl Seaway received such a system in early 2011. Earlier, in 2010, such a system was installed on Carnival cruise ines Carnival lory, followed by Vision of the Seas. Both vessels had FP propellers and were fitted with Kamewa bolted propellers during the upgrade.

One of the most recent cruise ships receiving Promas ite is Norwegian Sun, received in January new blades for its 5.8m diameter CP propellers with specially designed hub caps and custom rudder bulbs on the existing flap rudders. At cruising speed of 1 -21 knots, more than ten percent propulsive improvement was achieved, in measurements conducted by DNV.

Sistership Norwegian Spirit is to receive her Promas conversion later this year. On Pearl Seaway a twin .8m Promas ite propulsion system was installed during the vessels regular dry-docking. DFDS s technical team found the efficiency improvement to be up to 12.5 percent, representing a payback time of about 1.5 years.

Wärtsilä secured the order for its dual-fuel gas engines for Finnish 2,600 passenger cruise ferry owner Viking Line, which opted for LNG as fuel for its two Baltic ferry newbuildings ordered from STX Finland.

Wider 42 - *Commercial*

By Keith Henderson

A planning boat that is light, fast and economical, yet has the usable deck area of a boat twice it's si e and the stability of a trimaran Sounds too good to be true, well that was my initial reaction until I attended the launch in Italy of the transformer Wider 2.

I call it transformer because that's what it does. It can plane at speeds over 50 knots and when it stops, by pressing a button, in 12 secs it transforms the cockpit deck into an are twice its si e. To ensure stability, two sponsons, one each side slide out from the hull to increase stability. The original and extended working areas are completely flat and a table can be raised from the floor to provide a raised working surface or dinette.

The boat demonstrated is aimed 100 per cent at the recreational market and while still on the drawing board attracted several domestic and international orders.

The concept of the transforming hull is the vision of Italian naval architect Tilli Antonelli , founder and former President of Pershing, one of the Ferretti roup's most important brands. e left the roup a year ago to launch the new marine company Wider achts. They are located in Castelvecchio di Montepor io (PU), near the Adriatic coast of Italy in one of Pershing's former facilities used for developing and building yachts in the period from 1990 to 200 it occupies an area of 10,000 sq. m., (100,000 sq. ft.) of which ,600 sq. m. (50,000 sq. ft.) is covered.

Several members of Pershing joined Antonelli's new team including two partners Paolo Favilla, previously eneral Manager of randi Navi Veloci and CEO of Pershing, and Vincen o Sulpi i, former Interior Designer, and subsequently Project Manager. All the shipyard's models are endorsed by the hand of Fulvio De Simoni, the prestigious yacht designer who was with Pershing from the beginning. This skilled team were able to build the first Wider 2ft (12.9 m) from concept to finished boat in an eight month period.

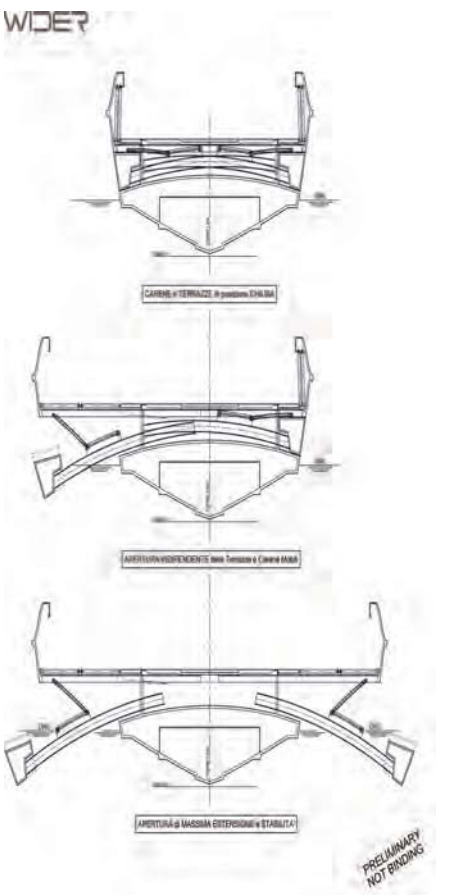
It was Tilli Antonelli who had the idea to think out how to effectively double the cockpit area without (permanently) increasing its length or beam. Pushing a button, it transforms the cockpit si e to two times its beam in only 12 seconds. The enlargened area is only permitted to be activated when the boat is at rest, or at manevering speed below knots. To ensure sufficient stability to carry the extended cockpit width, part of the hull folds downwards and outwards, into the water as sponsons to provide increased buoyancy. In the Wider 2, the boat's width increases from .5 (11 6 ') to 6.6 m (21). Although the transformation is usually carried out symmetrically, i.e. on both sides, if required, for example if going alongside another vessel or quay, one of the sides can be retracted without affecting the stability of the structure. A sunshade attaches to the Bimini Top to cover the cockpit area completely even in the widened condition.

The Wider mechanism rests onto of the sealed hull eliminating any connection between the interior and exterior of the yacht. The parts of the system are produced in pre-impregnated carbon for lightweight, great strength and prevents corrosion for a reliable lifecycle. The design is such that there are no shafts or rods protruding through hull that could leak or cause flooding of the hull.

As a luxury motor yacht, much attention has been given to its comfort and ease of use. There is a carbon fiber bench in the cockpit that doubles up as a dinette rising up out of the deck on pressing a button. ight and comfortable seating while reducing space when not in use is achieved by the provision of a full set of inflatable cockpit furniture which doubles as floatation objects for bathers. The pilot and copilot seats fold up to reveal a cockpit galley, complete with sink, worktop, teppan-yaki griddle and a 50 ltr (1,8 cu. ft.) ice box.

The remarkable appearance and striking design of the Wider 2 also delivers outstanding performance. Three times world offshore powerboat championship winner and race boat designer Mark Wilson supervised the hull design and propulsion specifications. The hull is double stepped providing excellent lift for fast planing and a high top speed with good stability. The construction of the hull and components is extremely light in weight being produced in 0 percent hybrid carbon textile using the patented Scrimp System of vacuum infusion moulding. The vacuum technique ensures a consolidated bonding of resin with the fibers and closed cell PVC core thereby eliminating opportunities for delamination of the structure. Many other parts are produced in carbon by the alternative prepreg (pre-imprenated) autoclave technique to achieve similar results.

The cockpit deck and other surfaces have the appearance and touch similar to teak, however the material chosen is EST EC, a composite which has an environmentally sustainable life cycle, is non-slip, fireproof, virtually indestructible, is stain proof and does not require



maintenance. he standard propulsion package is twin turbocharged diesel engines with Arneson ASD surface dri es running olla si blade, stainless steel propellers. he ounting of the engines is staggered, racing style, so they can be ounted closer together to reduce bea re uire ent. ne power option is twin an ar s of kW (hp) each, a top speed of knots is achie able with a cruising speed of knots. A higher power alternati e is twin Cu ins SB 5. of 5 kW (hp) gi ing a top speed of 5 knots and cruising speed of knots. The efficiency of the hull is proven by the low fuel consumption of only 100 l/h (26 US galls/h) for both Cummins engines. The standard 1,000 ltr (26 US galls) fuel tank, therefore gives a cruising radius of 00 nautical miles or a passage distance of approximately 900 nautical miles, allowing for reserves. A bowthruster is provided to improve maneuverability. The propulsion, instrumentation and navigation equipment is all connected to a high speed CAN-bus network designed by Naviop that ensures full integration and control of the different individual devices. Instead of the usual bank of switches and instruments on a dashboard, all the command and control functions are centrali ed in a Formula1 style, multi-functional steering wheel with built-in multi-view touch screen display. It allows complete overview of the operating parameters as well as commanding the propulsion functions such as throttle, trim etc. In addition there is a conventional helm station with throttle controls and 12 inch touchscreen display for radar, navigation charts and echo sounder. To date, orders for seven boats from customers in USA, South America and Europe have been received based only on the drawings and specifications and before the demonstrator was completed. The unit cost is 1.16m and includes a very high specification of equipment and accessories. The number of options is limited due to the high initial specification. Now that production has already started on the 2 footer, plans for a smaller Wider model measuring around 5 feet (10. m) and a larger one of around 50 feet (15.2m) will follow, both of which will maintain the Wider philosophy of widening cockpits. The main focus of Wider achts is on recreational applications, however they recogni e that there is potential using their patented technology for numerous commercial/workboat applications where a wider more stable platform would attract interest for e.g. surveying. There could also be security/naval applications for vessels equipped with this expansion system. In view of Wider achts' many orders for recreational boats, and their commitment to that market, they believe that demand for other applications may be best achieved through a licensing arrangement with other yards, speciali ed in commercial or naval markets.

Tilli Antonelli
Born in Russi, province of Ravenna, Italy, in 1955, in the 80s he began his entrepreneurial career when he and friends created Cantieri Navali dell'Adriatico — later to become Pershing. On March 3, 2010, Tilli Antonelli left the management of Pershing S.p.A. to launch a new project: **Wider**.

Fulvio De Simoni
Yacht designer of international fame, De Simoni has had a close working relationship with Tilli Antonelli since 1985, the year in which he contributed to outlining the identity of the first Pershing yacht. Born in La Spezia, at the age of 14 he already had his own boat. De Simoni has designed more than 2500 for the biggest names in the sector: Mochi Craft, Raffaelli, Gianetti, Antago Yacht, Abacus, Evo Marine, Pershing, Ilver, ... to name but a few.

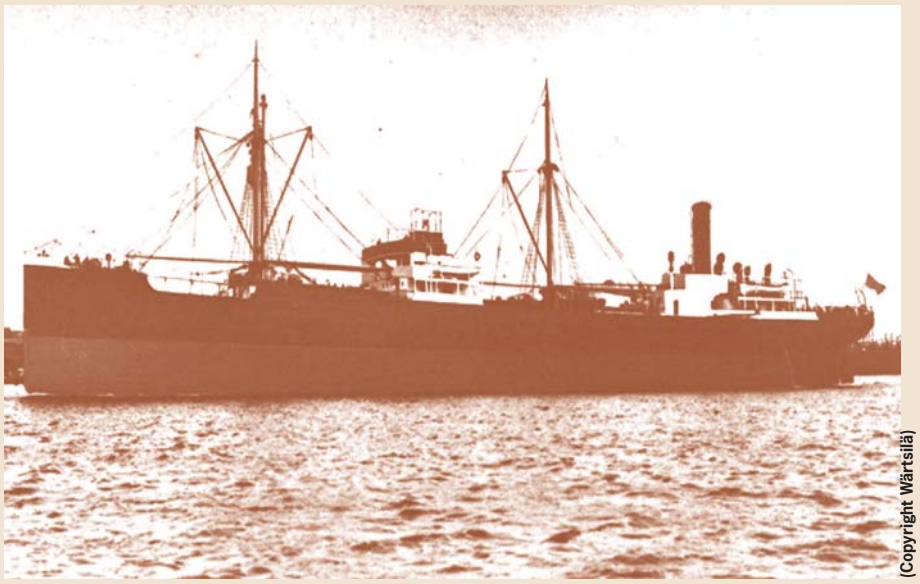
The Engine of Progress

125 years of motor shipping: from humble beginnings to completely replacing of the steam engine

and, wind, steam and motor power the four basic types of marine propulsion are familiar to all maritime experts. Exactly when the combustion engine was first used for ship propulsion is, however, largely unknown. This is not particularly surprising, seeing that it took more than 50 years for the diesel engine to finally replace the steam engine. The diesel engine was not the forerunner in the history of motorised shipping, as is wrongly stated in various sources; this was in fact the Otto engine. The decisive factor for the success of the combustion engine as a marine drive was finding a motor type with development potential, and such an engine was invented by Nicolaus August Otto in 18 6 in Cologne. Further developmental work resulted in the fastrunning engines of Carl Ben and ottlieb Daimler. Both were granted a patent in 1886 with a direct reference to their use for ship propulsion. The specification of Deutsches eichspatent D P 5 Automobile fuelled by gas , issued to Ben Cie. on 29 January 1886, states This construction is intended for the operation mainly of light carriages and small boats, such as those used to carry 1 to persons. One year later, Ben was already building ship drives, thus establishing a tradition in the city of Mannheim. While the Ben patent was generally directed at powering road vehicles, ottlieb Daimler soon afterwards applied for a patent describing a device for driving the propeller shaft of a ship by gas or by a petroleum engine , which was granted on 9 October 1886 (D P 9 6). In respect of the practical implementation of engine technology, Daimler was quicker than Ben in August 1886, he was already conducting his first trials on the river Neckar.

