OFFSHOREMARINE

A newsletter of Keppel Offshore & Marine

November – December 2015

MICA (P) 137/12/2011

Multiple projects keep yards busy in 2016



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Keppel Shipyard achieved more than 500,000 manhours worked without lost-time incident on the refurbishment and upgrading of the FPSO Front Puffin.

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Company registration no. 199900642R

Keppel Offshore & Marine is a subsidiary of Keppel Corporation

Harnessing strengths and seizing opportunities

2016 will continue to be a challenging year for Keppel Offshore & Marine (Keppel O&M) but the Group has the strength to tide through and seize new opportunities. Mr Chow Yew Yuen, CEO of Keppel O&M provided insights on this through interviews with various media at the end of 2015, some of which are reproduced below.

Q: With an oversupply of rigs in the market, what is your expectation of contract cancellation and deferment possibilities?

Keppel Offshore & Marine has a \$9 billion net orderbook at the end of 2015, which provides visibility into 2020. This was carefully built up over the years and comprises mainly contracts from high-quality customers. While the deliveries of a few drilling rigs have been deferred, these contracts are still in our orderbook, and we have not received any request for cancellations. The strong orderbook will bolster us in the year ahead as we continue to streamline and strengthen ourselves to deal with the current market conditions.

Q: With oil prices expected to fall further, what is your outlook for the industry in 2016?

I expect the offshore drilling sector to remain challenging in the near term. We are preparing ourselves to meet the challenges by streamlining our processes, investing prudently and building new capabilities. We remain positive about the long term fundamentals of the offshore and marine industry, and expect oil price to eventually reach a sustainable equilibrium, driven by demand for energy from a rising middle class and increasing urbanisation in developing countries.

Q: Where are the opportunities for growth?

As a global industry leader, Keppel Offshore & Marine (Keppel O&M) is always on the lookout for new opportunities. Building on our experience in conversion and specialised shipbuilding, we are growing our suite of LNG solutions in tandem with the needs of the LNG market. Our focus on LNG solutions is also very much in line with the MPA's broader objective of establishing Singapore as a LNG bunkering port by 2020.

We are confident that the FLNGV conversion solution, which we have commercialised, will be attractive for the market and will contribute to Keppel O&M's overall business as it offers a cost-effective option for developing fields at remote locations where huge infrastructure investment is not economical.

Besides LNG solutions, we have acquired the LETOURNEAU™ rig designs and aftermarket business to broaden our suite of jackup rig design solutions and better support our customers through

LETOURNEAU's well-established aftermarket sales and services platform.

On top of this, we have developed our own series of liftboat designs that will be able to undertake the maintenance of most shallow water oil and gas fields and add value to the industry. An adjacent market to this is in the Plug & Abandonment (P&A) of subsea oil and gas wells where we are designing potential solutions after identifying a gap in this market.

Q: What is Keppel's biggest challenge ahead?

In response to the challenging market conditions, we are rightsizing our operations and resources. Keppel O&M has considerable flexibility in our workforce deployment with our contract workers, as well as overseas production yards. Even with our yards remaining busy in the next two years, we are trimming our overheads and making ourselves more efficient.

We will also continue to invest prudently in training, R&D and productivity improvements through the down cycle. This is the fourth cycle in the offshore and marine industry that I've witnessed and with each cycle, we have learnt valuable lessons and have emerged stronger than before. We have never allowed a crisis to go to waste and this time will be no different.

2015 in review

In 2015, Keppel Offshore & Marine continued to build on its core strengths and improve on its value propositions to customers.

Despite headwinds in the industry, the Group accomplished key project milestones and achieved numerous business accolades. OM newsletter takes a look at the year in review.

JANUARY

Keppel FELS delivered YUNUEN, a KFELS B Class jackup rig to Mexican national Oil Company, Petróleos Mexicanos (PEMEX), on time, with a perfect safety record and within budget.

Keppel Singmarine secured three contracts. These include a contract from New Orient Marine for a multi-purpose vessel, a contract from Seaways International to build a multi-task Anchor Handling Tug and a contract from Nakilat-Keppel Offshore & Marine (N-KOM) to provide technical services for the construction of a liftboat.

FEBRUARY

Keppel FELS delivered the fourth high-specification accommodation semisubmersible (semi) to Floatel International on time, on budget and with a perfect safety record.

Keppel FELS delivered the ultra-harsh jackup rig, Maersk Integrator, to Maersk Drilling thirty days ahead of schedule, on budget and with a perfect safety record.

Keppel Shipyard celebrated the sailaway of Floating Production Storage and Offloading (FPSO) vessel, Ningaloo Vision, which it refurbished for Apache Energy.

Keppel FELS delivered PV Drilling VI, a KFELS B Class jackup rig, to PV Drilling Overseas, on time, on budget and with a perfect safety record. It is the 100th jackup rig Keppel FELS has built since 1970.

Keppel Subic Shipyard delivered a Depletion Compression Platform, the first such platform to be fully constructed in the Philippines, to Shell Philippines Exploration BV on time and with an excellent safety record.

Keppel FELS delivered ENSCO 110, the seventh KFELS B Class Bigfoot jackup rig in Ensco's fleet and the latest generation of the series.

N-KOM reached its 100th project milestone for liquefied natural gas (LNG) carrier repairs.

MARCH

Keppel FELS delivered a KFELS B Class jackup rig, KUKULKAN, to PEMEX safely, on time and on budget.

Keppel Nantong Shipyard received an award for its occupational health and safety performance in 2014 from the Nantong City Safety Administration of Work Safety.

Keppel O&M won top awards at the 12th Annual Human Resources Management Awards in three categories: Best Leadership Development Award; Best Training,



Keppel Singmarine was contracted to build a multi-purpose vessel for Maritime Construction Services



PV Drilling VI is the 100th jackup rig to be delivered by Keppel FELS, a milestone that reaffirms the yard's position as the largest manufacturer of jackup rigs in the world

Learning and Development Award; and Best Graduate Development Award

APRIL

Keppel Offshore & Marine
Technology Centre (KOMtech)
was conferred the Outstanding
Maritime R&D and Technology
Award for its design of an Azimuth
Stern Drive (ASD) tug with a
65-tonne bollard pull capacity
which can run on both Liquefied

Natural Gas (LNG) and diesel fuel at the Singapore International Maritime Awards (IMA).

Caspian Shipyard Company (CSC) was a winner at the Azerbaijan safety and health competition organised by the Azerbaijan Trade Unions Confederation.

MAY

Keppel FELS held the world's first triple rig naming ceremony for

three KFELS B Class jackup rigs – CANTARELL I, CANTARELL II and CANTARELL III – built for Mexican company, Grupo R.

Asian Lift, a joint venture between Keppel Offshore & Marine and Smit Singapore, celebrated the naming of Asian Hercules III, the largest and most versatile sheerlegs crane of its kind in the world.

JUNE

BrasFELS shipyard in Brazil delivered the Floating Production Storage and Offloading (FPSO) vessel Cidade de Itaguai MV26 to MODEC and Toyo Offshore Production Systems Pte Ltd (MTOPS) ahead of schedule and with an excellent safety record.

JULY

Keppel O&M clinched 31 Workplace Safety and Health (WSH) Awards on 29 July 2015, the highest number of awards won by a single organisation in the year.

Keppel FELS secured a contract from Crystal Heights, a company specialised in the offshore oil and gas market, to build a high-specification liftboat.

Keppel Shipyard signed a contract with Golar Gandria N.V. to perform the conversion of a Moss type Liquefied Natural Gas (LNG) carrier, the GANDRIA, into a Golar Floating Liquefaction (GoFLNG) facility.



BrasFELS delivered FPSO Cidade de Itaguai (left) to MTOPS early

Keppel AmFELS yard in Brownsville, Texas, USA, received the American Equity Underwriters (AEU) Safety and Health Award for being the safest company in its industry for 2014.

AUGUST

Keppel Shipyard secured a FPSO conversion contract as well as three repair, upgrade and modification contracts. The FPSO conversion project is awarded by Armada Madura EPC Limited, while the repair, upgrade and



Celebrating the world's first triple rig naming are (first row from left to right) Mr Tong Chong Heong, Senior Advisor, Keppel O&M; Mr Chow Yew Yuen, CEO, Keppel O&M; Mr Loh Chin Hua, CEO, Keppel Corporation, and Chairman, Keppel O&M; Lady Sponsor Mrs Gabriela Garza; Mr Chan Chun Sing, Minister, Prime Minister's Office, and Secretary-General, National Trades Union Congress; Lady Sponsor Ms Karla Garza; Lady Sponsor Ms Mariella Garza; and Dr Lee Boon Yang, Chairman, Keppel Corporation

modification contracts are awarded by Totem Ocean Trailer Express Inc., Dolphin Drilling Limited and Saipem Offshore Norway AS.

