

## Home, 7 Years after 'death'

Bollywood can't better this script. A soldier meets with an accident seven years ago, loses his memory and wanders around Haridwar as the Army declares him dead. And then the unthinkable happens. He meets with another accident and regains his memory, coming back home in Alwar to his bewildered wife, father and brother.

In a startling turn of events retired Subedar Kailash Yadav was preparing to deal with a drunkard knocking on his door late at night last week when to his utter surprise he saw his dear son Dharamveer Singh standing before him.

Singh, a 39 year old army jawan with the 68 Armoured Regiment in Dehradun, had been missing since 2009 and had been declared dead three years after that as in the norm. His brother Ram Niwas told TOI. "My brother was driving a military vehicle on Chakrata Road in Dehradun when he along with to other jawans met with an accident. Their vehicle over turned on a divider but none of the bodies was found. The Army sent search parties to look for them but it was all futile.". Though the two other jawans reported back to their units later, Singh had vanished into thin air.

The Army then issued his death certificate and granted pension for his family. The family too lost all hope of ever seeing him, though his wife Manoj Devi continued observing a "Vrat" (fast) for his safety.

After the teary reunion, Singh told his family that he did not remember what had happened to him after the 2009 accident. All he remembers is that he wa begging on the streets of Haridwar last week, when he was hit by a bike. The rider rushed him to a hospital when Dharamveer, after regaining consciousness, realised he had recovered his memory" said Ram Niwas, who is a doctor.

Singh said, "One biker (who hit him) gave me Rs. 500. I took the money and bought a ticket for Delhi. After that I reached my village in Bhitela near Alwar. I am in shock. It felt so good to see all of them. I could hardly recognise my daughters. They have become so big". The family has now brought Singh to Jaipur for treatment.

## *Highlights*

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**Need to Know about the Anti-Corrosion Coatings Trend in Global Market 2017:**

Anti-corrosion coatings are extensively used across the transportation, manufacturing, construction, aerospace, oil & gas, infrastructure, chemical, energy, marine, and shipbuilding sectors. Infrastructure sector, which contributed more than USD 2 billion towards anti-corrosion coatings industry revenue in 2015, is predicted to boost the business expansion. The development can be credited to government legislations supporting public infrastructural growth along with the escalation in the number of residential and commercial ventures.

Anti-corrosion coatings industry size in the energy sector is set to register substantial gains of 5% from the period of 2016 to 2025, driven by the products ability to protect the instruments from corroding.

Considering the topographical trends, Asia Pacific anti-corrosion coatings industry will witness notable gains of over 5% from 2016 to 2025, driven by the expanding construction sector along with a rise in the number of ship maintenance & repair activities. Easy accessibility of cost effective labor force and viable anti-corrosion services coupled with thriving shipping business will further steer the business expansion. Japan, China, Singapore, South Korea, India, Indonesia, Hong Kong, Philippines, and Thailand are likely to drive the regional share.

**Most auxiliary engine damage due to human error, warns Swedish Club:** An investigation by The Swedish Club into auxiliary engine damage has revealed that the majority of all damage takes place immediately after maintenance work.



A key finding is that 55% of casualties occur within 10% of the first 1,000 hours or so of operation after overhaul. In most cases the damage occurs only a few hours after start-up.

The report, Auxiliary Engine Damage, also finds that container vessels have a significantly higher claims frequency due to the larger number of installed engines on these vessels. In addition, these engines have considerable output, leading to higher repair costs compared with other vessels.

This latest report from The Swedish Club has been created in response to the Club's members' concerns over

damage to auxiliary engines - a significant segment of machinery claims, both in number and in cost.

The Swedish Club senior technical advisor Peter Stålberg explained "Auxiliary engines run at high revolutions and have a common lubrication system for both cylinder and crank case lubrication. They are not under the same strict regime from the classification society as the main engine, and maintenance is often carried out by the vessel crew.

"We see incorrect maintenance and wrongful repair in all too many cases, and poor lubrication management is also a major contributing factor to auxiliary engine breakdowns. With an average repair cost of more than US\$345,000, we cannot emphasise enough the principle that prevention is better than cure."