SEA N S PS W EN NES

At the time, the terms gas engine and gaspowered motor referred to the Otto engine, a spark ignition device. The petroleum engine , which soon came into use, was from 1890 a hot bulb engine invented by erbert Akroyd Stuart, an Englishman. Owing to the relatively low power of the first units, they were initially used for the propulsion of inland waterway vessels. The hot bulb engines, which primarily operated in twostroke mode, soon offered adequate power for small seagoing ships and proved reliable for fishing vessels and as an auxiliary drive for sailing ships. This type remained in use up until the 19 0s. During the transitional phase from the Otto to the diesel



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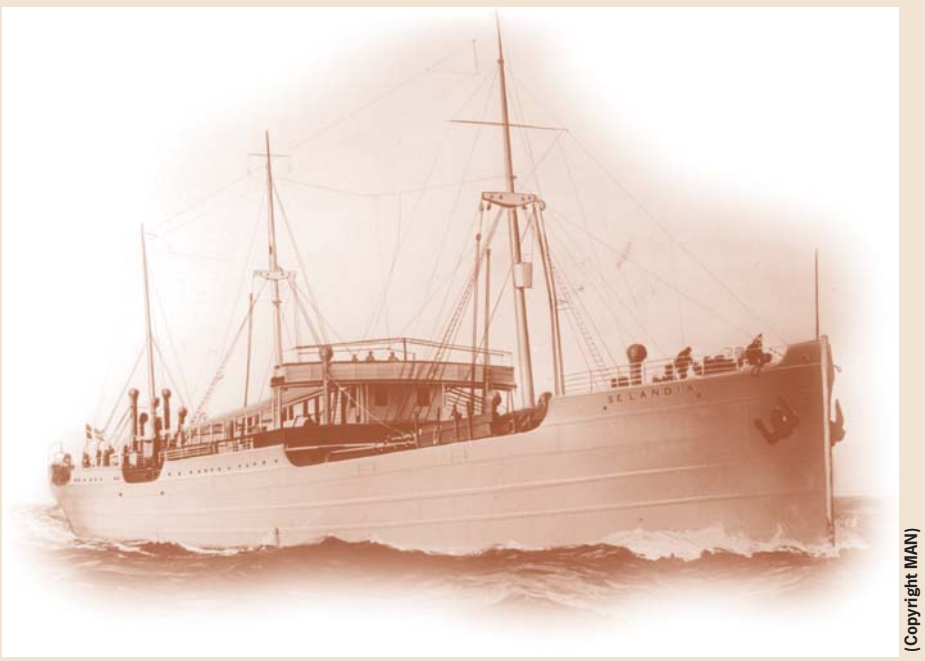
Jahre Motorschiffahrt Monte Pnedo



(Copyright MAN)

Jahre Motorschiffahrt MAN Selandia.

engine, efforts were made to find suitable alternative combustion processes over a period of more than two decades. Besides the hot bulb engine, a type developed by Jan Brons of the Netherlands may be regarded as the precursor of the antechamber engine. Using more advanced designs, the firm asmotorenFabrik Deut equipped many fishing vessels and other small ships for several decades. Other methods were tried but did not lead to sustained success. Produced from 189 to 189 at Maschinenfabrik Augsburg (which later became MAN) with considerable support from einrich von Bu and Friedrich Krupp in Essen, the diesel engine was first used for ship propulsion in 190 . Up to the Selandia in 1912, which is regarded as the first seagoing motor vessel, other manufacturers produced various marine diesel engines, primarily for inland waterway vessels, some also without a reversing facility. This led to the first dieselelectric transmission in 190 with Vandal , a ussian river tanker of 50 tonnes. With his rational heat engine of 189 , udolf Diesel pursued the aim of developing a power plant to supersede the steam engines and all known combustion engines . owever, more than 60 years were to elapse from the birth of this grand idea up to full replacement of the steam engine in shipping.

The first main prerequisite for ship operation at large output levels was the ability to reverse the running direction of the engines, which was achieved in 1910. At the time, the propulsion plants employing diesel engines were still quite large and very heavy. Compressed air was used to blow the fuel into the combustion chamber. ere an air compressor was needed to achieve a much higher pressure for the air than was possible by the compression of the engines.

B EA U F E D ESE EN NE

It was only the hydraulic injection of fuel developed by Motorenfabrik Deut in 1921 for large engines that brought about decisive change. Marine diesel engines became lighter, smaller and could be operated at higher speeds. This leap in innovation also allowed the construction of much more powerful units. Another factor was that the structure of the marine diesel engine had, until then, primarily followed the steam engine. The engines produced by Burmeister Wain in Copenhagen were exceptions to this rule. The application of the B W design principles and hydraulic fuel injection gave the diesel engine its br eakthrough as a marine drive. The final step towards attaining diesel engines of high power, as used today, was taken by Alfred B chi of Swit erland with the exhaustdriven turbocharger developed in 1905. When it then also became possible to produce powerful turbochargers, which were needed for operation with twostroke diesel engines, the ambitious goal of udolf Diesel was ultimately achieved in the mid1950s and, even then, the development of the marine diesel engine still did not end there.

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U.S. Navy Mobile Landing Platform (MLP) Integrated Power System

Converteam Integrated Power System on MLPs

Paul Thompson, VP, Converteam

Following graduating with a Masters in Engineering at the University of Manchester in the U.K., Thompson joined Converteam s engineering development team in 199 . Since Arriving in the US in 1998, Thompson has been Converteam's business leader in securing and delivering the Integrated Power Systems fielded on the US Navy's T-AKE, M P and umwalt class of ships. In addition his leadership has fielded the US Navy's first ybrid Electric Drive solution aboard the US Makin Island (D-8). e also enabled a focused D roup within Converteam to work with the Navy and Industry to deliver the company's next generation of Integrated Power System.

Maritime Reporter caught-up with Paul ho pson, Vice President, Navy Business and overnment Affairs, Converteam Inc., which recently was awarded a significant new U.S. Navy contract to design and supply the complete electric power, propulsion and vessel automation system for the Mobile anding Platform (M P) program.

Put in perspective the latest propulsion contract you were awarded, as it relates overall to Converteam's maritime business?

ho pson Converteam's technical solutions have dominated the US Navy's Integrated Power System platforms for over a decade. To achieve this, Converteam has provided solid, reliable and proven solutions for the Navy. These solutions are not unique to the Navy, but rather the Navy has benefitted from programs and projects, developments and deployments, and service and support from a worldwide fleet. Converteam's worldwide Naval fleet includes 1.2 W of installed propulsion power on over 100 vessels. With this knowledge and capability, Converteam has delivered to the US Navy's Auxiliary fleet technology, systems, aftermarket support and spares on time, on budget and with fixed price contracts.

The latest M P award to Converteam offers some unique benefits to the Military Sealift Command (MSC). Based upon an established supply chain within the Navy, the M P platform is a mixture of technology and equipment from the T-AKE program and the BP Tanker program. M P has leveraged an existing supply chain, technology, spares and aftermarket team that Converteam has established in the US over this last decade. Although the M P is limited to three ships, the Converteam approach has provided MSC with a platform so similar in technology and control that the shore-based infrastructure that is already in place to train for and support the operations of the 1 T-AKE vessels will be able to support the three M P vessels power, propulsion and control needs. In short, NAVSEA has demonstrated cost reductions on acquisitions and in service of support by utili ing common commercial equipment across a family of applications. This is not a new idea however the Navy and eneral Dynamics NASSCO leadership have delivered. This is just the beginning and with further pressure on budgets and higher expectations on program efficiencies and operational cost reductions their remains much to be done for the T-AOE( ) class and others. The investments to date and sound business practices already established within the MSC and PEO Ships leadership have much more to benefit from on the T-AKE and M P story. Today, from an Integrated Power System perspective a new lead ship program can be an optimi ation of an existing solution. This provides the Navy with known and manageable risk within lead ship programs and is a major element in providing the Shipbuilders with the ability to fix price new projects with the Navy.

What is unique about this contract/propulsion solution?

ho pson Unique in this Integrated Power System contract is just how much commonality the M P solution has with the existing T-AKE equipment and supply chain. With well over 90 commonality, the vessels detailed design and production schedule is being executed at lightning speed and with efficiencies usually reserved only for the final vessels in a production run. Further efficiencies will be reali ed by MSC in operating the vessel in areas of training, spares and supportability.

Do the solutions you provide for military applications transfer to the commercial space?

ho pson To name just a few similar solutions to the M P ( ) program exist on the T-AKE (1), BP Tanker ( ), TOTE o- o (2) fleets, as well as the oyal Navy's Auxiliary Oiler (2) and PD (2) fleets.

Where do you see opportunities for your power solutions in the coming two to three years?

ho pson Our solutions are provided to a global market. From the commercial marine market (cruise ships to oil supply vessels) and from commercial government to combatant vessels our technology and solutions are evolving to the needs and objectives of these often global customers. Sure, optimi ation and some unique environment requirements are employed in some of our US applications, but this is affordable because the solutions are not developed from the ground-up—specifically for a single customer—rather they are customi ed for a particular process. In addition, recent challenges in the wind and solar markets have been driving our developments, some of which are being and will be enjoyed by the Navy.

Converteam will supply an Integrated Power Systems (IPS) to the U.S. Navy with the award of an additional multi-million dollar contract to design and supply the complete electric power, propulsion and vessel automation system for the Mobile Landing Platform (MLP) program.

(Photo courtesy of NASSCO & the U.S. Navy)

Goltens Takes on the *Piracy Challenge*

As pirates raise the stakes on a number of key ocean trades, simple, cost-effective preventive measures can be put in place to protect ships and their crew in a matter of hours, said Paul Friedberg, President of oltens Worldwide Services.

We offer a service out of our Fujairah facility which encompasses the installation of a combination of ra or wire and hoistable spikes which effectively prevents the boarding of merchant vessels by

pirates, he explains. We ve already kitted out 2 Vela V CCs, six Prisco V CCs and six more V CCs each belonging to Teekay and Chevron.

While Friedberg readily admits the ultimate solution to the plague of piracy extends far beyond wire and armed guards, he contend that this represents an immediate step to protect vessels and crews.

International shipping is fiddling while ome burns, Friedberg said. Compare our protection with the cost of deploying armed guards, said Friedman. The work can be carried out in hours with a minimum of disruption to a ship s trading pattern. We realise that there is a longer-term challenge in piracy prevention but, in the interim, and for a few thousand dollars, we can help owners to safeguard their assets and their seafarers, and we can probably help insurers to sleep a little better too.

Bay Shipbuilding Awards Siemens Propulsion Deal

Siemens won a multi-million dollar contract to equip two 92.5 x 19m PSVs with its diesel electric propulsion solution at Fincantieri Marine roup s Bay Shipbuilding Company. A Tidewater subsidiary will construct the vessels. The pair will be outfitted with Siemens Blue multi-drive low-voltage propulsion system. Siemens will provide the main generators, main propulsion and thruster motors, switchboards, power management system and its IMAC Automation system for alarm, monitoring and control functions, in addition to a unique, fully integrated Siemens electrical FiFi 2 system. As part of a Sole Source Vendor (SSV) solution, Siemens is also responsible for the designing, engineering, commissioning and project management of the diesel electric and automation system.

Certified by ABS, both will be capable of speeds of more than 1 knots.

Marorka Signs with Thenamaris Ships Mgmt.