Keppel Offshore & Marine entered into a Stock and Asset Purchase Agreement with Cameron International Corporation (Cameron), to acquire Cameron's offshore rigs business, which comprises the LETOURNEAU™ jackup rig designs, rig kit business, and aftermarket services.

SEPTEMBER

Keppel FELS delivered UMW Naga 8, a KFELS B Class jackup rig, to Malaysia's UMW Oil & Gas Corporation Berhad. It was completed 32 days ahead of schedule, on budget and with a perfect safety record.

Keppel Singmarine delivered three ice-class vessels on schedule and with a perfect safety record to Bumi Armada Offshore Holdings. The two supply vessels and one multi-purpose duty-rescue vessel were named Bumi Uray, Bumi Pokachi and Bumi Naryan-Mar respectively.

OCTOBER

Keppel FELS delivered
ARABDRILL 70, a KFELS B Class
jackup rig, to Arabian Drilling
Company (ADC). It was completed
three days ahead of schedule, on
budget and with a perfect safety
record. ARABDRILL 70 is the
fourth KFELS B Class jackup rig to
work for ADC.



Keppel O&M has the expertise to build rigs of the LETOURNEAU™ design, having previously completed 16 such rigs, including the COATZACOALCOS, a LETOURNEAU™ Super 116E design which was built by Keppel AmFELS in Brownsville, USA

Keppel Shipyard delivered the world's deepest FPSO vessel, Turritella, to SBM Offshore.

Keppel Shipyard was named Shipyard of the Year at the Lloyd's List Asia Awards for the ninth time in recognition of its consistent delivery of safe, high quality and prompt services. Nakilat-Keppel Offshore & Marine (N-KOM) received the Ship Repair Innovation Award at the Seatrade Maritime Awards Middle East, Indian Subcontinent & Africa 2015 for its achievement in successfully undertaking the world's first M-type Gas Injection (ME-GI) retrofit project, which involved modifying a Q-MAX vessel to run

on Liquefied Natural Gas as an alternative to marine diesel fuel.

DECEMBER

Keppel Shipyard secured two conversion contracts – one for a Liquefied Natural Gas (LNG) Floating Storage Unit vessel awarded by Armada Floating Gas Storage; the other contract is for a FPSO vessel awarded by Yinson Production (West Africa).

Keppel FELS Brasil's BrasFELS shipyard in Rio de Janeiro, Brazil, secured a FPSO integration contract awarded by MODEC Offshore Production Systems (Singapore).

Caspian Shipyard Company secured a barge enhancement contract awarded by BP Exploration (Shah Deniz).



The management and directors of Bumi Armada, Lukoil and Keppel O&M reaffirming their strong ties at the naming ceremony of Bumi Uray, Bumi Pokachi and Bumi Naryan-Mar



Celebrating the naming of FPSO Turritella are (first row from L-R) Mr Philippe Barril, COO, SBM Offshore; Mrs Maria Pena, Stones Business Opportunity Manager, Shell; Ms Goh Swee Chen, Chairperson, Shell Singapore; Mr Loh Chin Hua, Chairman, Keppel O&M and CEO, Keppel Corporation; and Mr Chow Yew Yuen, CEO, Keppel O&M

Keppel Shipyard delivers FPSO Front Puffin

Keppel Shipyard, has delivered the Floating Production Storage and Offloading FPSO vessel, Front Puffin, on 17 December 2015 to Rubicon Offshore and vessel operator Folawiyo AJE Services. The project was completed with more than 500,000 manhours worked without lost-time incident.

Front Puffin marks the third collaboration between Keppel Shipyard and Rubicon Offshore. Work on the vessel included refurbishment and upgrading. The safety achievement attests to the shipyard's hallmark ability in executing its projects safely as well as the strong partnership and rapport that Keppel Shipyard and Rubicon Offshore have developed over past projects.

Upon re-delivery, the FPSO will leave Keppel Shipyard for deployment in the Benin Basin of the AJE Field, 24km off the coast of Western Nigeria, where the FPSO will be deployed to support

Front Puffin is no stranger to Keppel Shipyard. The shipyard had carried conversion works on the FPSO from a shuttle tanker way back in 2007.



Keppel Shipyard achieved more than 500,000 manhours worked without lost-time incident on the refurbishment and upgrading of the FPSO Front Puffin



Management and project teams from Rubicon Offshore, Folawiyo AJE Services and Keppel Shipyard celebrating at the sailaway ceremony of the FPSO Front Puffin with their client and partners

N-KOM signs agreement with largest Greek ship owner



Nakilat-Keppel Offshore & Marine has signed an agreement with Angelicoussis Shipping Group to be its preferred shippard for ship repairs in the Middle Fast

Nakilat-Keppel Offshore & Marine (N-KOM), Keppel Offshore & Marine's shipyard in the Middle East, has signed a landmark agreement with the Angelicoussis Shipping Group (ASGL) to be the latter's preferred shipyard for ship repairs in the region.

The agreement applies to all vessels operated by the three ship management companies under ASGL, which owns the largest fleet in Greece at over 110 vessels.

N-KOM and ASGL have a longstanding relationship through Maran Gas Maritime, the gas shipping unit of ASGL, which sent its first Liquefied Natural Gas (LNG) carrier to N-KOM for servicing in 2011. That was also the same year that the shipyard started operations. Since then, N-KOM has gone on to service 13 LNG carriers and tankers for ASGL.

Mr Chandru Rajwani, CEO of N-KOM, said, "ASGL is an important partner who has been with the shipyard through its years of growth and expansion since inception. We are delighted to be able to bring our longstanding partnership to the next level with the signing of this fleet agreement, which proves that N-KOM is the premier choice in the region when it comes to repairs and maintenance. With state-of-the-

art facilities at our world-class shipyard in Ras Laffan, Doha, we will continue to provide quality ship repair services for ASGL's fleet of vessels."

Mr John Angelicoussis, CEO of ASGL, said, "We have been very satisfied with the high quality shown in the repair jobs executed by N-KOM for our vessels and are pleased to be furthering our partnership with them through yet another strategic agreement. We look forward to working with their experienced team of professionals in maintaining our fleet of vessels."

Keel laying for multipurpose vessel

Keppel Singmarine laid the keel for the multipurpose vessel that it is building for New Orient Marine on 3 December 2015. The vessel is being built to the proprietary design of Keppel O&M's ship design and development arm, Marine Technology Development, and will have capabilities such as Class 3 dynamic positioning and diving support functions. The vessel is scheduled for completion in mid-2017.

Mr Abu Bakar, MD of Keppel Singmarine, said, "We are excited to be working with our new customer New Orient Marine on its first multipurpose vessel. Leveraging our strong track record in building specialised vessels, we are confident of keeping ahead of our construction schedule and delivering the product to our customer's satisfaction."



Management and the project teams from New Orient Marine, Keppel Singmarine and appointed surveyors celebrated the keel-laying milestone of the multipurpose vessel project

Safety bonus on Fecon rigs

In recognition of Keppel FELS' excellent safety performance during the construction of its two KFELS B Class jackup rigs, Fecon International Corp (Fecon) awarded the yard a bonus cheque of US\$10,000 for each project on 25 November 2015.

Projects B371 and B372 both achieved safety milestones of one million safe manhours and two million safe manhours respectively.

The cost-effective and highperforming KFELS B Class jackup rig is able to operate in water depths up to 400 feet and drill to 30,000 feet deep. Customised to Fecon's requirements, the jackup rigs will each have a full 15,000 psi BOP system, 75-feet cantilever



Representative of Fecon owners, Mr Andrey Dobrov (fifth from left), presented Mr Chow Yew Yuen (fourth from left), CEO of Keppel Offshore & Marine and Mr Chris Ong (third from right), Deputy MD, Keppel FELS, as well as the project team with two bonus cheques of US\$10,000 each for the excellent safety performance on Projects B371 and B372

outreach and will be able to accommodate 150 crew.

Over the years, Keppel FELS has built its reputation as an offshore yard with excellent safety standards. During this year's Workplace Safety and Health (WSH) Awards, the yard bagged 18 awards under the Safety and Health Award Recognition for Projects (SHARP) category for its exemplary safety performance, as well as good safety and health management systems.

Execution excellence at Keppel FELS



Celebrating the strike steel ceremony of Project B375 are Mr Chris Ong (extreme left), Deputy MD, Keppel FELS and Mr Kenny Cai (second from left), Director, Crystal Heights together with the project team

As the choice solutions partner for the design, construction and repair of mobile offshore rigs, Keppel FELS continues to deliver on its promises to customers, working hand-in-glove with them and earning their trust through safe, on-time and on-budget execution.

MILESTONE FOR CRYSTAL HEIGHT'S LIFTBOAT

Keppel FELS and Crystal Heights celebrated the strike steel and keel laying ceremonies of Project B375, a self-elevating and self-propelled liftboat in December 2015. The ceremony was witnessed by the project team, as well as senior management from Keppel FELS.