Exploration of oil and gas several miles below the surface of the sea involves staggering engineering challenges and also comes with many life threatening and environmental hazards. The earliest known well drilling dates back to 347 AD in China. There have been numerous accidents in the industry causing a huge impact on environment. Still, every disaster, regardless of the cause, plays an important role in improving safety technology and protocols.

**World's Deadliest Accidents involving Oil Rig / Platform Disasters:** A list of 10 deadliest accidents in terms of loss of life in global oil and gas Industry has been compiled below:

**1) PIPER ALPHA PLATFORM** - The Piper Alpha disaster in the North Sea, UK occurred on July 6, 1988 and killed 167 people out of 226 onboard. The accident is considered the deadliest offshore oil rig accident in history till date. The platform was operated by Occidental Petroleum and produced 300,000 barrels of crude per day (about ten percent of the country's total crude production). The Piper Alpha disaster occurred due to human communication error. A vital safety valve was removed by Morning shift crew from a Gas pump and the pump was not supposed to be started under any circumstances. The permit and information was not communicated properly to the management and the 2nd shift manager could not locate the problem that led to the accident. The event resulted in continuous gas leaks and fire burning down the entire platform. Also, the crew did not had proper training for such emergencies and they panicked. Only 61 out of the 226 workers survived the disaster and it took close to three weeks to control the fire.

**Accident date: 6th of July 1988. Deaths: 167 Cause: Human Error**

(contd. on page 5)

## From the Editor's Desk



*We must get the public to look past the glitter, beyond the showmanship, to the reality, the hard substance of things. And we 'll do it not so much with speeches that will bring people to their feet, as with speeches that bring people to their senses.* – Marle Cuomo

*There are democratic ways to express one's opinion. There are many things I do not like, which are to one's liking and disliking. But I do not resort to support or induce vandalism.... A Society, can only progress when there is a space to agree or disagree, with each other.*

–Chandran Peechulli

*I learned silence from the talkative and tolerance from the intolerant and kindness from the unkind.*

– Khalil Gibran

In a Workforce article, "The Ten Ironies of Motivation," reward and recognition guru, Bob Nelson, says, "More than anything else, employees want to be valued for a job well done by those they hold in high esteem." He adds that people want to be treated as if they are adult human beings who think, make decisions, try to do the right thing, and don't need a caretaker watching over their shoulders. While what people want from work is situational, depending on the person, his needs and the rewards, that are meaningful to him, giving people what they want from work, is really quite straight forward. People want Control of their work, that inspires motivation : including such components as the ability to have an impact on decisions; setting clear and measurable goals; clear responsibility for a complete, or at least defined, task; job enrichment; tasks performed in the work itself; and the recognition for achievement. To belong to the inner-crowd which creates a sense of belonging, a motivation: including items such as receiving timely information and communication; understanding management's formulas for decision making; team and meeting participation opportunities; and visual documentation and posting of work progress and accomplishments. The opportunity for growth and development is motivational: and includes education and training; career paths; team participation; succession planning; cross-training; and field trips to successful workplaces.

**Leadership** is key in motivation. People want clear expectations that provide a picture of the outcomes desired with goal setting and feedback and an appropriate structure or framework.

Recognition for Performance creates 'Motivation' In The Human Capital Edge, authors Bruce Pfau and Ira Kay say that people want recognition for their individual performance with pay tied to their performance, activity based.

Employees want people who don't perform fired; in fact, failure to discipline and fire non-performers is one of the most demotivating actions an organization can take-or fail to take. It ranks on the top of the list next to paying poor performers the same wage as non-performers in deflating motivation. Additionally, the authors found that a disconnect continues to exist between what employers think people want at work and what people say they want for motivation. "Employers far underrate the importance to employees of such things as flexible work schedules or opportunities for advancement in their decision to join or leave a company. "That means that many companies are working very hard (and using scarce resources) on the wrong tools," say Pfau and Kay. People want employers to pay them above market rates. They seek flexible work schedules. They want stock options, a chance to learn, and the increased sharing of the rationale behind management decisions and direction.