The reek ship management company Thenamaris will implement Marorka's energy management systems for its fleet of Tankers, Bulk Carriers and Container ships.

The companies entered recently into a contract that will bring the leading Marorka energy management systems on board all Thenamaris ships. Further to system installation the companies will cooperate on future development of energy management for the maritime sector. The solutions selected include Marorka's Propulsion, Trim ull, Power Plant, Steam, Voyages, Navigation and eporting products.

www.marorka.com

The "Boat"

Summer Jam

(Photo: Vladimir Bibik)

The "Captain"

John C. O'Malley

The "Crew"

Vladimir Bibik

Rob Howard

Marco Raponi

Juerg Roth

Thomas Rothenberger

Greg Trauthwein

Simon Weisser

O'Malley & Crew

Celebrate "60 @ Sea"

When ohn C. Malley, current owner and *publisher, was born on ul , , Maritime Reporter Engineering ews* had already published for more than a do en years, founded in 19 9 as *Maritime ctivit Reports* by John's grandfather, ohn . Malley. From the beginning the mandate of the publication was fairly simple to deliver credible and insightful maritime business information to the largest possible audience of maritime decision makers, including ship and boat owners, ship and boat builders, naval architects and marine engineers.

John C. has dedicated the bulk of his professional career to growing the family business, and since taking the helm from his father and uncle in the early 1990s, has grown the business from a single title to a multi-dimensional media company, complete with four marine industry print publi*cations including Maritime Reporter Engineering ews*, which today is the world's largest circulation audited marine publication with a global circulation of more than 6,000 -- more than half a do en websites; specialty publication creation and management; as well as trade show and conference ownership and management.

As he has made his life on and from the sea, it was fitting that on the occasion of John C.'s 60th birthday, a group of colleagues and friends joined him on a celebratory sailing adventure aboard a 9-ft. sailboat off the coasts of Italy and France last month. Sailing the Mediterranean Sea between Sardinia, Italy, and Corsica, France onboard the 9-ft. bareboat charter sailboat *ummer am* (pictured far left) were a crew including colleagues from our U.S. headquarters, including myself; ob oward, Vice President of Sales Marketing; ladi ir Bibik, Manager, Information Technology Services; plus four friends from Swit erland ho as othenberger, Marco aponi, uerg oth and Si on Weisser.

The journey began over the July weekend in the small port town of Olbia, situated on the Northeast corner of Sardinia, an approximate hour flight time from ome. The trek took a Northwest path hugging the coast of Sardinia, with overnight stays in the ports of Portisco on Sardinia, Bonifacio on the Southern tip of Corsica, and a Maddalena, a picturesque small Italian island straight across the Sardinian port town of Palau.

e aut wei

(L to R) John O'Malley, Rob Howard and Vladimir Bibik explore Bonafacio, France. The waters between Sardinia, Italy and Corsica, France are teaming with commercial, government and personal vessel traffic ... notably one yacht bigger than the next!

(Images: Greg Trauthwein & Vladimir Bibik)

Staying Connected with

iSatPhone^{PRO}

By Greg Trauthwein

Timing, they say, is everything, and this proved true when I had an informal lunch in mid-June 2011 with INMA SAT's Frank August in New ork City. At the time I was preparing for a personal sailing trip through the Mediterranean Sea between Sardinia and Corsica, and Frank immediately sensed the opportunity to outfit me and the crew of Summer Jam with the new Inmarsat iSatPhone^{P} for testing at sea (pictured below). In short, the iSatPhone^{P} , which is INMA SAT's first global handheld, performed seamlessly and as advertised lightweight but powerful, with the ability to gain and hold a strong signal in conditions good and bad.

The iSatPhone^{P} was purpose-built to delivers clear voice quality, designed to work in just about any conditions with no worries about battery life because it is designed to offer up to 8 hours talk time and 100 hours of standby. While it is hard to compare the rigors of a working vessel with those of a 9-ft. sailboat operating between Sardinia, Italy and Corsica, France, it is fair to report that if you seek a rugged handset with long battery life and reliability of signal and communication, the iSatPhone^{P} is worth consideration. **www.isatphonelive.com**

The iSatPhone^{PRO} was recently put to the test at sea by Maritime Reporter.

iSatPhone^{PRO}

Dimensions
Length: 170mm
Width: 54mm
Depth: 39mm

Weight
279g - incl. battery

Interfaces
Micro USB
Audio socket
Antenna port
Bluetooth 2.0

Offshore Service Vessel Innovation

The transformation of the Offshore Service Vessel has been rapid and dramatic, with the incorporation of innumerable safety and quality control systems, as well as a push for increasing clean and emission free operations. Follow are just a few examples of cutting edge offshore service vessels to recently hit the market.

E W SS C NCEP

Another example of modern propulsion is that of a new platform supply vessel being built by shipowner Vestland Offshore, in Norway, for delivery in 2012. For this VS 85 vessel the power and propulsion system is based on W rtsil 's ow oss Concept. It features a transformerless design, and its benefits include high redundancy, high efficiency and good system availability and is available for power applications between 5MW and 5MW. It comes in both low and medium voltage versions and has already been installed on some 0 vessels. W rtsil claims C is an alternative to power distribution systems, comprising higher efficiency, lower weight and volume, and high system redundancy. The basic idea is to reduce and eliminate the need for supply (pulse) transformers for the frequency converters, especially those supplying electric propulsion. The elimination of transformers saves 2 to in efficiency, and lower electric losses result in improved fuel economy. The introduction of the C transformer in the electric distribution system also reduces the overall short circuit current level by 15 to 20 . This allow for a system design comprising low voltage components resulting in weight and volume savings, in some cases up to 5 to 0 , compared to traditional systems with transformers.

A F WA D AND N C EW B A

randweld Shipyards announced the successful delivery of the first forward landing crew boat design in the region. The 2 M vessel features a customi ed forward bow fender, designed for steady and secure landing into a dedicated offshore landing structure. Upon swift landing, the offshore personnel can directly disembark to the offshore platform. This feature allows for safe, stable and quick embarkation of passengers to the offshore site. The special features of the 2 M vessel will create a strong impact in the region by transforming existing means of crew transfer. The vessel design has been adapted to meet modern operational requirements which seek faster, safer and more reliable means of operation, therefore we expect potential orders for this vessel in the near future. said Jamal Abki, randweld eneral Manager.

The 2 M Mutawa202 was built for Mutawa Marine EST and will be chartered to TOTA to support offshore Oil and as operations. The vessel incorporates various commercial benefits such as reduced operational time. Furthermore, the vessel's distinctive ability to operate in rough weather will cut down cost required to charter helicopter for crew transfer.

Special features of the DO P IN Class design include

- Speed of over 0 knots
- tons deck cargo
- Seaworthiness and ability to operate in unfavorable weather conditions
- ighly Maneuverable
- ow noise and vibration
- 60 degree visibility from wheelhouse
- External FiFI (00m /hr)
- 6x Crew accommodation
- Safe enclosure of passengers within bulwark ensures safer embarkation in rough weather.

randweld Shipyards has developed into a world renowned shipbuilder of high speed, light weight aluminum vessels in the offshore industry. randweld currently oversees the construction of 2 vessels including hybrid seismic support vessels, Anchor andling Tug Supply vessels with DP2 capability, Dive maintenance and support vessels among others.

Grandweld's Shipyards delivered its first "forward looking" crewboat.


Island Intervention will soon be ready for demanding operations in the Norwegian Sea.

Zhejiang Shipbuilding Co., Ltd. delivered PX105 to Bourbon Offshore.

N WE AN N ENU

The offshore construction vessel, Island Intervention, of the S 121 design from Ulstein was named. Shipowner Island Offshore has great expectations for the new vessel, which will carry out advanced operations in the Norwegian Sea this autumn.

Island Offshore is a leader within light well intervention and managing director of the company, vard Ulstein, said that its entire fleet is currently fully booked

Island Intervention will become an

important addition to our fleet. This autumn, the vessel will be installing a series of production trees on the seabed in the Norwegian Sea for a Norwegian oil company.

This is a complicated operation, but we are confident, that with the right crew, this vessel is the best equipment for the job.

Our experience with its sister vessels, Island Constructor, also delivered by U STEIN, is very good and we therefore have great expectations for the new vessel, said vard Ulstein.

The 120 x 25-m vessel can accommodate 100 persons. It is fitted with a tower for module handling, moonpool, OV hangar, offshore crane, helipad, and a iesel-electric propulsion system. The vessel is also equipped with U STEIN COM and U STEIN IAS.

B U B N S E S A A N

hejiang Shipbuilding Co., td. an affiliate to Sinopacific Shipbuilding roup, held the delivery and naming ceremony of global lead vessel P 105, a ship built for Bourbon Offshore Norway on the morning of August 9.

The company leaders and the ship owner's representatives attended this grand ceremony, where P 105 was named as BOU BON F ONT.

As an offshore support vessel designed by U STEIN, P 105 features an overall length of 88.8m, breadth of 19m, depth of 8m, DWT of 00T, and maximum speed of 15.5 knots. Since the ship's shape integrates U STEIN's latest design concept, namely -BOW, the linear box is capable of conquering huge waves in the terrible marine environment.

Besides, a set of retractable and all-direction propeller and super-silent shrouded propeller at the bow can increase the ship speed and enhance DP2 positioning functions considerably.

The successful launch of P 105 offshore support vessel is undoubtedly a sign that Sinopacific Shipbuilding roup has owned the world's leading construction technology of offshore support vessels, and has developed into a shipbuilding base for offshore support vessels with high value added. Meanwhile, it's a landmark for the future construction of P 105 offshore support vessel.

Harvey Invests in LNG-Powered Boats

Signal Shipbuilding Emerges as the Winner for this Landmark 3-Boat, $165m Deal

arvey ulf International Marine will sign a deal for three N -powered offshore vessels to be built by Signal Shipbuilding. At a arvey ulf board meeting held on Satruday, August 2 , the ouisiana-based operator s management team approved the 165 million deal, said arvey ulf International Marine Chairman CEO, Shane J. uidry. Also, the Board appro ed an additional illion for another newbuilds, as well as 5 illion for ac uisitions.

Harvey Gulf International Marine's LNG powered PSV SV310DF Design.

Picture courtesy of STXM

The SV 10DF vessels, designed by ST Marine Inc., are a dual-fuel design, with N capacity for seven days with three engines running at full power. The deadweight is 5,520dwt at load line and the transit speed is 1 knots. With the stringent overnmental demands for both reduced emissions and clean burning energy use, arvey ulf has decided to make the capital investment, uidry said.

arvey ulf International Marine is also building a series of three reen 00 offshore support vessels. The arvey Supporter, scheduled for delivery ins November, will be the first OSV in the U.S. to be constructed to the rigid regulatory standards required for ENVI O , reen Passport (P) certification by the American Bureau of Shipping (ABS). The two SV 10DF N dual-fuel PSV s are also to receive a similar class notation.

The ouisiana-based company, speciali ing in towing drilling rigs and providing Offshore Supply and Multi-Purpose Support Vessels for deepwater water operations in the U.S. ulf of Mexico, has in recent years aggressively pursued a path of focused growth and acquisition. arvey ulf s newer vessels are typically characteri ed by state-of-the-art technology, usually outfitted above and beyond simple regulatory requirements. The deal to acquire still more vessels, this time focusing on clean running N tonnage, appears to further that trend.

— Joe Keefe

Foundations for the Offshore Wind Industry

The Merits of *Jack-Up Platforms*

By Wally Lafferty

A new type of offshore wind foundation has emerged from the offshore oil fields and is rapidly gaining attention. It may be one of the most innovative and promising turbine foundation technologies to come along in years. It is certainly one of the most proven. he enerable ack up platfor is showing pro ise to be a leading contender in the Crown Estate s upco ing rd round of U offshore wind pro ects.

The jack up platform has been well proven for more than 60 years in the harshest of ocean environments. It has been known for its ability to lift a significant amount of weight far more than would be required to lift the largest offshore turbines. Its unique design lifts the entire turbine and platform well above the waves, dramatically reducing many of the environmental loads.