Mr Kenny Cai, Director of Crystal Heights, shared, "Keppel's trusted brand name gives us the confidence to work together even in the current weak oil price environment. With a reputable shipyard with a proven track record, we are assured of safe, high quality and on-time deliveries."

The project team has been making steady progress since the contract on the liftboat was secured in July 2015. Designed by Keppel O&M's liftboat specialist, Bennett Offshore in collaboration with Keppel FELS, the liftboat is scheduled for delivery in 4Q 2017. It will have provisions enabling it to operate in China, the Middle East and the Gulf of Mexico.

Mr Wong Kok Seng, Managing Director of Keppel O&M (Offshore) and Keppel FELS, said, "Even as the market for drilling rigs remains depressed, Keppel has the versatility and capabilities to design and build other products that are in demand, such as mobile units for plug and abandonment, accommodation and maintenance."

Project B375 is the second liftboat based on Keppel's innovative

proprietary solution that the yard has been contracted to build.

STEADY PROGRESS ON TRANSOCEAN'S RIGS

On 20 November 2015, Keppel FELS held a keel laying ceremony for Project B366 and a strike steel ceremony for Project B368 for Transocean. The ceremony was witnessed by the project team, including Mr Doug Brown, Project Manager of Transocean, as well as senior management from Keppel Offshore & Marine and Keppel FELS.

Both jackup rigs are part of a series of five ordered by Transocean which are being built to Keppel's proprietary KFELS Super B Class design. Projects B366 and B368 are scheduled for delivery in 1Q 2019 and 1Q 2020 respectively.

Mr Shawn Yeo, Project Manager at Keppel FELS, shared, "Keppel FELS and Transocean have shared

a long-standing relationship spanning several significant projects, such as the three KFELS Super B Class jackup rigs that we delivered to Transocean in 2013. Drawing on Keppel FELS' vast experience and our tight partnership with Transocean, we are confident that we will

be able to successfully deliver these projects to their highest satisfaction."

Tailored to suit Transocean's requirements, the KFELS Super B Class rigs are designed to operate in 400 feet water depth and drill to 35,000 feet. With a two

million pound drilling system and a maximum combined cantilever load of 3,700 kips, the KFELS Super B Class is equipped with tremendous horsepower during drilling operations. In addition, the rig will be installed with



Project teams from Keppel FELS and Transocean marked the keel-laying ceremony of Project B366



Cutting steel to mark the start of the construction of Project B368, a KFELS Super B Class design jackup rig, are project teams from Keppel FELS and Transocean

offline stand building features in its drilling system package which allows drilling and the preparation of drill pipes to take place at the same time. The rig is capable of drilling at a 75 feet outreach, allowing for coverage of a larger well pattern.

LAYING FOUNDATIONS FOR **TS OFFSHORE**

Separately, on 26 October 2015, TS Offshore Limited's (TS Offshore) KFELS N Plus jackup rig B370 had a keel-laying ceremony at Keppel FELS Pioneer Yard 1. During the ceremony, TS Offshore

presented Keppel FELS with a bonus cheque of US\$10,000 dollars for achieving 2 million safe manhours without lost time incidents.

B370 is scheduled for delivery in 1Q 2017 and will be the first jackup built to Keppel's new proprietary KFELS N-Plus design.

With its leg measuring 678 feet or about 68 storeys tall, and a maximum combined drilling load of 3,860 kips, the KFELS N Plus is able to meet stringent operating requirements for the most

challenging wells. It can work at a maximum water depth of 500 feet, drill to depths of 35,000 feet, and is equipped with a 100 feet cantilever outreach.

Developed by Offshore Technology Development, Keppel's R&D arm, the robust KFELS N-Plus jackup is an enhancement of Keppel's proprietary KFELS N-Class design, three of which have been successfully operating in the North Sea.



For achieving 2 million safe manhours without lost time incident for Project B370, Mr Kenny Cai (second from left), Director, TS Offshore and Mr Tang Chaozhang (second from right), Vice-GM, TS Offshore, presented the Keppel FELS project team with a cheque for US\$10,000

Choice repair partner



Mr Mihai Dimancescu (sixth from left), Project Engineer, Diamond Offshore presented a plaque of appreciation to Mr Max Goh (fifth from left), GM (Operations), Keppel FELS for the project team's hard work and dedication on Ocean Quest

As an industry leader, Keppel FELS is not only the preferred solution for the construction of new-build rigs, it also well sought after for repair and upgrading projects.

PERFECT FINISH ON ENSCO 8504

On 30 December 2015, Keppel FELS' Flying Squad completed structural repair works on ENSCO 8504, an ultra-deepwater semisubmersible drilling rig. With the close partnership between Keppel FELS and Ensco, the repair work was completed within nine days.

Mr Dale Drader, Rig Asset
Manager, Ensco, said, "We
have worked with Keppel on
a number of key projects and
they have continually lived up
to their reputation as a trusted
and reputable shipyard. This was
a challenging job as the project
teams had to work under a tight
deadline with space constraints
but Keppel FELS responded
professionally to ensure a safe and
timely completion."

ENSCO 8504 is one of seven ENSCO 8500 Series® ultradeepwater semisubmersible drilling rigs that Keppel FELS has built exclusively for Ensco over the years.

The design includes a 35,000 nominal rated drilling depth, six ram BOP, two million pound hoisting capacity, 8,000 tons of variable deck load and an open layout well suited for subsea completion activities.

IMPECCABLE WORK ON DIAMOND'S SEMI

On 21 November 2015, Keppel FELS re-delivered the semisubmersible rig, Ocean Quest, to Diamond Offshore Services Company (Diamond Offshore) two weeks ahead of schedule and with a perfect safety record.

Keppel FELS was awarded the contract on 6 August 2015 and the scope of work included the installation of a steel helideck

to comply with requirements on helicopter landing areas, as well as two lifeboat platforms.

Mr Mihai Dimancescu, Project Engineer, Diamond Offshore, commended, "The Ocean Quest project was a total success. We were able to complete the repairs ahead of schedule with Keppel FELS' good project management. Our strong partnership also allowed for the project to be well executed and once again, we are impressed by the professionalism and *Can Do!* spirit of the Keppel FELS project team."

Earlier in 2009 and 2013, BrasFELS undertook repair and upgrading jobs for Ocean Quest. Some of the previous works included integrating a new owner-furnished living quarters weighing 240 metric tonnes.

Shell commendation on Turritella



Management teams from Shell, SBM Offshore and Keppel Shipyard celebrated the successful conversion of the FPSO Turritella with a perfect safety record

Keppel Shipyard was recently commended by Shell for having successfully converted the Floating Production Storage & Offloading (FPSO) vessel, Turritella, with a solid safety record of 13.1 million man-hours worked without any lost-time incidents.

Delivered to SBM Offshore on time, on budget and without a hitch, the FPSO set sail promptly for the US Gulf of Mexico in November for deployment in Shell's Stones field.

Throughout the execution phase, Keppel Shipyard's project team introduced several safety initiatives and worked closely with Shell and SBM Offshore around the complexities of FPSO Turritella's design and technology.

Mr Ian Silk, VP (Deepwater Projects), Shell International Exploration and Production Inc, commended the yard in a letter to Mr Chow Yew Yuen, CEO of Keppel Offshore & Marine. The letter is reproduced in full below.

From: < lan Silk >
To: < Chow Yew Yuen >

Subject: With Gratitude and Admiration

ΥY

I wanted to drop you a line to recognize Keppel's truly remarkable achievement this week in completing the Turritella FPSO conversion programme without a recordable HSE incident in your yard.

Across my 30 years in the industry this is the most impressive HSE outcome I have had the pleasure of observing firsthand. It isn't just the number of hours achieved without a recordable, it is the challenge of delivering this result given the nature of the work required to convert an oil tanker to FPSO service. This performance is testament to your personal commitment to HSE. that of your leadership and the professionalism of Keppel's staff.

With my gratitude and admiration in equal measure,

lan Silk

VP Deepwater Projects

Shell International Exploration & Production Inc



Keppel Shipyard successfully delivered Turritella, which is the world's deepest PFSO vessel, in October 2015

Safety journey at Keppel AmFELS

Keppel AmFELS' vigilance on its projects continues to bear fruit as it recorded another impressive safety milestone on the P209 project. The yard achieved 1.5 million man-hours with zero lost time incidents.

At a ceremony held on 19 November 2015, the customer presented the team with a plaque as well as jackets as tokens of appreciation to everyone working on the project.

Mr Simon Lee, President of Keppel AmFELS, said, "We are pleased to continue on this safety journey with our valued customer. It is a demonstration of the strong commitment to safety of the yard and our partners. I want to commend everyone involved in the project and the hard work and close cooperation between the teams in accomplishing this milestone. Our focus is to continuously reinforce safety practices in our day-to-day operations. We must not be complacent but maintain this rigour to ensure everyone, not just on this project, but in the yard, is safe."