What You Can Do for Motivation and Positive Morale: You have much information about what people want from work. Key to creating a work environment that fosters motivation are the wants and needs of the individual employees. The most significant recommendation for your takeaway is that you need to start asking your employees

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what they want from work and whether they are getting it. With this information in hand, you'll be surprised at how many simple and inexpensive opportunities you have to create a motivational, desirable work environment. Pay attention to what is important to the people you employ for high motivation and positive morale. When you foster these for people, you'll achieve awesome business success Nobody wakes up in the morning wishing for more trouble that day. However, emotional trouble is essentially our own creation. I think it is largely due to two things. The first is lack of knowledge of reality due to absence of a holistic view and the second is a self-centred attitude.

These two things create unnecessary problems. We can't blame our problems on anybody or anything else. Ultimately we have to realize that the cause of these problems lies within ourselves. We deal with them not through prayer, not through money, not through power, but through understanding and awareness - what we may call wisdom. But before talking about the source of happiness, it might be useful to know something about the system of our minds. Just like pleasure, pain is also part of our experiences. Usually people are under the impression that the mind is independent, absolute. Science, too, is not yet clear about the distinction between the sensorial mind and consciousness.

It is important to make that distinction. When people seek pleasurable experiences, they rely mainly on the sensorial level to attain that pleasure - watching something beautiful, listening to music, tasting or smelling something. This includes tactile pleasures, including sex. These five are positive experiences mainly at the sensorial level; they are temporary. The object of beauty you behold or the beautiful music you hear is gone the moment you stop seeing or hearing it. Nevertheless, if you develop a mental level with certain positive experiences, the experience of pleasure lasts longer. So a disturbing noise at the sensorial level will not affect this basic calmness. Even the pain of physical illness can be subdued in this state. On the other hand, no sensorial pleasure can be had if the basic mental state is that of fear, anxiety and stress. Obviously, mental-level experiences are more important than sensorial ones.

It is important to understand that mental-level happiness need not be about pleasure. It's about mental satisfaction or fulfillment. Even physical suffering and pain can bring deep satisfaction at the mental level. Happiness mainly refers to this feeling at the level of consciousness. There are non-theistic religious traditions, such as a part of Swanky, a 3,000-year-old Indian tradition, and Jainism and Buddhism that do not talk about a creator, but believe instead in the law of causality or the law of cause and effect. Everybody in this country knows about the law of karma. It means action. Any action - whether physical, verbal or mental - arising out of any positive emotion or sincere motivation, like compassion and forgiveness, is positive or good karma. Since the motivation is good, there's a sense of concern for others' well-being, which, as it benefits others and oneself, is considered positive. Otherwise, there's no absolute positive or negative. For example, anger, hatred and suspicion are considered negative. Suspicion maybe positive or negative. Negative is that which is uncomfortable to oneself and/ or to others. Any such motivation will lead to physical, verbal or mental action that can produce negative karma. Experience of pleasure, pain and the action that causes them constitute the law of causality. Both Jainism and Buddhism may have different approaches to many aspects of life but the fundamental purpose is the same: to enhance our ability to love and forgive, and to be compassionate in day-to-day life.

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(Alexander L. Kielland Memorial Statue - Source: YouTube)



(Piper Alpha Disaster Memorial - Source: offshore technology)

**2) ALEXANDER L. KIELLAND DRILLING RIG** - Alexander L. Kielland was a semi-submersible platform accommodating the workers of Edda oil rig linked by a bridge in the Ekofisk field, Scotland, in the Norwegian continental Shelf. The rig was owned by Stavanger Drilling, a Norwegian Company. The Platform was being operated by Phillips Petroleum and it took a watery grave on March 27, 1980 killing a total of 123 people. Only 89 out of 212 workers survived the accident and most died by drowning as the platform turned upside down in deep waters. The platform capsized after the failure of one of the bracings attached to one leg of the five-legged platform structure, created by waves of up to 12m high with winds of over 40 knots. The entire structure tilted 30 degrees and was stabilized for some time by the remaining single cable, which ultimately snapped. Investigation concluded an undetected fatigue crack in

the weld of an instrument connection on the bracing as the root cause of the accident.