Designed and produced specifically for the offshore wind industry by Offshore Wind Power Systems of Texas, C, the Titan 200 carries the design credibility earned by a team who has designed jack up platforms for offshore oil and gas fields for more than 0 years. The team's intimate familiarity with the IEC 16 00- design and verification standards will ensure that industry certification of the Titan will be straight forward. Indeed, the American Bureau of Shipping has already issued a letter stating that they are prepared to provide classification and statutory certification for the Titan. ABS was responsible for certifying 95 of the world's operational jack up platforms.

E AN

The Titan is an offshore jack up platform composed of a unique shaped hull with a diameter slightly smaller than the wind turbine's rotor, standing on three legs with a lifting system. Known as a Dutch Tri-floater design, the platform cannot overturn while being towed to the installation site if any one arm begins to dip into the water, the other two arms push down to bring it back to hori ontal. This inherent stabili ing feature makes the Titan an ideal platform to move tall heavy turbines around on the water.

The platform is towed to the installation site with the wind turbine already completely installed. Upon arrival, its legs are lowered and embedded into the seabed and its hull is elevated to provide a stable foundation capable of withstanding extraordinary environmental loads. A typical modern drilling jack up is capable of working in the worst storm conditions in the world with wave heights up to 80 ft, wind speeds in excess of 100 knots and in water depths up to 500 feet.

The Titan is specifically designed to lift the heaviest wind turbine in up to 00 feet of water. The installed platform will endure Category 5 storms and continue operation after the wind turbine has been inspected. The platform is able to hold a tolerance of 0.01 degree in the hori ontal plane, which means that the wind turbine will remain within a 0.02 degree vertical tolerance during a storm. The hull is elevated to allow storm waves as high as 60 feet to pass harmlessly beneath. The legs are pinned into the seabed at a sufficient depth to compensate for the overturning moment of its turbine load in wind speeds exceeding 0 meters per second (more than 8 knots). The Titan can be designed to meet all European and US offshore environmental conditions.

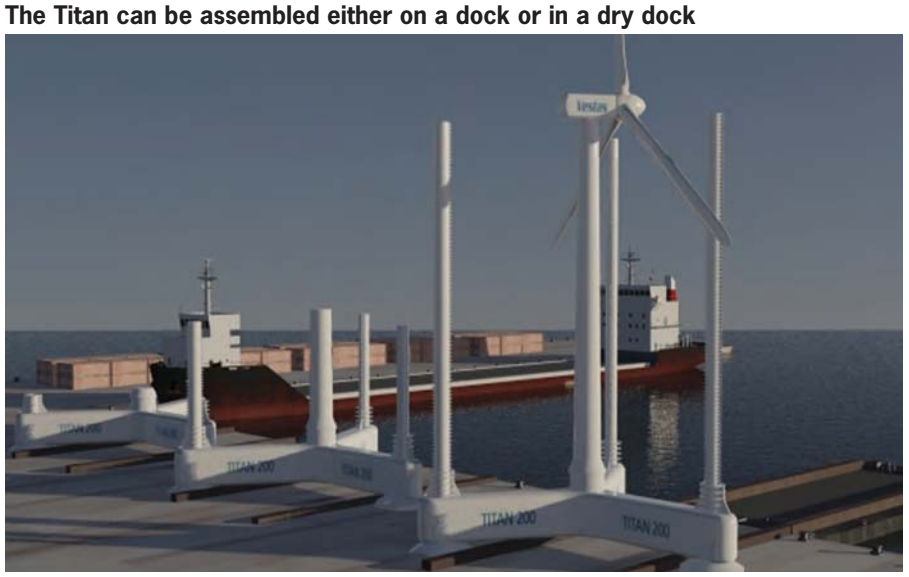
The natural frequencies of the Titan can be tuned in multiple ways, by shortening or lengthening the reach of the hull, there are even patented methods used to fine tune the natural frequency of the platform after installation if that becomes necessary.

DEP MEN & NS A A N

The Titan can be assembled either on a dock or in a dry dock, depending on available boat yard capabilities near the wind farm construction site. After assembly and certification of the jack up platform, the turbine is fully erected on the hull. This makes construction of the Titan platform and turbine less costly since land-based equipment is all that is employed for final assembly.

If the system is completed inside a dry

The Titan can be assembled either on a dock or in a dry dock



dock, then the dock is filled with water and the platform is floated to a nearby staging area where the system is jacked up and fully tested with convenient near-shore access. If the system is completed on a dock, the finished assembly will be moved on rails onto a launch barge and the barge will be submerged.

Once check out testing and certification is complete, the hull is lowered back into the water, the legs are raised, and the Titan is towed to the site. A tug boat is the only vessel required for deployment and installation.

Jack up platforms operate in three modes transit from one location to another, jacking up or down, and elevated on its legs. Each mode has specific precautions and regulatory requirements to be followed to ensure smooth and safe operations.

The transit mode occurs when the platform and turbine are being moved from one location (the dock) to another (the site). The physics involved in moving jack up platforms under heavy loads is well understood, the turbine blades are positioned as bunny ears with one blade secured to the tower and the other two blades tethered to the platform. Though the legs of the platform must be raised to ensure clearance of the seabed during tow, the legs will be lowered as the water depth permits to lower the vertical center of gravity and reduce leg inertia loads due to tow motions.

As the platform arrives at its permanent location, preparations are made to begin the jacking up mode. Jacking occurs in stages where the soil density below the feet (spud cans) is closely monitored using parametric acoustic (echo sounding) transducers installed inside the bottom of each leg. Soil information and predicted penetration curves beneath the spud cans are calculated and understood before installation begins and is updated throughout the jacking operation.

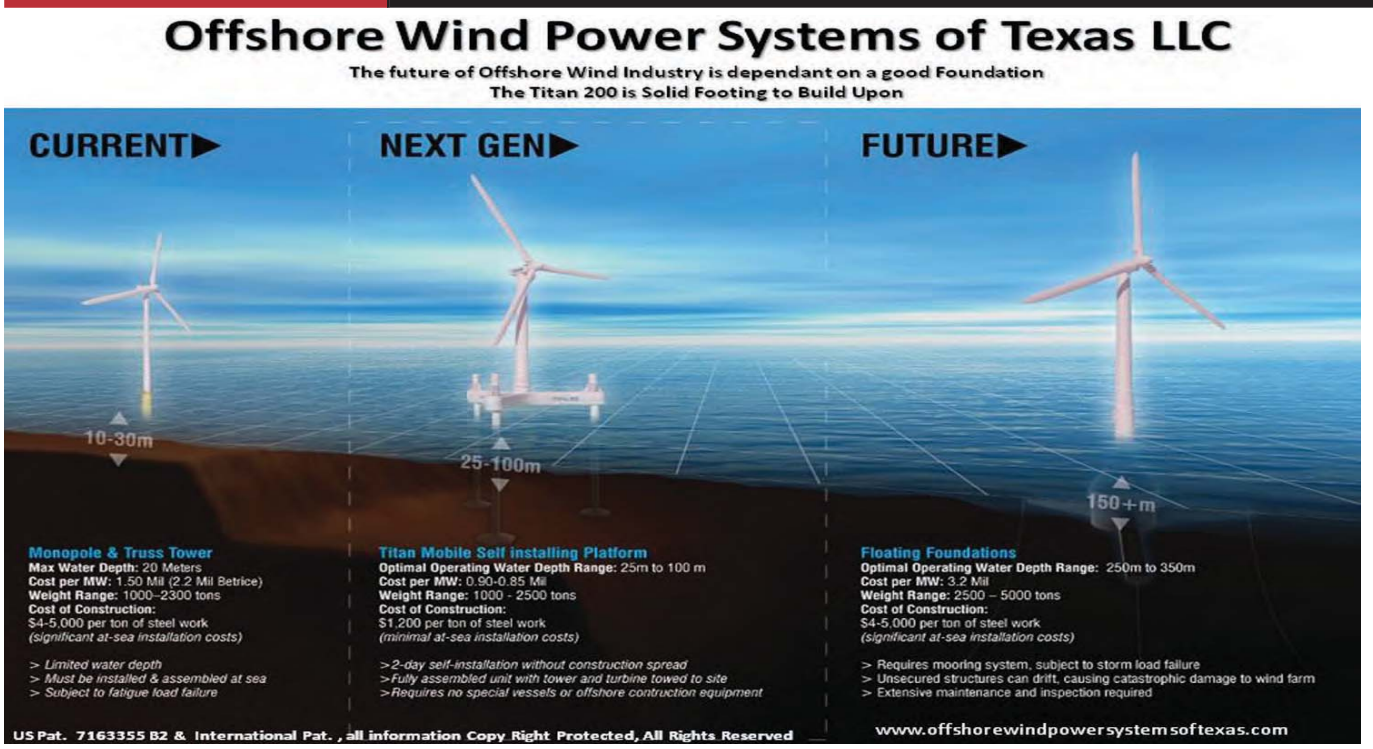
When the Titan is precisely positioned, the legs are lowered to the sea floor where the spud cans penetrate the top layer of soil and begin to bear the load of the platform. The spud cans are designed to optimi e soil penetration and allow the unit to be installed on uneven or sloping bottoms.

As increasing load is brought to bear on the soil, the legs continue to penetrate until the soil reaches maximum bearing pressure and the hull begins to lift. The legs and several ballast tanks inside the hull are then filled with sea water to increase the weight of the platform well beyond the maximum loads of the operational system.

As the weight of the platform continues to increase with added ballast and the legs continue penetrating deeper into the soil, the hull is never allowed to raise more than a couple of feet above the natural buoyant state of the hull. If a leg encounters a punch through , where the leg suddenly penetrates a layer of soft soil or an underground cavity, the risk to the platform and turbine are minimi ed as the hull's own buoyancy will compensate and absorb the sudden shift. If a leg encounters an obstacle, such as a boulder, the legs can be retracted, the platform can be rotated or moved, and the process can begin again.

Once the soil's maximum bearing pressure is again reached under the additional weight of the platform with its full ballast, the legs reach their maximum penetration depth and the system is considered to be anchored sufficiently to overcome all maximum operational loads. At this point all the ballast water is discharged. The platform can then be jacked up to its operational height above the water, leaving an air gap underneath the platform of about 60 feet. The platform is lifted higher than the highest recorded storm wave for the location. Throughout the jacking process, each leg is controlled separately to ensure that the hull remains level at all times during the lift.

The platform is towed to the installation site with the wind turbine already completely installed. Upon arrival, its legs are lowered and embedded into the seabed and its hull is elevated to provide a stable foundation capable of withstanding extraordinary environmental loads.



Upon completion of the jacking mode, the system is secured in the elevated mode for operation. The jacking system is stopped, the brakes are set, and the leg locking system is engaged. The cabling is brought on board using an industry standard J-tube installed in one of the legs.

Since the water has been removed from inside the legs, the J-tube and cable splice remain fully man-accessible. All operational systems are thoroughly checked out before the turbine blades are un-tethered and released.

The jacking system and echo sounding equipment are removed and put back on the boat to be returned and used on the next installation. In the event the legs settle further into the soil over time, the jacking system can be reinstalled and the platform leveled.

E F N S S EM

The Titan's patented lifting jacks are designed to be removed and reused on other platforms. Therefore, only one or two sets of jacks (leased to the developer) are required for installation of the wind farm. After completion of the wind farm, it will only be necessary to retain one set of lifting jacks for long term maintenance of the site.

D MENS NS

The Titan platform is structurally designed to carry significant loads under extreme conditions.

The structural integrity of the platform is carried through the plates of the steel hull with load bearing members placed inside at spaced intervals. The legs are designed with cross members spaced inside the leg from top to bottom. These cross members resist deformation of the leg so the lifting jacks always remain in position for the lifting pinions. The height of the legs is determined by the water depth of the site.

D C S DE ASSEMB

Final assembly of the Titan is performed in a boat yard closest to the location of the wind farm. This work includes integration of all sub-system components, assembly of the platform, and test and verification. The Titan is fully certified prior to installation of the wind turbine, which also occurs on the dock.