On the P209 project, a safety committee comprising yard and customer representatives continuously evaluate and promote safety initiatives. This includes the promotion of safety campaigns, safety awareness programmes and ensures alignment and collaboration during the execution of the project.

Across the yard, Keppel AmFELS launched the End Safe 2015 and Start Safe 2016 campaign in December to encourage continued safety vigilance during the festive period. With the motto of "Safety is a journey; all accidents are preventable", employees pledged to ensure a safe working environment. Those with exemplary safety performances were recognised by the company.



Keppel AmFELS and their customers celebrate the strong teamwork in achieving another excellent safety achievement on the P209 project



Yard workers pledging their commitment to make the yard a safer place



Keppel AmFELS launched the End Safe 2015 and Start Safe 2016 campaign in December to encourage continued safety vigilance across the New Year

Innovative construction at Baku Shipyard

On 23 December 2015, Keppel Offshore & Marine's joint venture shipyard in Azerbaijan, Baku Shipyard, achieved one million safe man-hours without lost-time incident on the Subsea Construction Vessel (SCV), Khankendi, that it is building for BP Exploration (Shah Deniz) Ltd.

The project first struck steel on 15 August 2014 and leveraged the synergy of Keppel's global network of yards. The construction of the main hull strips of the SCV was carried out by Keppel Singmarine in Singapore while the bow block including the fabrication of the superstructure and deckhouse was constructed in Baku Shipyard.

The hull strips were then transported from Singapore to Baku to be integrated. The integration of the SCV featured a new integration methodology by Baku Shipyard – the dry mating of the hull strips onshore. It was the first time this innovative process was conducted in the Caspian region.

Commenting on the safety milestone, Mr Fuad Madatov, Project manager said, "This achievement demonstrates the strong operational excellence and commitment to safety of Baku Shipyard. It is also the culmination of the joint efforts of the project teams at both Keppel Singmarine

and Baku shipyard in ensuring the safety and well-being of every worker involved in this project." Scheduled to be delivered by end of April 2017, the SCV will be deployed for the Stage 2 development of the Shah Deniz field that lies some 70 kilometers offshore in the Azerbaijan sector of the Caspian Sea.

Designed by Marine Technology Development, the ship design and development arm of Keppel Offshore & Marine, the SCV will meet the subsea construction requirement at the Shah Deniz 2 project to install subsea structures over 11 years between 2017 and 2027.



The project team of the Subsea Construction Vessel Khankendi from Baku Shipyard celebrate the achievement of one million safe man-hours without lost-time incident

Launch of Safety Training Centre at Keppel Verolme

To foster a culture of safety, Keppel Verolme has introduced its safety theme for 2016 - 'Play Your Part'. It emphasises the responsibility of every individual for a safer work environment at the yard. Staff are expected to abide by the five C's of Commitment, Competence, Cooperation, Control and Communication, to guide their everyday operations.

29 appointed safety ambassadors are trained to guide workers to work safely and develop practices that improve safety. In addition to the safety theme, Keppel Verolme also set up a Safety Training Centre to supplement all stakeholders with the right skillsets.

Managing Director of Keppel Verolme, Mr Harold Linssen said, "It is everybody's top priority to 'Play Your Part' to further improve the environment at the yard. We will train all our stakeholders on promoting the five C's. At the same time, we foster a culture of accountability so that we help lookout for each other's safety. To help our stakeholders, the Safety Training Centre will equip workers with the right skills and capabilities to ensure a safer work environment."

The Keppel Verolme Safety
Training Centre was officially
opened on 10 December 2015.
It was set up to simulate typical
safety-related issues that could
happen in the yard. Specifically,
it included training on the seven



The Safety Training Center, in line with Keppel Verolme's theme of 'Play your part' aims to further foster a culture of safety and responsibility among all employees



Two safety ambassadors from Keppel Verolme receiving a cheque for their exemplary performance. (From L – R): Mr Harold Linssen, MD, Danny Peters, Steelworker, Hein Mangroe, Health, Safety & Environment Manager, Mark Heuders, Project Manager and Bert van Schijndel, GM of Human Resource and Health, Safety, Environment and Quality of Keppel Verolme

High Impact Risk Activities (HIRA) of Hot Work, Working in a Confined Space, Working at Height, Electrical Work, Lifting Safety, Risk Assessment/ Permit to Work and Operating of Heavy Vehicles.

Seven separate booths within the

Training Center have been set up to reflect the HIRA activities. Through this, employees as well as vendors and subcontractors are trained to detect and respond effectively to these potential risks as they arise. The centre can train a maximum of 10-15 people at a time.



At the Keppel Group Safety Convention 2015, the Group's stakeholders, including employees, partners, contractors and subcontractors, reaffirmed their commitment to upholding the highest standards of workplace safety and health

Doing our part for safety

Keppel's stakeholders, including employees, partners, contractors and subcontractors, reaffirmed their commitment to upholding the Group's core value of safety at the annual Keppel Group Safety Convention.

"When each of us decides to take small steps to improve the safety of our workplace and to promote better well-being for all, we can build a better and safer working environment for everyone."

This was one of the key messages that Mr Loh Chin Hua, CEO of Keppel Corporation and Chairman of Keppel Offshore & Marine, emphasised during the 9th Keppel Group Safety Convention held on 23 November 2015 at Kallang Theatre.

Themed "Our Safety & Well-being:

Let's Do Our Part", the convention brought nearly 900 Keppelites, partners, contractors and subcontractors together to reaffirm their commitment to safety.

It was hosted by Keppel Shipyard and Keppel Singmarine.

Stressing that a robust safety framework does not happen by chance, Mr Loh highlighted the importance of teamwork and partnership amongst stakeholders.

Besides recognising business units that have rolled out various

safety initiatives and programmes over the course of 2015, Mr Loh applauded individuals who took the lead to innovate solutions that improve work processes and enhance safety in their daily jobs. This year, a total of 48 Safety Innovation Teams submitted safety innovation projects, an increase from the 43 entries last year.

Gracing the event as the Guest-of-Honour was Mdm Halimah Yacob, Speaker of Parliament of Singapore. Calling Keppel a "global industry leader and an avid workplace safety



Understanding the innovative safety solutions and celebrating the successes of the winning Safety Innovation Teams are (from L – R): Mr Tan Ek Kia, Chairman of Keppel Corporation's Board Safety Committee, Mr Loh Chin Hua, CEO of Keppel Corporation, Mr RK Jaggi, Group Health, Safety & Environment GM of Keppel Corporation, and Dr Lee Boon Yang, Chairman of Keppel Corporation

proponent", Mdm Halimah noted that Keppel sets the gold standard for local companies looking to make their mark not just in Singapore but overseas as well.

Mdm Halimah also urged the company to continue rolling out programmes to encourage all employees to lead healthy lifestyles, and added that Keppel Shipyard's provision of well-being centres, which are equipped with facilities such as a pharmacy, counselling rooms and designated rest areas, is a positive step in this direction.

A highly anticipated component of this year's convention was the inaugural 'Dialogue with CEOs', where members of the audience posed safety-related questions to their respective business unit heads.

The 20-minute dialogue session saw senior management, including Mr Loh Chin Hua; Mr Chow Yew Yuen, CEO of Keppel Offshore & Marine; Mr Ang Wee Gee, CEO of Keppel Land, Dr Ong Tiong Guan, CEO of Keppel Infrastructure, and Mr Thomas Pang, CEO of Keppel Telecommunications & Transportations, candidly share their views on how Keppel can improve its frameworks and practices to reach its goal of a zero fatality workplace.

This year's convention also recognised winners of two inaugural contests, namely the Keppel Group Safety Photography Competition, a platform that encourages Keppelites to capture safe practices at their workplace, as well as the Keppel Group Safety Awards, a competition

that recognises Keppelites who have gone the extra mile to create and maintain a safe and healthy workplace.

The coveted Chairman Safety Challenge Trophy was awarded to Keppel Infrastructure for its strong safety record and innovative safety initiatives.

During his closing remarks,
Mr Tan Ek Kia, Chairman of
Keppel Corporation's Board
Safety Committee, emphasised
that safety is both an individual
and a collective responsibility and
urged award winners to continue
inspiring others. He said, "Your
achievement this afternoon is
another important step towards
our vision for every Keppelite
to go home safely at the end of
each day."

Keppel Group Safety Award Winners

Keppel Safe Worker Award

Not only does Puligundla share his personal safety experience with his team, he also ensures that they take these lessons to heart. He is vocal about stopping dangerous behaviour at work and takes time to explain to those around him why their acts are unsafe. Thanks to his pro-safety mindset, Puligundla has maintained a perfect safety record in his 7.5 years with Keppel FELS.



During her daily toolbox briefings, Lourdes motivates her staff to work safely and encourages them to look out for the wellbeing of their fellow colleagues. Her outstanding performance in conducting Take 5 briefings has been recognised on many occasions, earning her the title of "the Best in Take 5".