**Accident date: 27th of March 1980 Deaths: 123 Cause: Fatigued crack in one of the bracing. Traced back to improper labor where the rig was build in 1976**

**3) SEACREST DRILLSHIP** - Drillship Seacrest was also known as The Scan Queen. It was built in Singapore and was owned by Unocal Corporation. The ship was operating in the South China Sea 430km south of Bangkok, Thailand



when it capsized on November 3, 1989 killing 91 crew men. The 4,400t drillship was anchored for drilling at the Platong gas field owned and operated by Unocal. The rig was capsized by 40 feet high waves and wind speed of

100 knots produced by the Typhoon Gay. The drillship was reported missing on November 4, 1989 and found floating upside-down by a search helicopter the next day. It was believed that the rig capsized so quickly that there was no distress signal and no time for the crew members to respond to the disaster.

**Accident date: 3rd of November 1989 Deaths: 91 Cause: Human Negligence and Mother nature**

**4) OCEAN RANGER OIL RIG** - The Ocean Ranger was a semi-submersible offshore drilling rig owned by Ocean Drilling and Exploration Company (ODECO) and was hired



by Mobil Oil of Canada for exploration at Hibernia field. It was one of the biggest rigs built at that time with a capacity to operate 1,500ft below water and drill up to a depth of 25,000ft below seabed. The rig capsized on February 15, 1982 killing 84 crew members onboard the rig. The rig capsized as a loss of buoyancy resulted from flooding of chain locker and upper deck (ballast control room).

**Accident date: 15th of February 1982 Deaths: 84; Cause: Storm**

**5) GLOMAR JAVA SEA DRILLSHIP** - Glomar Java Sea was a US drill ship that sank in South China sea on 25th of October 1983 due to tropical storm. The ship was owned by Global Marine Inc. Chinese search vessels spent a week before the wreckage was found under 300 feet



of water. The 81 people aboard included 42 Americans, 34 Chinese, 4 Britons and an Australian. Operations ceased prior to the arrival of tropical Storm Lex as it approached from the east of the drilling site. Global Marine's office in Houston, Texas, reported that the drillship was experiencing 75kt (138.9km/h) winds over the bow, but the contact was abruptly lost. No survivors were found in the extensive search operation conducted thereafter. The wrecked drillship was found in an inverted position 1,600ft south-west of the drilling site. Only 36 bodies were found, and the remaining 45 crew members were presumed dead.

**Accident date: 25th of October 1983 Deaths: 81; Cause: Storm**

**6) BOHAI 2 OIL RIG** - Bohai 2 oil rig was one of the oldest rigs owned by China. It sank on November 25, 1979 in Gulf of Bohai, between China and Korea. The accident took life of 72 out of 76 people on board as the rig capsized and toppled in the sea water. The accident was caused by a storm which occurred while the rig was being towed. Fierce winds broke the ventilator pump that caused a hole in the deck and resulted in extensive



flooding. The loss of stability due to flooding coupled with severe weather conditions eventually led to the capsizing of the rig. The accompanying tow boat could not rescue the crew members, who lacked proper training on emergency evacuation procedures and use of lifesaving equipment. The post-disaster investigations reported in the improper stowing of the deck equipment prior to towing. The sunken jack-up rig was eventually salvaged with explosives by the Yantai Salvage Company in April 1981.

**Accident date: 25th of November 1979 Deaths: 72 Cause: Storm, Improper Stowing of deck equipment.**

**7) ENCHOVA CENTRAL PLATFORM** - The Enchova Central Platform disaster occurred in Campos Basin near Rio de Janeiro, Brazil, killing 42 people on 16th of August 1984. The accident occurred due to a blowout which caused a fire and explosion at the central platform of the Enchova field which was being operated by Petrobras. Most of the workers were evacuated from platform by lifeboats and helicopter. However, 42 workers were not so lucky and lost their lives during the



evacuation process. 36 people died due to malfunctioning of the lowering mechanism of a lifeboat, while six died due to jumping from the platform into the sea. The lifeboat remained vertically suspended because of the failure of the bow hook and eventually fell 20m deep into the sea as its supporting cables snapped. The platform was replaced after 18 months of a second incident of same type.