All of this assembly work provides jobs for the local community.

Wind turbines up to 10 MW can be accommodated in the current Titan design. The turbine is assembled on the hull and fully erected before the system is floated. Thus, all construction is performed using land-based lifting equipment.

EN NMEN A MPAC

The Titan presents the lowest environmental impact of any offshore foundation.

No seabed preparation is required. No mooring lines are used that could introduce an unwanted ha ard to whales or other migratory sea life. There are no piles, so decommissioning leaves no steel embedded in or lying about on the sea floor.

There will be no underwater cutting or demolition. There is no need for concrete on the sea floor, so no cleanup will be required.

C S AD AN A ES

When the Titan was submitted to the UK Carbon Trust as a contender for ound , the economics showed it to be very favorable. The cost per megawatt based on a 5 MW turbine in 5- 5 meters of water falls well within the range of the Carbon Trust's goal for innovative and affordable solutions (0.8 M USD/MW).

There are several comparative cost drivers that should be examined that demonstrate a solid business case for the Titan. These include lower installation costs, shorter project timelines, reduced liability insurance, elimination of preparation and stabili ing materials, fewer decommissioning expenses, the ability to make repairs, and competitive fabrication costs. Installation of the Titan and wind turbine can be completed without the need for expensive speciali ed vessels. A standard service vessel may be employed to tow, carry supplies, parts, and personnel back and forth. The elimination of all speciali ed construction vessels represents a significant cost savings to the project. The Titan's ability to take on bal-

last and lower its legs during towing and jacking operations thereby lowering the center of gravity and extending the metacentric height of the platform and turbine makes the platform more stable in higher winds and waves. This opens the acceptable installation weather window significantly, thus shortening project timelines.

In the event of serious storm or ship damages to the platform or a gearbox or generator needs to be replaced, the Titan can be brought back to the dock for repairs; jacket and monopile foundations cannot, and the maintenance work can be performed using land-based equipment.

The delivered, uninstalled cost of the Titan appears to fall below the cost of a delivered, uninstalled jacket foundation designed to carry similar loads (if you include the weight of the jacket's four steel piles and the transition top piece). Fabrication of the Titan for a .6 MW turbine uses roughly 1, 00 tons of steel.

The Titan's weight for a 5 MW turbine only increases slightly to 1,800 tons, and for a 10 MW turbine the weight rises to only 2,000 tons. This puts the Titan at around M USD installed for a 5 MW turbine in 0 meters of water.

These figures assume that the Titan platforms are shipped 20 at a time. Project delivery windows will vary, but it is easily conceivable to ship as many as 20 foundations every 5 days.

There is one more cost advantage that should be mentioned, the developer can use the Titan to his advantage in two ways. First, he can purchase a Titan platform designed for the turbine he intends to install later. e can install the met mast on the platform and use it to take wind measurements for a year. After the wind measurement task is completed, he can bring the Titan back to the dock, remove the met mast from the platform and replace it with a turbine, recovering the cost he would have otherwise spent on a met mast foundation. The Titan is flexible enough to accommodate such a change.

SUMMA

The Titan provides an exciting opportunity to change the game for offshore wind farms and investors. The advantages are plentiful, and the technology itself is very mature. And don't underestimate the importance of mature regulatory statutes already in place for platforms such as these, as this helps to minimi e the investment risk to the project.

The highest cost drivers on other foundations are more difficult to estimate due to the unpredictable nature of the weather. But the Titan eliminates the cost of over-the-water construction equipment and their associated liability insurance costs, and reduces the unpredictable cost of paying for equipment while waiting for the weather to improve.

About the Author

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Strong Recovery in Subsea Vessel Demand

By Simon Robb & Ian Jones, Douglas-Westwood

Expenditure on Subsea technology is climbing, with expanding infrastructure outstripping capability. Maturing markets are imposing greater I M (inspection, repair maintenance) requirements, while the move to deepwater has exposed a shortage of vessels capable of undertaking work. Vessel day rates are escalating.

Between 11 and 15 o er b will be spent on subsea essel ops in field de elop ent M subsea inter- ention, and plug and abandon ent. his is a rise of 5 o er the pre ious fi e years.

The move to deepwater production has dominated discussion within the oil industry over the past five years. The development of deepwater reserves is growing rapidly, with exploration driven by appetite. As other opportunities are played out and the rate of discovery onshore and in shallow waters declines, the potential for world-class discoveries has led operators to a new focus on deepwater. Technological advances and subsea demand provide the context for a new Douglas-Westwood report, *he World ubsea essels perations Market* . A comprehensive review of the subsea vessel operations, the report builds on Douglas-Westwood's World Subsea ardware Market eport and includes supply and demand and expenditure forecasting.

D E S AND ENDS

The Subsea Vessels Operations Markets are driven by

he o e to deepwater production Offshore production is increasing as more deep water fields come onstream. While shallow water oil production is stabilising, deepwater production will grow from 8 of total global production in 2010 to 12 by 2025.

Use of subsea technology Deepwater fields are increasingly being developed using subsea technology due to its cost effectiveness in deep water, strong resistance to prevailing climatic conditions and the ability to link marginal fields through tie-backs to a hub facility.

he adoption of subsea separation and boosting technology allows an increase in production from difficult reservoirs, longer distance tiebacks (due to improved flow assurance) and marginal fields (due to greater overall recovery and product rates).

MA E C NF DENCE

Based on these fundamentals, the subsea vessel operations market has returned to growth after a brief spell of retrenchment. In the Douglas-Westwood *World ubsea essels perations Market* we see market expansion being reflected both in climbing expenditure and in the number of vessel days needed to fulfil requirements.

Douglas-Westwood forecast that global vessel demand will climb to over 1 ,000 days during 2011-2015, a 28 increase over the number of days recorded for the previous five year period. Within this growth forecast, we anticipate that deep water demand will be the sub-sector which continues to register the notable rates of expansion.

The number of vessel days in deepwaters will increase by 5 , or just over 120,000 days over the next five years, compared to the 80,000 days logged during 2006-2010.

This sub-sectoral growth is highlighted when looked at against a shallow water comparison such as the delivery of surface trees. While absolute numbers of trees will continue to climb over the same period, to 2015 a compound annual growth rate of just 1 is anticipated.

The difference is a product of the typically more mature state of shallow water fields and of the economic uncertainty that has ruled investment markets over the past four years. The economic downturn was preceded by a period of unusual confidence, in which construction dwarfed all historic newbuild booms. The last five years have seen an unprecedented increase in the number of newbuilds entering the subsea vessel market. Between 2006 and 2011, 1 0 vessels entered increasing capacity by 85 from 1 in 2006 to 05 in 2011.

A slackening of demand has led to oversupply of vessels suitable for shallow waters and an associated slippage of day rates. Despite this continuing difficulty in one part of the market, analysis suggests that even during the worst of the economic uncertainty, confidence was never very far from the broader subsea vessels market. Double-digit growth in expenditure was recorded for all but one of the past six years. A backlog of orders kept the industry busy in 2008 and 2009, and in only one year has expenditure actually declined. That was in 2010, when a total spend of 9.8 bn was recorded, against 10.5 bn in 2009.

The delayed impact of the economic challenges on Subsea Vessels Operations points to the inherently cyclical nature of the market, with contractors shielded by pre-orders. In 2011 general expenditure has rebounded strongly, with the dip in spending for 2010 now wholly compensated for. Douglas-Westwood forecasts suggest that the . b spend recorded in 1 will grow to 11. b in 11. This rate of increase returns growth to double digits, where it should sustain to 2015 and beyond. The market for subsea vessels operations will be worth 1. b more in 2011 than in 2009. This is market expansion at close to 10 over two years not just recovery, but outright growth.

E NA E PEND U E

As one would expect, there are clear differences in expenditure across regions, with the deepwater olden Triangle' of West African, oM and Bra ilian waters continuing to account for the majority of spending. These waters will absorb a 5 share of expenditure to 2015.

The latter part of the forecast period should accord with the introduction of more complex deepwater projects. This will benefit for deepwater contractors with the capability to accept complex contracts. New deepwater awards will suit contractors with modern fleets, strong project execution skills and a track record in deepwater delivery.

We forecast that Africa is the single largest market by expenditure with close to 1 b in investment required a 60 increase on spending over the last five years. The atin American market is marginally smaller in scale; with an expected spend of 1 bn over the next five years in comparison to the 1 . bn anticipated in Africa however, rates of growth are higher, at 62 to 2015.

North American waters present a more complex picture, and not just because of the continuing fall-out of the Deepwater ori on oil spill. The subsea vessels operations market in the OM is maturing, and while it remains one of the most significant subsea regions for vessel demand and expenditure, this is strongly associated with the I M requirement of the region's massive installed base of offshore infrastructure. North American waters account for of I M activity monitored by Douglas-Westwood vessel expenditure here will be some 20 higher over the forecast period than for the past five years. The global market for I M is also growing strongly. In 2011 Douglas-Westwood value the total demand for I M vessel activity at .6b. As the installed infrastructure base expands, we expect this to climb to 5.8b by 2015.

rowth in atin American and African waters is strongly correlated with field development. The imperative to renew reserves continues to push operators to waters which, in the past, may have been regarded as too considerable a challenge. Based on this, Douglas-Westwood calculates that the number of vessel days needed to support deepwater development will double over the next five years. The push to deeper water requires vessels with better capabilities rendering much of the current fleet inadequate.

F EE C A AC E S CS

From 2000-2011 of the vessels deliverd to the market possessed a crane capacity of less than 150t. While these vessels will be more than capable of op-

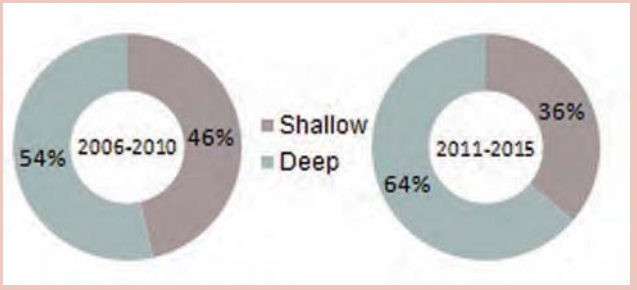


Figure 1
Annual Subsea Tree Installations by Water Depth

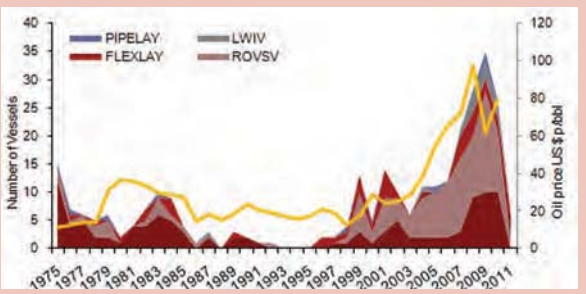


Figure 2
Fleet Characteristics

erating in the I M sector they will not be suitable for operations in future subsea field developments. With the move to larger and more complex deepwater projects the industry will require vessels that have lifting capacities above 250t. While there has been a slight trend towards this fro 5 onwards only of the new fleet possessed a lifting capacity abo e 5 t by 11. owever, appetite doesn't necessarily imply delivery. There are constraints on the normali ation of supply, including access to funding.

The access of cheap debt to finance newbuild vessels was a major driver of fleet growth to 2008. Borrowing was at an historic high, with banks eager to provide cheap debt to finance new vessels. In recent years the impact of the global recession has seen banks retrench this position reducing access to capital and constraining future fleet expansion.

The vessel contracting market remains highly fragmented, with Douglas-Westwood identifying over 00 vessels from close to 80 different contractors. Cal Dive (1), Subsea (10), Technip (9), Maridive ( ) and Mermaid Offshore (6) are the leading vessel contractors by market share.