Keppel Safe Executive Award

Jason is known as the man who is always looking out for the safety of others at his workplace. Besides leading the Alpine Safety Committee team as Chairman, he goes beyond his operational duties to care for his colleagues. During the haze period, Jason went around the yard to distribute masks and bottled water to his colleagues.



Puligundla Suresh. Piping Chargehand, Keppel FELS – Winner of Keppel Safe Worker Award



Lourdes Redondo, Shipwelder Supervisor, Keppel Subic Shipyard -Winner of Keppel Safe Supervisor Award



Jason Tan, Operations Manager, AlpineEngineering Services - Winner of KeppelSafe **Executive Award**

2015 SAFETY INNOVATION AWARD WINNERS

Of the 48 Safety Innovation Teams that submitted their safety innovation projects this year, 24 project teams from Keppel Offshore & Marine bagged awards for their innovative solutions to improve safety.

PROJECT NAME	BUSINESS UNIT	AWARD
D' Winch	Keppel FELS	Gold
Mechanical-aided Release Shackle	Keppel FELS	Gold
Modular Pipe Hanger	Keppel FELS	Gold
Switchboard Shifter	Keppel FELS	Gold
Piston lifting clamp testing device	Keppel Shipyard	Gold
Planks Cutting Platform	Keppel Shipyard	Gold
Safety Enhancement of T-Bar Handling	Keppel Shipyard	Gold
The Real PTLT (Piston Tool Load Test)	Keppel Shipyard	Gold
Securing Station (T-Bar Fit Up)	Keppel Singmarine	Gold
Diverter Housing Transporter	Keppel FELS	Silver
Panel Anchoring Jig	Keppel FELS	Silver
Process Improvement in Hull Shop	Keppel Shipyard	Silver
Safety Enhancement of T-Bar Handling	Keppel Shipyard	Silver
Steel Profile Aligner	Keppel Shipyard	Silver
Mighty Hammer Arrestor	Keppel Singmarine	Silver
Safe and Secure Magnetic Arm (SaSMA)	Keppel Singmarine	Silver
Orientator	Keppel FELS	Bronze
Enhancement of LQ Ventilation System	Keppel FELS	Bronze
Cartridge Holding System for	Keppel Shipyard	Bronze
Pipe Supports		
Flange Aligner	Keppel Shipyard	Bronze
Magnetic Driller Jig	Keppel Shipyard	Bronze
Safe Alignment Tool (SAT)	Keppel Singmarine	Bronze
Smart Power Arm	Keppel Singmarine	Bronze
Grinding Chip Deflector	Keppel Singmarine	Bronze

Expanding safety roadmap

To discuss insights and ideas on improving Keppel's safety performance, over 60 members of senior management across Keppel's global operations gathered for a closed-door session at Keppel Leadership Institute on the morning of 23 November 2015, before the annual Keppel Group Safety Convention.

Participating in the discussion were Keppel Corporation Chairman Dr Lee Boon Yang, Keppel Corporation CEO Mr Loh Chin Hua, Chairman of Keppel Corporation's Board Safety Committee Mr Tan Ek Kia, Keppel Corporation BSC member Mr Tan Puay Chiang and Mr Chow Yew Yuen, CEO of Keppel Offshore & Marine.

Among the topics discussed were empowering supervisors and workers to pro-actively instil safe work habits, strengthening risk management and controls on high-risk activities and building a more engaged workforce.

Useful actions and solutions generated will be converted into a roadmap for the next phase of Keppel's safety journey.



Over 60 members of senior management across Keppel's local and overseas business units gathered for a robust discussion on how to improve safety standards across the Company's global operations

Ideas from around the world

To continually build a robust safety culture at Keppel's plants and worksites around the world, an inaugural Global Health, Safety and Environment (HSE) Workshop was organised for HSE officers from across the Group on 24 November 2015.

The day-long workshop saw over 50 Keppelites from around the world gathering together to share safety strategies and best practices. Participants also brainstormed on how existing systems and practices can be improved on.

Mr R K Jaggi, GM, Group HSE, Keppel Corporation, shared, "This workshop is an important step in our safety journey as it enables us to readily share safety programmes and practices that are implemented across the Group so that we remain relevant in a constantly evolving safety environment."



The inaugural Global HSE Workshop brought together HSE officers around the Group. Joining the participants after the workshop for dinner were Keppel's senior management, including Mr Chow Yew Yuen (first row, fifth from left), CEO of Keppel Offshore & Marine

Sharing insights at maritime conference

The World Maritime Technology Conference, held from 3 to 7 November 2015 in Rhode Island, USA, brings together engineering professionals and senior industry executives to address innovation

Mr Chow Yew Yuen (second from right), CEO of Keppel Offshore & Marine was the keynote speaker of the Opening Plenary session

and technical challenges.

The conference was held in conjunction with the Society of Naval Architects and Marine Engineers (SNAME) Maritime Convention and attended by nearly 1,200 delegates.

As the keynote speaker of the Opening Plenary session, Mr Chow Yew Yuen, CEO of Keppel Offshore & Marine, presented on how the company has leveraged innovation and technology to develop solutions for customers, improve efficiencies in its production

process and teamed up with institutes to develop products for the future.

The theme of the conference was "Engineering innovation serving society" and how this informs the discussions of participating professional societies around the globe. The conference was organised SNAME, an internationally recognised nonprofit, professional society of individual members serving the maritime and offshore industries and their suppliers.

Drilling down to fundamentals

Addressing a global fraternity of oil and gas veterans, drilling contractors, rig site operators and service providers as keynote presenter, Mr Chris Ong, Deputy MD of Keppel FELS, spoke of the challenges as well as opportunities in the offshore industry at the 75th anniversary conference of the International Association of Drilling Contractors (IADC) held in Singapore in November 2015.

Despite the low oil price environment, Mr Ong outlined opportunities for companies to streamline their operations, grow their capabilities as well as enter into adjacent markets. He also elaborated on the need to

leverage technology and invest in people while improving on safety, citing examples from Keppel FELS' experience.

At a separate session, Mr Murthy Pasumarthy, Design Manager at Keppel's Deepwater Technology Group presented on a new-generation revolutionary Semisubmersible Drilling Tender (SSDT™ 5000NG) designed to operate in harsh environments.

The conference, of which Keppel FELS was a gold sponsor, focused on Asia Pacific's regional critical issues and sought to address the looming challenges in the global oil and gas industry. It serves



Mr Chris Ong, Deputy MD of Keppel FELS, delivered the keynote presentation at the IADC Critical Issues Asia Pacific conference

as a platform for professionals in drilling and completions to network, forge business relationships and advance their technical skills.

Teaching innovation the Harvard way



Professor Stefan Thomke (standing), a member of the Keppel Technology Advisory Panel, shared on innovation management with about 70 Keppel O&M employees including senior management during the two-day workshop

Keppel Offshore & Marine (Keppel O&M) continuously engages forerunners in the fields of

business and academia to keep up to date with the latest industry developments and innovation.

From 7 to 8 December 2015, Professor Stefan Thomke, a member of the Keppel Technology Advisory Panel, conducted a twoday workshop at Keppel O&M on the dynamics and processes of innovation, and helped the teams develop creative ideas for reusing materials at the shipyards.

Professor Thomke, who is the William Barclay Harding Professor of Business Administration at Harvard Business School,

has had extensive experience working with international firms on product, process, and technology development, as well as organisational change and strategy.

His sharing centred on three main topics, namely innovation systems, leadership and sustainable growth. Apart from the presentations, an exercise was also conducted during which participants, including management such as Mr Chow Yew Yuen, CEO of Keppel O&M, brainstormed action plans to help bring innovative ideas to fruition.

Showcasing solutions

From 9 to 12 December 2015, Keppel Offshore & Marine's shipyards in the Middle East, Nakilat-Keppel Offshore & Marine (N-KOM) and Arab Heavy Industries (AHI) jointly featured their solutions at the Abu Dhabi International Petroleum Exhibition & Conference 2015 held in the United Arab Emirates.

The annual event is a global oil and gas convention that brings together international sector participants to network and exchange views on market and technology trends of the industry.

At the exhibition, N-KOM showcased the first liftboat that it constructed for Gulf Drilling International. AHI, which recently

expanded its suite of services to include offshore fabrication, also highlighted its latest offshore project, a self-installed platform which will be deployed as a maritime navigation aid in Kuwait.

Apart from their offshore capabilities, N-KOM and AHI also

showcased their ship repair and shipbuilding track record and projects. N-KOM, in particular, is one of the leading shipyards servicing gas carriers in the Middle East, having singlehandedly completed more than a hundred repair jobs on gas carriers in the region.



Nakilat-Keppel Offshore & Marine and Arab Heavy Industries jointly showcased their solutions and services at the Abu Dhabi International Petroleum Exhibition & Conference 2015

Global exchange

With its expertise in a variety of areas, Keppel Offshore & Marine (Keppel O&M) frequently hosts visitors from different industries and countries to cross share insights and explore potential collaborations.