**Accident date: 16th of August, 1984 Deaths: 42 Cause: Malfunctioning of lowering mechanism of lifeboat**

**8) BHN PLATFORM - MUMBAI HIGH NORTH** - The Bombay High North platform was one of the producing platforms of the Mumbai High field owned and operated by India's state-owned Oil and Natural Gas Corporation (ONGC). The platform caught fire after collision with support vessel (MSV) Samudra Suraksha. The vessel was pushed towards the platform by strong swells and hit the



rear part of the vessel causing rupture of one or more of the platform's gas export risers. This resulted in gas leakage finally leading to ignition of the platform. Heat radiation from the fire caused damage to the MSV and the Noble Charlie Yester jack-up rig engaged in drilling operation nearby the platform. The accident caused significant oil spill along with a production loss of about 120,000 barrels of oil and about 4.4 million cubic metres of gas per day. A total of 22 people were killed in the accident fire. A new platform at Mumbai High North was

opened by ONGC in October 2012.

**Accident date: 27th of July 2005 Deaths: 22; Cause: Fire after collision with a vessel**

**9) USUMACINTA JACK-UP** - The Usumacinta Jack-up disaster occurred on the 23rd of October 2007 in Gulf of Mexico. The accident claimed lives of 22 crew after colliding with the PEMEX-operated Kab-101 platform. The cantilever deck hit the production tree of Kab-103 due to strong winds of approx. 130 km/h and waves up to



8 meters high. The collision resulted in oil and gas leakage leading to the closure of the safety valves of two production wells at the platform. The crew members were, however, unable to seal the valves completely, which resulted in continued leakage of oil and gas which ignited fire on the platform. 21 people were declared to have died during the evacuation and one worker missing in the rescue operation was presumed dead.

**Accident date: 23rd of October 2007 Deaths: 22 Cause: Fire**

**10) C.P. BAKER DRILLING BARGE** - The C.P. Baker Drilling Barge disaster occurred in the Gulf of Mexico on June 30, 1964 resulting in fires and an explosion that took the life of 21 people and injured 22 others. C.P. Baker Drilling Barge was deployed for drilling operation for Pan American Petroleum Corporation at the time of the accident. The hull suffered a blowout and water gushed into the vessel through open doors on the main deck and



the barge lost electric power soon thereafter. The entire barge was engulfed with fire and explosion within minutes of blow out. Only 22 out of the total 43 crew on board survived the disaster mostly by jumping into the sea. The rescue operation confirmed eight as dead and 13 crew missing who were presumed dead.

**Accident date: 30th of June 1964 Deaths: 21 with 22 Injured Cause: Fire**

## Rolls-Royce and MOL to develop intelligent awareness for vessels:

Rolls-Royce has signed a deal with Japanese multi-modal transport company Mitsui OSK Lines (MOL), to collaborate in the development of its intelligent awareness system.



The collaboration will be on board 165 m passenger ferry Sunflower, which is owned and operated by MOL's subsidiary. Sunflower operates on a 222-nautical mile route between Kobe and Oita via the Akashi Kaikyo, Bisan Seto and Kurushima Straits.

Rolls-Royce intelligent awareness systems will make vessels safer, easier and more efficient to operate by providing crew with an enhanced understanding of their vessel's surroundings. This will be achieved by fusing data from a range of sensors with information from existing ship systems such as automatic identification systems and radar.

MOL director Kenta Arai said "Ferry Sunflower operates in some of the most congested waters in the world and will provide an opportunity to rigorously test Rolls-Royce's intelligent awareness system. We also expect it to provide our crews with a more informed view of a vessel's surroundings in an accessible and user-friendly way. This can give our crews an enhanced decision support tool, increasing their safety and that of our vessels. This is a significant challenge to frontline technology leading to our ultimate goal of autonomous sailing."