Get This Report

Further information on *he World ubsea essels perations Market* is available at

www.douglaswestwood.com
E: research@douglaswestwood.com
Tel: +44 1227 780999

DA A ES

The report contains forecasts for day rates across different classes of vessel. For DSVs, the industry has just undergone an aggressive newbuild cycle with many new DSV Type 1 vessels entering the market after 200 . These were required to meet demand from developing regions and ageing infrastructure in mature regions that require a significant amount of I M work. ates will continue to grow robustly during the forecast period, potentially reaching 220,000 in Europe and 2 0,000 in atin America.

The market for Type 1 OVSVs is now saturated, as shallow water activities are becoming less common. The industry now requires Type 2 OVSVs able to operate in deeper waters, especially in West Africa, atin America and the oM. The regions where dayrates are most likely to remain strong are in West Africa and Western Europe at around 15,000 to 20,000 lower than in atin America.

The lowest rates will be for vessels with small crane capacities as these are most likely to be used to carry out inspection work. These are much smaller vessels with less versatility and are limited by the number of tasks that they are capable of performing. egionally, the lowest rates will be in Asia where vessel quality has historically been poor. Douglas-Westwood believes dayrates for a low-end OVSV to be in the region of 60,000 per day, forecast to grow slightly by 2015. Dayrates in other regions have fluctuated heavily during the economic crisis and are not likely to recover until 2011 and 2012. Even then information shows that dayrates will be just short or equal to where they were in 2008 at around 120,000. After this they should grow slowly but steadily.

DeSimone Named President XL Insurance

XL Insurance, the insurance underwriting operations of XL Group, appointed Richard DeSimone as President of its US Ocean and Inland Marine unit. DeSimone will be based in New York and reports to Neil Robertson, Chief Executive, Global Specialty in London. "This is a clear statement of our intent to become a more significant market for both Inland and Ocean Marine business in the United States" said Robertson. DeSimone will join XL Insurance in a newly created position as President of the US Ocean and Inland Marine underwriting teams and will work closely with Colin Sprott, Chief Underwriting Officer of Global Marine and Offshore Energy and Chris Smith as Chief Underwriter for Ocean Marine in North America to further build XL Insurance's global presence in the International Marine insurance market. Prior to joining XL Insurance, DeSimone served as President of the Travelers Insurance Companies' Ocean Marine unit. A US Navy Veteran, he earned his undergraduate degree in Business Administration from Baruch College and a graduate degree in Transportation Management from SUNY's Maritime College.

Luna Joins Hempel USA

Hempel USA hired Jose Luna as its new Regional Marketing Manager for the Americas. Luna has more than 13 years of experience in the paint industry, experience gained at AkzoNobel/ International Paint and ex former ICI/Devoe Coatings where he worked in several countries and roles. He has a broad range of experience, from technical service, sales, engineering and strategic marketing.

Travelers Names Martino President of Ocean Marine

The Travelers Companies, Inc. announced the appointment of Raymond T. Martino as the President of its Ocean Marine business unit. Martino is responsible for the overall leadership and management of Travelers Ocean Marine, which provides highly specialized property and liability insurance products for maritime-oriented risks including commercial hulls, cargo, luxury yachts, port authorities, shipbuilders and numerous other specialized exposures. Prior to this appointment, Martino served as Vice President of Field Operations for Ocean Marine. Previously, he was theChief Underwriting Officer for Ocean Marine, and from 2000 to 2003, he served as the head of the Ocean Marine operation for Atlantic Mutual.

GL Strengthens Inland Focus

ermanischer loyd appointed a new Business Development Manager (BDM), Tom Dorsman, and a dedicated Technical Coordinator, uben oeleveld, speciali ing in Inland Marine. Dorsman will provide a dedicated sales specialist for the inland waterway vessel (IWV) market.


Roeleveld


Dorsman

oeleveld will be responsible for coordinating activities between plan approval surveyors, field surveyors, business development managers and clients. oeleveld will also be s contact with the IVW (Inspectie Verkeer en Waterstaat), the Dutch Shipping Inspectorate. Both Dorsman and oeleveld are based in otterdam.

Andersen New Head of DnB NOR, Shanghai Branch

DnB NO appointed Vidar Andersen as the new head of its Shanghai branch succeeding Espen und who has returned to the bank's headquarters in Oslo after an eight year stint as China country head.


Andersen

DnB NOR Markets Appoints Three

DnB NO Markets announced three analyst appointments to its energy, offshore and maritime equity research team in Singapore. Kay im, CFA, has been appointed the bank's new ead of Securities esearch for Asia. Erik Bergöö joins the Singapore office as regional shipping analyst from the bank's headquarters in Norway. And ucas uang is the regional energy analyst for Asia Pacific, focusing on the upstream oil gas sector.

W&O Transforms Corporate Structure

W O has transformed its corporate structure by creating six regional management positions for a more strategic approach to the marketplace. The following individuals have been appointed to these positions.

Scott endrickson, Northeast egional Manager will leads the inden, N.J. and Philadelphia, Pa. branches, which service the entire New England and northern Midwest regions, extending from Nova Scotia to the reat akes to Baltimore.

Carl erman, Southeast egional Manager will lead the Norfolk, Va.; Charleston, S.C.; and Jacksonville, Ft. auderdale and Tampa, Fla. branches.

Debbie arner, ulf of Mexico egional Manager will lead W O's ulf branches, which include ouston, Texas; Mobile, Ala.; and ouma and New Orleans, a.

Jim eynolds, Pacific Southwest egional Manager, has been with Valve Automation and Controls (VAC) in San Diego, Calif., since 199 . VAC was acquired by W O in 2000.

Bruce Mc achlin, Pacific Northwest egional Manager oversees W O's Pacific Northwest branches, which include Seattle, Wash., and Vancouver, British Columbia, that service from Alaska to Alameda, Calif., and around the Pacific im.

Kristof Adam, European egional Manager joined W O in March of this year, oversees W O's European branches in Antwerp, Belgium and otterdam, Netherlands.

Kirby Retires from SeaArk

SeaArk Marine announced the retirement of Vice President of Engineering, Casmer Cas Kirby. Kirby began his career with SeaArk Marine, Inc. in 1991 and was promoted to Vice President of Engineering for the company in 2006. During that time, he led SeaArk Marine's Engineering team through some of the most successful periods of the company's history. Kirby will be succeeded by SeaArk Marine's current Engineering Department Manager onald onnie Mc ehee who is himself a 20 year plus veteran of the organi ation.


Kirby


McGehee

Transocean Appoints Shaw

Transocean said that ob Shaw has been appointed to serve as Vice President, Controller and Principal Accounting Officer, effective December 1, 2011.

Resolve Acquires Elliott Bay Design Group's New Orleans Office

esolve Marine roup, Inc. acquired the staff and assets of the Elliott Bay Design roup's (EBD) New Orleans, a., office. The addition of former EBD personnel in New Orleans expands esolve's in-house engineering team, creating a new company and wholly owned subsidiary esolve Engineering roup, C. The roup will support esolve's worldwide operations while continuing to serve both former and new clients as a full-service naval architecture and marine engineering group. esolve

CargoMaxx Comes to Houston

Van Aalst Marine Offshore, inventors of the multi application tank system CargoMaxx, have opened an office in ouston, T . Contact details Van Aalst ouston C, 00 ouisiana, Suite 950, ouston, T 002; Tel (8 2) 90-2526.

Wärtsilä Opens Workshop in Helsinki

W rtsil opened a new workshop in elsinki, Finland, enabling it to offer a wide range of workshop services with rapid response times. Operations in

ABS: First Approval in Principle for Floating Renewable Energy Plant

ABS issued its first Approval in Principle (AIP) for a new concept renewable energy design in which a moored spar uses ammonia in a closed-cycle process to produce electrical power for a commercial utility grid. Unlike wind, tidal or solar power the advanced design for this Ocean Thermal Energy Conversion (OTEC) system can deliver constant output 2 hours a day.

Developed by OTEC International (OTI) C of Baltimore, Maryland, the approach converts liquid ammonia into gas in a heat exchanger using warm ocean surface water. The ammonia gas then drives turbines that turn generators to produce electricity which is then exported through a submarine power cable to a land-based utility company. The ammonia is condensed back into a liquid phase using cold ocean water pumped from ,000 ft. below the water's surface and the process begins again. The process is based upon the well-established thermodynamic ankine cycle. Key elements evaluated by ABS include spar hull si ing for the deep draft spar design; energy conversion equipment located in the spar; handling and storage of ha ardous materials; deepwater mooring system; cold water pipe conduit suspended from the base of the spar; construction and attachment of the cold water pipe conduit; and power transmission cable with its securing, anchoring and suspension arrangements. ABS reviewed the design for an extended 0-year facility on-station life.

elsinki began in the beginning of August 2011. The new workshop, located in Vuosaari arbor in Eastern elsinki, covers an area of 1150 sq. m. and is equipped with 5 and 12.5 ton overhead cranes, advanced machining equipment, fuel injection system component overhaul tools and testing devices, and the latest technology service tools.

Yang Ming Implements AMOS

SpecTec completed the implementation of AMOS on the first lot of 0 ships with ang Ming. SpecTec will install AMOS on another 11 ships during the course of 2011, while more system will be implemented in 2012 to complete the Fleet installation which is to date of 89 ships. ing Dynasty (18 2 1995). As of July 2011, ang Ming had a fleet of 89 vessels and 1 bulk carriers, including two coal ships operated for others.

FPSO OSX-1 Begins Journey

FPSO OS -1, the first floating production, storage and offloading vessel in OS 's fleet, concluded its conversion in Singapore and set sail for Bra il. The FPSO OS -1 is commissioned to produce the first oil for O , which is expected to start oil production during the fourth quarter of 2011. Chartered by O for a period of 20 years at an average day rate of 26 ,000, FPSO OS -1 will be employed in the Waimea accu

Hatteland Appoints Korea Agent

atteland Display appointed e-M Co., td. (e-M) as its sole agent in Korea. The company will act as the support office for all customers in Korea in addition to providing sales facilities for all D products.

L-3 Marine & Power Expands in Brazil

- Marine Power Systems (M PS) extended its presence into the Bra ilian marketplace by opening a new office and appointing local staff. All regional operations for the new Bra ilian office will be led by Jonas enrique obo. obo will serve as the director of business development for the - Marine Offshore Bra il office, reporting directly to Brian Pope, senior VP of business development.

Samson Awarded 11th Patent

Samson was awarded a patent titled ine Structure for Marine Use in Contaminated Environments. This technology was developed by Samson while partnering with Delmar Systems on its patented Omni-Max gravity-installed anchor system. Proper deployment of the new anchor design would have been hampered by the use of traditional anchor chain in this application. The additional weight of chain affects the trajectory of the anchor causing insufficient embedment into the seabed. To address this issue, Samson engineers developed a synthetic alternative that replaces the anchor chain. One of the biggest challenges in this application was protection of the synthetic rope from the damaging effects of outside contaminants it comes in contact with during use. This is a very unique application, and is the first time any synthetic has been used under the mud-line for an offshore mooring. Samson engineers developed M-8, an eight-strand plaited construction. Each of the eight-strands is composed of a three-strand, all Dyneema fiber core covered with a filter barrier to resist soil infiltration, and protected from abrasion by a braided Dyneema fiber cover.

The Future: Lightweight & Risk-Based

by Franz Evegren

Transport development today is driven by cost-effectiveness. At the same time, improved safety of man, property and environment is of highest concern. F P (Fibre einforced Polymer) composite is a lightweight construction material with a high strength to weight ratio compared to steel. These properties, in combination with low maintenance, lack of corrosion, easy repair, prolonged lifetime and unleashed design possibilities make F P composite an appealing alternative to steel in maritime applications. By using F P composites in merchant ships, a reduction in structural weight of up to 60 is achievable, and the lower fuel consumption per ton-km payload will make additional costs pay off in short time of operation. Isolation at sea and the fact that F P composite is combustible make fire safety a key issue when considering ship structures in this material. The new SO AS fire safety regulation for alternative design and arrangements provides an opening for these constructions and SP Technical esearch Institute of Sweden can show several examples of where the novel material has been successfully implemented.