Exploring opportunities for cooperation between Iceland and Keppel are (from L-R): President of Iceland, H.E. Ólafur Ragnar Grímsson; First Lady, Mdm Dorrit Moussaieff; Mr Abu Bakar, MD, Keppel Singmarine; Mr Chan Hon Chew, CFO, Keppel Corporation



A Temasek delegation led by its President Mr Lee Theng Kiat (second row, fifth from right) and Board member Mr Cheng Wai Keung (second row, seventh from right) learnt about the successful strategies of Keppel during a visit to Keppel O&M

ARCTIC PROSPECTS

To understand more about Keppel Offshore & Marine's (Keppel O&M) expertise in arctic technology, the President of Iceland, H.E. Ólafur Ragnar Grímsson, and First Lady Mdm Dorrit Moussaieff led a delegation of government officials and businessmen to visit Keppel O&M on 13 November 2015.

President Grímsson was on a state visit to Singapore where he also gave the keynote speech at Singapore's first Arctic Circle Forum. Accompanying the President was Mr Sam Tan, Singapore's Minister of State, Prime Minister's Office and Ministry of Manpower.

Hosted by Mr Chan Hon Chew, CFO of Keppel Corporation and Mr Abu Bakar, MD of Keppel Singmarine, the Icelandic delegation toured

the yard and learnt about the numerous ice-breaker and ice-class vessels that Keppel Singmarine has built for the Arctic region.

There was keen interest from the business delegates on the Keppel-designed ice-class vessels and possible future engineering collaborations with Keppel. The President also invited Keppel to present at the next annual Arctic Circle assembly in Iceland. Besides having built 10 ice-class vessels, Keppel is undertaking research and development on Arctic drilling rigs.

INVESTOR INSIGHTS

As part of its annual global staff conference, investment firm Temasek Holdings (Temasek) visits reputable companies to learn about their strategies for success. On 3 November 2015, Keppel hosted a visit by a delegation of 30 Temasek executives, led by

its President Mr Lee Theng Kiat and Board Member Mr Cheng Wai Keung, to Keppel Offshore & Marine (Keppel O&M).

Focusing on the theme of 'positive disruptions', Mr Chan Hon Chew, CFO of Keppel Corporation, and Mr Wong Kok Seng, MD (Offshore) of Keppel O&M and Keppel FELS, shared on Keppel's business strategies and technology foresight.

Mr Wong and Mr Chan spoke on Keppel's strong backlog of orders and its long-term strategy of strengthening core capabilities, seizing opportunities, targeting new markets, leveraging innovation and technology to add value, and improving efficiencies, amidst the low oil price environment.

Spirit of innovation

18 December 2015 marked the completion of latest run of BrasFELS' annual INOVE competition.

The competition, which is organised by BrasFELS' Quality, Health, Safety and Environment Management (QHSE), encourages

employees at all levels to conceive solutions that would raise productivity and reduce costs while ensuring safety, quality and care for the environment.

Taking first place was a team comprising members of the Painting and Maintenance

sections. Their project looked into the treatment of hydroblasting effluents.

For Romeia Sartori, Assistant
Manager in the Painting section
and the leader of the winning
team, said, "Our project enabled
the shipyard to treat all effluents
from water-jetting activities.
Through this project, we were able
to achieve significant cost savings.
Many hours were spent developing
this solution, bench testing, pilot
testing, designing and installing
the treatment plant, and training
those involved in the monitoring
process."



Winning teams of the BrasFELS annual innovation competition INOVE 2015

Safe and sound

From 3 to 6 November 2015, BrasFELS held its 14th Internal Week of Accident Prevention (SIPAT, in the Portuguese acronym) to raise safety awareness and emphasise best practices among its employees. During SIPAT, BrasFELS' Health, Safety and Environmental (HSE) team launched the theme of "Risk Perception" as the focus for safety initiatives in the year ahead.

The highlight of the week was a "Safety for Hands" song competition, in which employees showed off their musical talent by writing and performing original compositions.

Five individual and five group finalists performed before

a judging panel of BrasFELS management, HSE representatives, members of the Internal Committee of Accidents Prevention (CIPA), an Angra City Choir representative, and Odebrecht and Petrobras representatives.

Topping the individual category was Genário dos Santos from the Outfitting department while Adilson Natalicio, Valdinei da Silva, Wesley Alves and Ivanildo Morais, from the HVAC/Architecture teams, won the group category.



The five finalists for the Individual Category of BrasFELS' Song Competition (in brown and blue) and members of the Judging Committee (from L-R in white and orange) Mr Luiz Caetano, Director (Operations); Mr Marlin Khiew, VP (Operations); Mr Roberto Nascimento, VP of CIPA; Mr Marcus Santos, HSE Manager; Mrs Cristina Pinto, Project Director; Mr Emerson Penteado, President of CIPA; Mr Jair Costa, IEREPLII Manager, Petrobras, and Mr Luiz Britto, Project Manager, Odebrecht

Robust crisis response plans

When disaster strikes, having robust risk management and business continuity plans in place could literally be a matter of life and death. In conducting drills and updating their business continuity plans regularly, Keppel Offshore & Marine (Keppel O&M) seeks to ensure that they are ready to manage challenges and recover operations in times of crisis.

During the month of November, Keppel O&M's Security Department conducted tabletop exercises and simulations at Keppel FELS, Keppel Shipyard and Keppel Singmarine to help equip our yards for a scenario in which acts of terrorism strike.

The exercises were designed to test the efficacy of response, coordination and communications across departments from marketing to operations. Simulated scenarios included an unauthorised

entry into the yard by sea at night, where a worker was injured and the yard's infrastructure damaged.

The exercises also involved the Singapore Police Force (SPF) and Singapore Civil Defence Force (SCDF) which shared their response plans as well as useful insights into conducting a search and coordinating fire-fighting efforts on location. Takeaways from these sessions were used to further refine the yards' business continuity management plans.

Mr Abu Bakar, MD of Keppel Singmarine, who participated in the tabletop exercise in Keppel Singmarine, said, "Over the years, we have continuously reviewed and updated business continuity management plans to ensure that our operations can respond quickly to a broad spectrum of unforeseen external events. I am happy to

see that the tabletop exercise has met its goal of enhancing the confidence and knowledge of our people in handling a terrorist attack, and I would like to thank the management and personnel from SPF and SCDF for their support."

Mr Desmond Chua, Deputy
Superintendent of Police, said,
"Multi-agency tabletop exercises
such as these provide an excellent
platform for the Home Team to
work closely with the private
sector to coordinate response
plans for emergencies or terrorist
acts in a shipyard setting. We
applaud Keppel's continual efforts
in building up its operational
resilience and congratulate all the
participants on a fruitful exercise."



The tabletop exercise held at Keppel Singmarine on 12 November 2015 allows the shipyard to be better equipped to handle a terrorist attack scenario

Constant cross-learning

Set amidst the picturesque coastline of Angra dos Reis, Keppel FELS Brasil's BrasFELS shipyard is a dynamic workplace that Lucas Cassiano da Costa, Warehouse Supervisor, describes as a melting pot of ideas and cultures from all over Brazil and the world.

"I have gained many ideas and inspiration from my colleagues at the shipyard. Through interacting with people of many different background and experiences, I have broadened my perspective of the industry and the world," Lucas shared.

Lucas joined BrasFELS in 2009 as a Trainee Engineer after graduating in Production Engineering from the State University of Maringá (Universidade Estadual de Maringá).

During the first few months of the two-year Trainee Engineer programme, Lucas was rotated through a variety of departments and sections such as Marine Operation, Toolhouse, Logistics and Piping Shop.

Lucas joined the Warehouse department in August 2009. Today, he reports to Marco Felix, the department's Senior Manager.

Lucas said, "I have had the privilege of working with many managers, supervisors and senior colleagues at BrasFELS who are very willing to share their knowledge. Best of all, they are open to us leveraging on their experiences to implement



A warehouse supervisor and alumni of the Trainee Engineer programme at BrasFELS, Lucas Cassiano da Costa (extreme right, pictured here with BrasFELS colleagues) enjoys opportunities both in Singapore and Brazil to enhance his technical expertise and gain industry exposure through events such as OTC Brasil 2015

improvements. Together, we continue to enhance our processes to bring BrasFELS to new heights."

Harnessing the synergy between Keppel's operations across the globe, Lucas has benefitted from training initiatives both in Brazil and Singapore. Besides the Emerging Leaders programme held in Singapore earlier this year, Lucas has attended a two-week initiative coordinated by BrasFELS and Keppel FELS to enhance the capabilities of their people.

"I am grateful to be selected for these programmes. Not only did I gain a lot of practical knowledge that helped me to improve my work performance, I made new friends in the form of colleagues from Singapore, China, the US, Philippines and Qatar. With these new friendships, I feel a greater bond to the Keppel family."