Authorities, the public and customers are increasingly demanding sustainable solutions, which will eventually lead to emission trading emerging, giving environmentally sound transport a competitive advantage. While land transport has become cleaner as a result of new regulations and new technology, the shipping industry still has a long way to go to reduce its environmental impact. According to recent reports, emissions from land-based polluters in Europe are expected to be cut in half by 20 0, but in the same period, emissions from shipping will double if no actions are taken. The fact that emissions from shipping are increasing in both absolute and relative terms makes the problem acute. Primarily, the use of fossil fuels needs to be reduced. Bunker fuel combustion results in atmospheric emissions including air pollutants, greenhouse gases, o one-depleting substances and gases that contribute to acidification and eutrophication of both sea and land. A stronger focus on both energy efficiency and environmental competitiveness makes lightweight applications and lightweight designs increasingly important. The lighter the vessel, the more it can carry, or the less energy it needs for propulsion. A successful project where this became practise was in the development of two inland ships purchased by the Swedish ship owner Styrsöbolaget. They were required to cut transportation times in half and were therefore built in F P composite. They are now the two first fully certified carbon fibre SC vessels in the world. As expected, during their first year of operation in the archipelago of the Swedish west coast, they decreased the time of transport by 50 , but the fuel consumption is still the same as for previous vessels, which is remarkable. As above, a reduction in weight can significantly reduce the energy necessary for propulsion. This applies not least to many ships today that carry additional keel weight in order to increase stability. If the vessel is large and the weight is reduced high up in the superstructure, several times the reduced weight may also be possible to withdraw from the keel (still achieving the former stability). In other cases, it is more operative to be able to utili e the weight-savings to carry more cargo or passengers. Any technique that allows an increase of the pay load/displacement ratio is obviously economically interesting.

In the research project ASS, investigations were done to see how much the weight could be reduced in different lightweight construction applications. It was found that a reduction in structural weight of up to 60 is achievable when replacing steel or aluminium constructions with F P composite in load-bearing structures, not considering a reduction in keel weight (final report, 2009 1 , is available at www.sp.se under publications; see also www.lass.nu).

Another advantage of the F P composite material is the possibility to create complicated -dimensional forms that would be very expensive to produce in a metallic material. ence, the particularities of the F P-material make it possible to reconsider basic ideas in ship design. It will also reduce the need for maintenance (no rust) and repair. Both from different design perspectives as well as from environmental and economical viewpoints, lightweight F P composite is an appealing alternative shipbuilding material compared to conventional steel. owever, the fact that load-bearing steel structures will be replaced by F P composite, which has some characteristics very different from steel, also implies new risks and invokes assessments of the impact on safety, environment and property.

ASSESS N E MPAC F F P C MP S E C NS UC NS

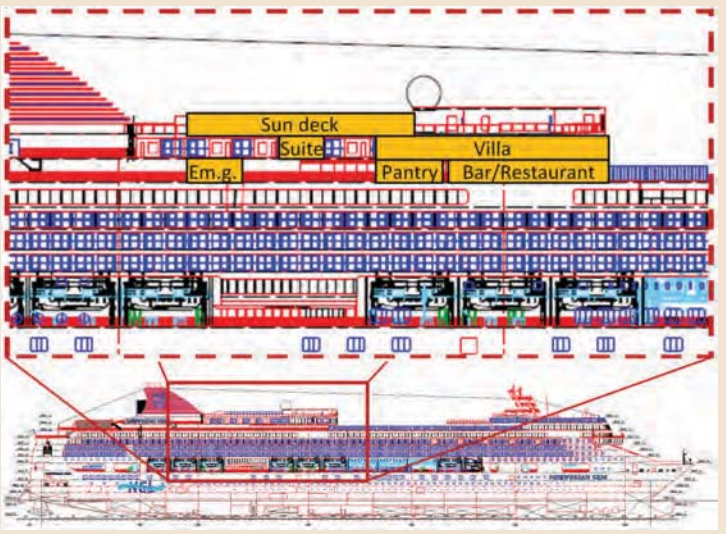
isks during building, operation and disposal of a ship with F P constructions will inevitably be, not necessarily greater but, different. A reduction in topside weight, implied by the lightweight material, could for example have a positive effect on damage stability and thus reduce the risks entailed with collision and grounding. Further increased building costs may on the other hand increase financial risks whilst disposal and recycling is still an area of research. Knowledge in how a F P construction will possibly affect economical and environmental risks is imperative. All new risks must be viewed in light of the benefits of the new construction and be evaluated over the whole lifetime of a ship. This is generally investigated in ife Cycle Assessment and ife Cycle Cost Assessment. The former covers the impact on the environment from all parts of the life cycle; from the initiation and production phase via the operation phase and to the disposal of the ship, and the latter investigates the economical impact over the ship lifetime. The analyses have been performed for F P composite construction applications in the research projects ASS and ASS-C (final report, 2011 12, at www.sp.se). In general they show that the environmental costs will be significantly lower than for steel ships and that additional costs will pay back in short time of operation.

The growing concern regarding environmental impact and increasing fuel costs make lightweight material for ship building seem as an inevitable path for development and the performed life cycle assessments show that F P composite solutions are sustainable. owever, the use of such material is impeded, not only by technical difficulties, but also by international regulations. The fact that F P composite is not considered non-combustible, a foundational requirement in SO AS, makes fire safety a key issue when considering ship structures in this material. There is, however, a way forward.

AN PEN N N M F E SAFE E U A NS

Fires have always been feared on ships. owever, the fire itself is typically not the primary danger to people onboard. The number one cause of death related to fires is smoke inhalation. The special condi-

Left
The first fully certified HSC vessel in FRP composite in the world, Valö, was built to cut transportation times in half without increasing fuel consumption.



Right
The SOLAS regulation for alternative design and arrangements for fire safety requires an analysis of plausible design fire scenarios.

The Norwegian Gem works as an application case in the EU project BESST where the five uppermost decks have been redesigned in FRP composite.

tions on a ship also make a fire more dangerous than in a building. Excepting direct damage, it could also affect manoeuvrability, cause list and in different ways affect evacuation, which is a great risk on its own. ence, fire safety is a critical issue on ships and it is vital that fire risks are thoroughly considered when utili ing combustible F P composite material on ships. Even if fire safety is properly managed, innovative technological solutions in ship design have been impeded by prescriptive requirements. For decades, pro-active approaches have been employed in other transporta tion industries, which are to a large extent driven by safety, but the process in the maritime industry has been slow. oal-based standards have been on IMO's agenda for some years now, and are expected to open up for new ways of building ships, but as of yet, very few such regulations are in place. The most important functionally-based regulation to date is probably egulation 1 in the fire safety chapter of SO AS, effective in 2002. In the past, SO AS required non-combustible materials (metals) for ship structures which the new fire safety regulation changed. According to SO AS II-2 egulation 1 , an alternative design and arrangements will be accepted if it can be regarded as at least as safe as a design complying with all prescriptive requirements. isk-based methods of fire safety engineering are used to show whether the F P composite design, in combination with supplemented fire safety arrangements, reaches at least the fire safety level of a prescriptive reference design. Accordingly, the documented level of safety of the proposed novel design is not absolute, but relative to the implicit safety of a conventional design, which is a product of the implicit safety in prescriptive regu la tions.

The Swedish research project ASS-C was coordinated by SP Technical esearch Institute of Sweden and involved several Swedish industries, as well as the erman shipyard Meyer-Werft, the insulation companies Thermal Ceramics and Saint- obain/Isover and the resin specialist ex-ion. Within this project, an objective was to develop a methodology for how to manage fire risks when building parts of cruise ships in F P composite. The application case was the Norwegian em, launched by Meyer Werft in 200 , where the five upper decks were redesigned in F P composite. The performed research provided an approach of how to reveal effects to the implicit level of fire safety when using F P composites in passenger ships and showed how to assess fire risks in such designs in line with regulations. The ASS-C project cooperated with the still ongoing EU project BESST which uses the same application case. The documentation covering the first part of the approval process (the qualitative analysis) was transferred to BESST, which will focus on the second part (quantitative analysis) of the approval process. It was shown in ASS-C that by building the upper decks in F P composite the addition of another half of a deck, including almost 100 cabins, was possible, keeping the same centre of gravity. The future is risk-based , as was proclaimed a couple of years ago at the IMO, and the ongoing reformation is a great innovation in maritime safety requirements. Working against the earlier principles of detailed and describing norms, the new methodology of rule-making is to develop rules guided by frameworks and holistic objectives; goal-based standards. Such regulations put a clear safety responsibility on the operators and shipping companies. They are also the ones that ultimately have the practical abilities to ensure the safety of the ships. Today's safety culture only instructs shipping companies to, without further considerations on safety, make sure they meet present requirements (compliance culture). Instead of dealing with safety as a simplistic add-on, the new methodology calls to involve safety as a key parameter coupled with design, economy and environment. The goal based standards will certainly call for for new ways of building ships. Not only in F P composite but as long as safety can be assessed and risks addressed, the possibilities will be endless.

A FRP composite sandwich panel

basically consists of a lightweight core separating two stiff and strong FRP laminates, as illustrated in the figure. The core material generally consists of PVC (polyvinyl chloride) foam or balsa wood and the face sheets are often made of carbon or glass fibre reinforced polymer. When these laminates are bonded on the core the composition altogether makes up a lightweight construction material with very strong and rigid qualities.

NGSCO Upgrades CCTV for LNG Fleet

Kongsberg Maritime delivered CCTV systems for installation on National as Shipping Company's (N SCO) fleet of eight N carrier vessels in the Middle East. The project was secured in conjunction with Unique Systems F E, Kongsberg Maritime's local sales agent.

Unique Systems F E will be assisting in the installation and commissioning of the Kongsberg Maritime CCTV systems with two vessels refits having been completed already in April, another in July and the remaining five planned over the next few months. Each ship's CCTV system comprises a range of robust marine grade stainless steel above deck PT (pan, tilt oom) and fixed camera stations with lowlight (day/night) viewing capabilities and washers and wipers, along with a multichannel telemetry matrix controller and 50 B digital video recorder (DV), and an additional control and viewing station.

www.km.kongsberg.com/cameras

New GD400 Rugged Handheld Computer

The eight-ounce D 00 handheld enables mobile professionals to scan bar codes, receive work assignments, check email, communicate with the office and send pictures, videos and text messages. eneral Dynamics Itronix introduces the D 00 rugged handheld computer, designed for mobile professionals. The D 00 hosts the Windows Embedded andheld 6.5 operating system that integrates quickly and easily with enterprise operations and IT networks. eneral Dynamics Itronix also offers service and support to ensure a smooth transition of the D 00 into business operations. The D 00 is IP5 certified against dust and water intrusion and built to withstand multiple drops onto concrete. It is powered by a high-performance A M Cortex-A8 processor that comes with NEON multimedia technology, accelerating the transmission of multimedia and large data files across WiFi and wireless wide area networks. Available with a number of accessories, the eneral Dynamics Itronix D 00 list price starts at 1829.

www.gd-itronix.com

HydroActive Bulkhead Seals

Mid Marine's eliant and Omni Series are bulkhead seals used by the U.S. Navy. Developed, qualified, and proven on US Navy vessels, and available commercially, these ABS product design approved seals improve a vessel s safety and can reduce total ownership costs by over 50 percent. The innovative ydroActive design only contacts the spinning shaft during flooding nearly eliminating wear and maintenance. Installation is made easy by the split, non-contacting design, lightweight components, and lenient mounting requirements.

www.midemarine.com

Type 57IL Isolator Lug Butterfly Valve

Asahi/America expanded its line of valves to include the Type 5 I Isolator ug butterfly valve. The Type 5 I Isolator ug features a unique lug design where the 16 stainless steel lugs are inserted into the valve body during the injection molding process permanently combining the lugs and valve body into one unit. The Type 5 I 's distinct design permits removal of the downstream flange while maintaining full upstream line pressure. Asahi/America's Type 5 I Isolator ug butterfly valves are available in to 8 as lever-style (with an option for a gear-operator) and 10 to 12 as gear-operator-style only. The Type 5 I features a non-wetted, low profile valve stem, ISO 5211 top flange mounting pattern, full seat liner design, and a molded padlock provision for lever handle models. The Type 5 I can also easily be electrically or pneumatically actuated using Asahi/America, Inc. actuators.

www.asahi-america.com

Nobeltec Admiral 11.1

Nobeltec offers new hardware integration and software functionality with the service pack release of Admiral 11.1 and VNS 11.1. VNS and Admiral are optimi ed for safe and accurate navigation . This newest service pack adds value to Nobeltec navigation systems. One of the most significant updates to the marine navigational software is the ability to integrate with the Furuno Digital Fish Finder (DFF1) Sounder. Integration with the Furuno DFF1 sounder is a natural addition to our Nobeltec software suite, Nobeltec eneral Manager Bill Washburn said. We re glad boaters can take advantage of the integration of two great products the Furuno DFF1 Sounder and Nobeltec VNS and Admiral software.

www.nobeltec.com

Hoists Designed for O&G FPSO Mooring System

J D Neuhaus has a reputation for the design and manufacture of materials handling products. The company also supplies purpose-designed equipment for speciali ed applications. For this purpose they can supply hoists, with a lift capacity range from 0.25Kg up to 100 tons, to API K certification. These are high durability products rated explosion proof/spark resistant and powered by compressed air or hydraulics with corrosion resistant options also available. Speciali ed hoist applications have also been developed for operation in low temperature cryogenic' conditions, together with hoists for subsea operation down to levels of 0m. Bardex Corp., headquartered in oleta, Calif., was contracted to design and build the mooring system for an FPSO ordered from Elf Petroleum Nigeria, td. (EPN), a Nigerian subsidiary of French Oil company Total S.A., and contracted through yundai eavy Industries (I). A number of overhead cranes were evaluated before Bardex concluded that JDN's hydraulic overhead crane was the best option. Instead of procuring 16 separate chain jack tensioning systems (four per corner of the FPSO and each rated at 18 tons), it was determined that one unit per corner could be used and a system of four overhead cranes used to move one chain jack tensioning system for use in all four corners of the FPSO. Additionally, the specially designed mooring system included sixteen fairlead stoppers each weighing in at almost 25 tons. A system like this had never been built before, and JDN was the only crane builder in the world capable of supplying it to specification and on time. It comprised a hydraulically powered overhead crane with a hoist lift capacity of 18 tons, designed to withstand daily ocean environmental conditions with a high atmospheric moisture content.

ww.jdneuhaus.com

A hydraulically operated overhead crane with a hoist lift capacity of eight tons, manufactured by J D Neuhaus for Bardex Corp.

BUYER'S DIRECTORY

This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all issues, only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract, MR assumes no responsibility for errors. If you are interested in having your company listed in this Buyer's Directory Section, contact Mark O'Malley at momalley@marinelink.com

ALUMINUM

Mandel Metals, 147 Main Street, Chardon, OH

ATTORNEYS

Blank Rome, 600 New Hampshire Avenue, NW Washington, DC 20037, Washington, DC , Germany , tel:(202) 944-3565, fax:(202) 772-5858 , www.blohmvoss.com

AUTOPILOT SYSTEMS

AG Marine, 5711 34th Ave NW 2nd floor, Gig Harbor, WA

AZIMUTH CONTROLS

Prime Mover Controls, 3600 Gilmore Way, Burnaby, BC V5G 4R8, Canada

BALLAST

HF Sceintific- Watts Water, 3170 Metro Parkway, Ft. Myers, FL

BOATBUILDING AND DESIGN

Brunswick Commercial and Government Products, 420 Megan Z Avenue, Edgewater, FL Molde, Norway , tel:(386) 423 - 2900, fax:386-423-9187, BCGPinfo@brunswick.com

BOW AND STERN THRUSTERS

Omnithruster Inc., 2201 Pinnacle Parkway Twinsburg, Ohio 44087, Cleveland, OH 44139, USA , tel:330 963-6310, fax:330 963-6325, widmer@omnithruster.com contact: Kurt Widmer, www.omnithruster.com

CAPSTANS

Coastal Marine Equipment, 20995 Coastal Parkway, Gulfport, MS 39503-9517, USA , tel:228-832-7655, fax:228-832-7675, sales@coastalmarineequipment.com contact: Ralph Waguespack, www.coastalmarineequipment.com

COATINGS/ CORROSION CONTROL/ PAINT

Eureka Chemical Company, 234 Lawrence Ave., South San Francisco, CA , tel:888-387-3522, sales@fluid-film.com

International MetalFusion Corp., PO Box 23279, Houston, TX 08003, USA , tel:409 515-0532, fax:409 419-0762, sales@metalize.net contact: Abad Rebollar, www.metalize.net

COMMUNICATIONS

Japan Radio, 1011 SW Klickitat Way, Bldg B Suite 100, Seattle, WA 98134, USA

COMMUNICATIONS SERVICE

David Clark, PO Box 15054, Worcester, MA 01615, USA , tel:1-800-298-6235, Sales@davidclark.com contact: Sales Department, www.davidclark.com

COMPOSITE SHAFTS

Centa Corp., 2570 Beverly Drive #128, Aurora, IL 60559, USA , tel:630-236-3500, fax:630-236-3565, bobl@centacorp.com

CORDAGE

Helkama Bica Oy, Lakimiehenkatu 4, KAARINA FI-20780, Finland , tel:+358-2-410 8700, sales@helkamabica.fi

CORROSION CONTROL

International MetalFusion Corp., PO Box 23279, HOUSTON, TX , tel:409 515-0532, fax:409 419-0762, sales@metalize.net contact: Abad Rebollar, www.metalize.net

COUPLINGS

Centa Corp., 2570 Beverly Drive #128, Aurora, IL 60559, USA

CRANKSHAFT REPAIR

In-Place Machining, 3811 N. Holton St., Milwaukee, WI 53212, USA

DECK MACHINERY- CARGO HANDLING EQUIPMENT

Coastal Marine Equipment, 20995 Coastal Parkway, Gulfport, MS 39503-9517, USA , tel:228-832-7655, fax:228-832-7675, sales@coastalmarineequipment.com

Nabrico Marine Products, 1050 Trinity Road, Ashland City, TN 37016, USA

Smith Berger Marine, 7915 10th Ave. S., Seattle, WA 98108, USA

DIESEL ENGINE- SPARE PARTS & REPAIR

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Pilots/Captains for Lower Mississippi & Gulf Canal
Job Location: USA, Open

On behalf of American Commercial Lines (ACL), we are currently seeking Captains as well as Watch Captains for their mainline vessels. This position has primary responsibility for the safety of vessel employees, the vessel, cargo and the environment.

Other accountabilities include, but not limited to:

- Ensure that work completed during his/her watch is done in accordance with Company safety policies and practices.
- Navigate the vessel safely at all times.
- Ensure all crew members on vessel receive instruction on how to do jobs properly and monitor performance.
- Carry out all duties assigned under the Vessel Security Plan as the designated vessel security officer.
- Ensure that each crew member knows the cargo of each barge in tow and has an understanding of any hazards associated with said cargoes. CFR 35.05-15b.
- Enforce all Company policies and vessel specific guidelines in support of the Crew Endurance Management System onboard all vessels.
- Participate in crew management, performance evaluation, general supervisory duties and management of the vessel's budget.
- Complete required log entries.
- Maintain radio watch as required.
- Report Certain Dangerous Cargoes (CDC) barges at pick-up, drop-off, and designated mile points to the Inland River Vessel Movement Center.
- Enforce all rules.
- Give assignments and direction to the mate and/or lead deckhand.
- Comply with all established vessel management policies and procedures.
- Maintain the vessel budget and help maximize

cost efficiency as directed.
- Provide instructions and information to crew members, ACL land-based personnel, USCG or lock personnel.

Qualifications:
- Must meet USCG physical examination requirements.
- Must be able to travel to and from vessel / training locations via air or car travel (must possess a valid driver's license).
- Must be able to work one of the following schedules: 28/28, 28/14, 14/7, or 14/14.
- Must be able to work a 6 hour on 6 hour off watch.
- Must be able to climb steep stairs, sit or stand for long periods of time.
- Must be able to ride in or pilot a crew boat or zodiac to get to/from towing vessel.
- Must be able to work in all weather conditions.

Educational/Certification Requirements:
- Must maintain valid USCG licensing.
- Master of Towing Vessels upon Western Rivers license required.
- Maintain an active TWIC.

NOTE: ADDITIONAL QUALIFICATIONS/REQUIREMENTS FOR EACH POSITION

For Lower Mississippi:
- Must have experience pushing barges (tows of 15 or more preferred).
- Must have experience running on the Lower Mississippi River.

For Inland Gulf Canal:
- Must have experience pushing barges (tows of 6 or more preferred).
- Must have an Inland Waters or Near Coastal Endorsement.

For consideration or further information, please contact:
Jennifer Shore (recruiter)
Thrive Resources
Email: jshore@thriveresources.com
Phone: 914-234-7839

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Westport CT 06880 USA
Phone: 914-234-7839
Fax: 203-774-1300
Email: jshore@thriveresources.com

Project Coordinator 11
Job Location: USA, Mobile, AL

Project Coordinator II- AUSTALUSA is seeking to fill 2 positions for Project Coordinator II-JHSV & LCS.

Qualified candidate will be responsible for coordinating, mediating and resolving craft specific production work sequence conflicts related to constraints that effect performance to cost and schedules, maintaining a daily presence regarding the work in progress for one or more crafts to monitor safety, housekeeping and work progress, as well as staff performance. Candidate will conduct craft meetings and attend others as required, perform random validation of status reporting against one or more crafts for actual work being performed ensure accuracy of reporting functions required to support EVMS, in addition to monitoring and ensuring compliance with Quality procedures, documents, contract requirements, required compliance with regulatory body and classification society guides, rules and regulations.

The eligible candidate must have acquired a high school diploma or equivalent and some college education preferred. Chosen applicant will be able to read and interpret shipbuilding contracts, specifications, regulatory body & classification society guides, rules and regulations, engineering drawings and date. A minimum 2 years experience required in a ship building, ship repair or similar construction and manufacturing industrial type environment. Candidate must have working knowledge of Earned Value Management (EVM) principals and processes and possess good communication skills, both verbally and in writing, in addition to having the ability to use and interpret relevant cost and schedule data reports and the use of scheduling software (Primavera or Microsoft Projects, etc.).

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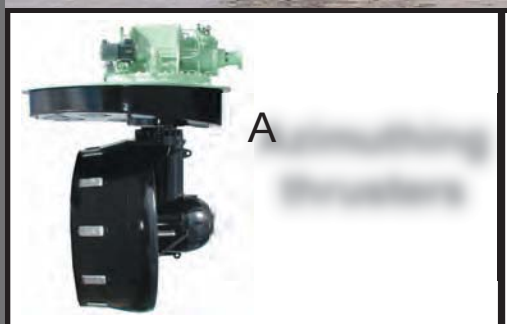

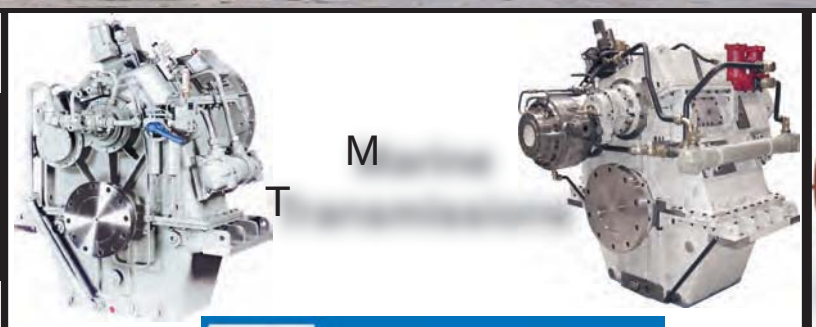

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