During his time in Singapore, Lucas spent time at Keppel Offshore &

Marine's (Keppel O&M) shipyards, particularly Keppel FELS.

"At Keppel FELS, I observed many good practices, such as how the shipyard's storage of materials is well-organised and connected to ensure efficient operations. I have been working with my colleagues to implement some of these practices in BrasFELS, where applicable."

Apart from its regular training and development programmes, BrasFELS encourages its young talents to participate in industry events for learning and exposure.

In October 2015, Lucas was part of the team that hosted visitors to the Keppel O&M exhibition booth at the Offshore Technology Conference (OTC) Brasil in Rio de Janeiro. Sharing that he enjoyed the experience, Lucas said, "I am proud to share on our contributions to the industry and community."

Steadfast loyalty



Senior management from Keppel O&M celebrated the achievements of over 420 long-serving Keppelites during the Long Service Award Ceremony on 10 December 2015

At Keppel Offshore & Marine's Appreciation Lunch on 28 November 2015, 92 employees were lauded for their loyal service to Keppel, with each Keppelite serving an average of 32 years.

During his Opening Speech,
Mr Loh Chin Hua, Chairman of
Keppel O&M said, "All 92 of our
long-serving employees have
played a significant role in our
company's transformation. From
constructing Singapore's first
jackup and semisubmersible rig
to converting some of the first
FPSOs in the world, you charted
new terrains and enabled the
company to grow from strength to
strength."

Amongst the awardees was Mr Louis Chow, ED (Commercial), Keppel Shipyard who dedicated thirty-three years of service to the company, during which he held key positions in Keppel Shipyard including Yard Manager from 1996 to 2002. He shared, "Over the years, I've had the opportunity

to take on different roles which brought me to different places, from London to United Arab Emirates. I also count myself privileged to be working alongside a dedicated bunch of colleagues who give their very best to the company."

Separately, over 420 Keppelites from Keppel Shipyard and Keppel Singmarine were honoured for their unwavering commitment and dedication to the company during a Long Service Award Ceremony on 10 December 2015. Each had served for an average of 15 years.

Of these individuals, 49 have been with Keppel for 40 years, 28 have served 35 years and 4 have worked for 30 years. Another 2 have served 25 years, 27 have been with the company for two decades and another 312 have been with Keppel for a decade.

Mr Chow Yew Yuen, CEO of Keppel O&M attributed Keppel's continued success to the strong commitment and dedication of Keppelites. Reassuring Keppelites, Mr Chow added, "While the current low price environment poses significant challenges for us, we have the resources, the people and the resilience to overcome it. We must take this time to seize opportunities to grow our business, our skillsets and improve processes. Only by doing so can we continue executing our projects well to ensure safe, on-time and on-budget deliveries to our customers."

Mr Poon Tai Lum, General Manager (Operations), Keppel Singmarine who received a Long Service Award for his 40 years with the company, shared, "There has never been a dull moment with Keppel. Every stage of my career presented itself with exciting opportunities, as well as different challenges and it has been a rewarding journey."

Sharpening expertise

To deepen the engineering and technical expertise of its people, Keppel Offshore & Marine (Keppel O&M) has partnered with Singapore University of Technology & Design (SUTD) to develop the Keppel O&M Technology and Engineering Development programme.

Fifty-one participants from across Keppel O&M's global operations are participating in the first run of the eight-month programme, which is held in three phases from November 2015 to August 2016.

During the first phase from 17 to 24 November 2015, participants gathered at SUTD's Changi campus to learn from industry leaders, researchers and academics from renowned institutions such as Massachusetts Institute of Technology and University of Cambridge.

Speaking at the launch, Mr Chow Yew Yuen, CEO of Keppel O&M, said, "We want to empower our people to be stewards of innovation and leaders with foresight to solve complex problems and create lasting value through engineering and cutting edge technology."



The Keppel Offshore & Marine Technology and Engineering Development Programme provides an opportunity for Keppelites from Keppel O&M's global operations to deepen their skills and collaborate with each other

Education outreach

In October 2015, Keppel's Shipyard in the Netherlands, Keppel Verolme, participated in a three-day event to raise awareness among local students about the nature of Keppel Verolme's work



Students of schools in Rotterdam trying their hand at 'building' a mini cruise vessel at Keppel Verolme's Tech2Do booth

and about the marine industry at large.

Called Tech2Do, the event saw some 1,100 student visitors from high schools across the Rotterdam-Botlek region and involved a wide range of activities for the students to participate in. It had been jointly organised by the municipalities of Rotterdam and was Keppel Verolme's second time participating.

At Keppel Verolme's booth, handson activities, like building paper models of jackup rigs or cruise vessels were very popular with the students.

Ms Maureen Prins, Human Resource officer at Keppel Verolme, who had been supervising the students shared, "Tech2Do, with its interactive activities serves as a good platform for the young to learn about the offshore and marine industry. As an important industry in Rotterdam and a major employer here, exposing students to the workings of the industry at a young age will help spur their interest and grow the future talent pool."

Nurturing talent, celebrating success!







After months of intense competition involving some 1,200 athletes, Keppel Games 2015 came to an adrenaline-filled close with a final day of events at Ngee Ann Polytechnic on 22 November 2015.

The three teams were on their toes throughout the events as the points remained incredibly close until the final Telematch segment where Atlantic eventually emerged triumphant from a deficit of 265 points, taking home the Grand Finale Challenge Trophy and Overall Challenge Trophy.

THE LONG RUN

Long distance runners on all three teams were put to the test with the return to Ngee Ann Polytechnic as the finale venue. Runners from the Men's Open category dug in for the long run through a hilly 6.7km course, up from last year's 3.7km, while female runners and veterans had to contend with a shorter. but faster-paced course of 3km. Eventually, Team Atlantic went the distance and emerged victorious.

SPLASHING SUCCESS

The waters of the aquatic centre

did little to cool the red hot rivalry between rivals Atlantic and Caspian for the swimming challenge. In most of the events, the difference between first and second places came down to a hair's margin. Crowd favourite Jeremy Soh from Keppel Shipyard who set the games record last year ceded his title to newcomer and fellow Atlantic teammate Gareth Goh, who wrested victory by a mere 0.37 seconds.

FINAL BURST

Midway through the competition,









overcast skies threatened to dampen the festivities. Fortunately, a few raindrops did little to stop determined Keppelites from racing to the finish lines as the athletes competed in the track segment.

The fight for the track title emerged as a tie with Teams Atlantic and Caspian on equal footing at the end of the events. The highlight of the track events was dark hose Team Pacific, which shone with a surprise comeback win in the Men's 4 X 400m Relay.

SCORE BOARD	

Challenge Trophies/ Events Won

1269.5 Team Atlantic

Grand finale Dragon boat Sepak takraw Cyber games Netball 9-ball pool International chess

Overall challenge

1250 Team Caspian

Soccer Volleyball Basketball Badminton Darts Tennis Table tennis Golf Flag design 620.5

Pacific

Bowling

STRONGER AS ONE

Teams worked together through the various stations of the telematch. The teams competed in a spread of events from tug-of-war to team rope skipping, showing strength in numbers, as Team Atlantic took home the gold.

Ushering in the New Year

As 2015 drew to a close, the different business units of Keppel Offshore and Marine (KOM) held celebrations in their respective yards to bask in the festive cheer of welcoming the New Year.

Despite a challenging 2015, they

reminisced on the milestones of the past year, their achievements and looked forward to a better 2016.

At Keppel FELS, Keppel Shipyard and Keppel Singmarine, employees, management,

customers and partners bonded and interacted with one another in a casual environment filled with festive cheer, live music, games, performances by employees and delicious food.

At Keppel Singmarine, an MD's







(Top left) From L-R Mr Tong Chong Heong, Chairman of Keppel Offshore and Marine Alumni, Mr Choo Chiau Beng, Chairman of Keppel Fellows, Mr Wong Kok Seng, MD, Keppel O&M (Offshore) and Keppel FELS, and Attyah Hassan, General Secretary of Keppel FELS Employees Union join in the celebrations of the New Year with the Keppel FELS team

(Top right) Mr Michael Chia, MD, Keppel O&M (Marine and Technology), presents the first prize to the lucky winner at the Keppel Shipyard new year party lucky draw contest

(Bottom) The Keppel Singmarine family gather to celebrate the new year at their End-of-year lunch on 30 December 2015

Challenge Trophy was introduced. It would be awarded to the department deemed to have performed the best over the course of 2016.

In the yards' New Year message, the respective MD's spoke on the importance of continuing to execute projects well with zero incidents.

It would also be a period to buckle down to reduce costs and increase productivity. At the same time, there will be opportunities to harness the Group's collective strength to take on new and different projects.













Keppelites from the various business units celebrated the end of a fruitful year in 2015 and welcomed 2016 with cheers, music and laughter

Building special bonds

Keppel Volunteers shared their time and talents to create special memories for the underprivileged in the month of November.

BOWLING BUDDIES

Bowled over by a shared passion, three teams of volunteers from Keppel together with special athletes came up tops at the Special Olympics Charity Bowl held on 7 November 2015.

"This is my fourth year participating in this event and I always feel blessed to be given an opportunity to interact with the students through our common love for the sport. I was humbled and inspired by their genuine passion and the potential they show in the sport. I was also struck by their parents' unconditional love. They were there showering their children with support and encouragement," shared Keppel Volunteer Arlina Cristana Midoranda, an Accounts Officer from Keppel Blastech.

The annual charity event was part of efforts to raise funds for various sporting programmes for athletes with intellectual disability. Keppel Care Foundation sponsored the Keppel bowlers at the games.

Adopting a simple 3-game format, each team comprised two partners and a special athlete. The combined scores of the teams' 3-game total determined the outcome of the tournament.

SUNNY SAFARI

It was out with the haze and back to sunny days for Keppel Volunteers as they engaged with senior friends from Thye Hua Kwan and children from KKH.

Innovating with a cross-generation event, the Keppel volunteers brought the two groups of young

and elderly to the River Safari for a morning stroll followed by a lunch amidst nature.

For many, it was the first time seeing pandas up close, making for many special memories.



The strong partnership between the Keppel team and special athletes made them bowling champions at the Special Olympics Charity Bowl



Keppel Volunteers creating another special memory for elderly and young friends at the River Safari

Presenting the best of Latin American cinema

The fifth Keppel Latin American Film Festival (KLAFF) brought nine award-winning Hispanic films to the silver screens of the Lion City. Keppel Offshore & Marine (Keppel O&M), which has presence in Latin America, returned as presenting sponsor for the annual film festival which ran from 19 to 22 November 2015.

At the opening reception on 18 November, ambassadors from across Latin America as well as members of the business community and public gathered to watch "Of Love and Other Demons", based on a novel by prolific Colombian author and winner of the Nobel Prize in



Mr Choo Chiau Beng (extreme left), Senior Advisor to Keppel Corporation and Singapore's Non-Resident Ambassador to Brazil, and dignitaries at the KLAFF opening reception on 18 November 2015

Literature, the late Gabriel García Márquez.

Organised jointly by the embassies of Brazil, Colombia, Costa Rica, Chile, Mexico, Panama, Peru, Venezuela and Uruguay, the festival celebrates the imagination and creativity of Latin American cinematography, inviting all to an immersive experience of the region's diverse cultures.

Season of love

On 19 December 2015, 12 BrasFELS volunteers joined hundreds of children in a Christmas celebration organised in the Lambicada neighbourhood. BrasFELS contributed 500 toys and 30 gifts



Twenty three volunteers from BrasFELS spent time with elderlies who live at Residencial Vila Viver and celebrated Christmas season with them

which the volunteers helped to distribute.

The next day, on 20 December 2015, 29 elderly residents of Residencial Vila Viver received a warm visit from volunteers from BrasFELS. Apart from good cheer, the volunteers also brought with gifts as well as hygiene and household items, such as geriatric diapers, medical gloves, cleaning products and fans, which were donated by more than 240 employees.

"It was very pleasant for me

to join this community effort.
I was impressed with the number of people who volunteered for this initiative. This shows how many good, helpful people we have working with us, said Leon Ribeiro, an Engineer from the Cost Department.

"It is always a great pleasure for me to prepare a celebration party for my friends from Residencial Vila Viver. A little gesture of love can make many people happy," said Lenir Aguiar, Assistant Buyer in the Subcontract department and an active volunteer.

Enriching lives, inspiring dreams

Committed to its role as a responsible corporate citizen, Keppel Offshore & Marine (Keppel O&M) supports a wide variety of causes in the countries where it operates. Its yards in the Americas have been longstanding advocates of education, training and skills development in their respective communities.

COMMUNITY SUPPORT

At its annual Charity Golf Tournament this year, Keppel AmFELS in Brownsville raised more than US\$50,000, which was pledged in support of various local charities and scholarship programmes. The monies raised went to the benefit of YouthBuild, a programme providing handson training in construction trades to young people who did not complete their formal education; My Baby and Me Program, an initiative for equipping teenagers with parenting skills; Camille Playhouse, a community theatre that organises drama workshops for the community's youth; as well as the Keppel AmFELS Scholarship Fund, which offers grants to Brownsville students attending the University of Texas Rio Grande Valley.

Since its inception in 2004, the tournament has drawn strong support from Keppelites, customers and partners, donating over US\$600,000 to local charities and scholarship programmes.

INDUSTRY EXPOSURE

Over in Brazil, Keppel FELS Brasil's Teach-It-Forward programme continues to positively impact the lives of youths attending public schools in Angra dos Reis, Rio de Janeiro.

On 4 December 2015, nine students with learning difficulties visited the shipyard to learn more about the offshore and marine industry, as part of a special programme endorsed by Brazil's Secretariat of Education. During the visit,

Keppelites from BrasFELS shared their experience working at the yard and gave the students a glimpse of the opportunities open to them in the offshore and marine industry.

The school's Education Supervisor, Mrs Elaine Pereira de Oliveira shared that the session was a good platform to expose the students to BrasFELS, one of the biggest employers in the city. She said, "Our students were able to learn about the yard's operations and had the opportunity to interact with employees from different business functions. I believe this has been helpful as it awoke the thirst for learning in our students and broadened their horizons to new career possibilities."



As part of the Teach-It-Forward Programme, Keppelites from BrasFELS shared about the yard's operations, as well as their working experience during a visit by students with learning difficulties on 4 December 2015



Together with the Board of Directors of Keppel AmFELS, Mr Chow Yew Yuen (middle), CEO of Keppel O&M and Chairman of Keppel AmFELS presented proceeds from the golf tournament to the company's supported charities

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Keppel Offshore & Marine secures contracts from repeat customers

Keppel Offshore & Marine (Keppel O&M)'s local and overseas subsidiaries continue to win strong support from repeat customers by securing four contracts.

In Singapore, Keppel O&M's wholly-owned subsidiary Keppel Shipyard secured two conversion contracts – the first is for a Liquefied Natural Gas (LNG) Floating Storage Unit (FSU) awarded by Armada Floating Gas Storage Limited, a wholly-owned subsidiary of Bumi Armada Berhad (Bumi Armada); the second is for a Floating Production Storage and Offloading (FPSO) vessel awarded by Yinson Production (West Africa) Pte Ltd (Yinson), a wholly-owned subsidiary of Yinson Holdings Berhad.

Work on the LNG FSU conversion for Bumi Armada is scheduled to be completed in 3Q 2016. Upon completion, the LNG FSU vessel

will operate at the Delimara LNG Regasification Terminal in Malta. As for the FPSO conversion for Yinson, work is expected to commence in 1Q 2016. Upon completion, the FPSO will be deployed to the Offshore Cape Three Point block located in offshore Ghana.

Mr Chow Yew Yuen, CEO of Keppel O&M, said, "Even in challenging market conditions, we are glad to be the choice yard for operators. This is the 14th conversion/upgrading project that we are undertaking for Bumi Armada. It is also their first LNG FSU conversion project and we are proud to be their trusted partner again.

"We are also grateful for the opportunity to support Yinson again on a conversion project. Having worked with them on an FPSO project in 2012, we will be able to leverage the past experience and close relationship to fast track this project to meet their requirements."

As for Keppel O&M's overseas yards, Keppel FELS Brasil's BrasFELS shipyard in Rio de Janeiro, Brazil, secured a FPSO integration contract awarded by MODEC Offshore Production Systems (Singapore) Pte Ltd. (MODEC), while Caspian Shipyard Company in Baku, Azerbaijan, secured a barge enhancement contract awarded by BP Exploration (Shah Deniz) Limited (BP), operator of the Shah Deniz gas field development.

For MODEC's contract, BrasFELS will be carrying out integration and commissioning works on the FPSO vessel, Cidade de Caraguatatuba MV27, which is to be deployed in the Lapa field, Santos Basin, Brazil. The vessel will depart from Keppel Shipyard and arrive at BrasFELS in 2Q 2016. In the past five years, BrasFELS has successfully completed five FPSO projects safely and ahead of schedule, of which three were for companies affiliated to MODEC.

For BP's contract, Caspian Shipyard Company will be strengthening the steel structure of the hull of STB-1 Vessel, a purpose-built jacket transportation and launch barge. This is the third time that Caspian Shipyard Company has been chosen to carry out refurbishment or enhancement works for STB-1 Vessel.



Work on the FPSO vessel, Cidade de Caraguatatuba MV27 (pictured in the foreground on the right at Keppel Shipyard, Tuas), leverages the synergy of Keppel's network of yards. After module integration work at Keppel Shipyard in Singapore, the vessel will depart for BrasFELS for further integration and commissioning works in 2Q 2016