Rolls-Royce, director digital & systems - marine, Asbjørn Skaro said "We are exploring and testing how to combine sensor technologies effectively and affordably. Pilot projects such as this allow us to see how they can be best adapted to the needs of the customer and their crews so that our product effectively meets the needs of both.

"Successful pilots and product development programmes are also an important step towards the further development of remote and autonomous vessels and meeting our goal of having a remote controlled ship in commercial use by the end of the decade."

Rolls-Royce expects to be able to undertake an approval of concept and have its intelligent awareness product commercially available in 2018.

The system builds on experiences from R&D work worldwide. The intelligent awareness system will benefit

from Rolls-Royce's extensive experience in the Tekes-funded project Advanced Autonomous Waterborne Applications Initiative which has been running since June 2015. The company has been conducting a series of tests of the sensor arrays in a range of operating and climatic conditions on board Finferries' 65 m double-ended ferry Stella, which operates between Korpo and Houtskär in the Archipelago Sea on the southwest coast of Finland.

## Wärtsilä HYTug Meets Environmental Demands for New Brazilian Port:

Norfolk Naval Shipyard (NNSY) has successfully undocked USS La Jolla (SSN 701). USS La Jolla will remain pier-side to finish the final leg of the moored training ship (MTS) conversion that began in February 2015.



It is the first of two next-generation vessels undergoing conversion at the shipyard to train nuclear officers and sailors at the Nuclear Power Training Unit (NPTU) in Charleston, South Carolina. USS San Francisco arrived at the shipyard for its conversion in January 2017.

The two current MTS subs at NPTU, both commissioned in 1964, have trained nuclear officers and sailors since their conversions in the early 1990s.

Two complete hull cuts have been undertaken, separating La Jolla into three pieces. The centre section was recycled, and three new hull sections were added, extending the overall ship length by 76ft (23m).

The new hull sections arrived from Electric Boat via barge and were then craned into the dock. The conversion process continued throughout, including work typical of the engineered overhauls NNSY conducts on other Los Angeles class submarines.

Joe Klopfer, La Jolla project superintendent commander, said, "With the complexity of the project, to get it out of dock required the whole shipyard and a focused effort. It feels good that we came together to get it out, and the team is able to see the fruits of its labour."

Over the next year, La Jolla will undergo further modifications, including electrical systems and engine room work.

"There's also a significant amount of structural work that needs to be done to the boat to be able to tow it down to Charleston," added Klopfer. The vessel is scheduled to complete its conversion to a fully fledged MTS in late 2018.

**Australia boosts submarine maintenance with more workers:** Australia's maintenance capability for its Collins class submarines is to be bolstered by the transfer of up to 200 workers from its air warfare destroyer project.



The Royal Australian Navy (RAN) operates six of the diesel-electric Collins submarines from Osborne shipyard in Adelaide. The development and construction of RAN's three Hobart class destroyers is winding down.

The Australian Minister for the Defence Industry, Christopher Pyne, said, "Australia's future shipbuilding and sustainment workforce is at the very heart of success for Australia's naval shipbuilding enterprise.

"Over the next 10 years, the size and skill level of the naval shipbuilding workforce will need to increase significantly to meet the demands of the various shipbuilding programmes. To meet these challenges, we need to keep as many of the workers currently building the air warfare destroyers in the naval shipbuilding industry as possible.

"This is why the government has agreed to a targeted retention strategy to create up to 200 positions within ASC Submarines for current shipbuilders working on the Air Warfare Destroyer programme."

As the Air Warfare Destroyer programme winds down, workers will move to support Collins class submarine sustainment work and undertake training and upskilling to support Australia's naval construction programmes. Up to 100 scholarships will be offered to workers to support opportunities to upskill in roles in operations management, computer-aided design, and the engineering and supply chain fields.

**US Navy awards submarine modification and repair contracts:** General Dynamics has won two multi-million-dollar contracts to carry out maintenance and modifications to the US Navy's submarine fleet.

The company's Electric Boat subsidiary has been awarded a contract modification worth US\$432m to provide R&D and lead-yard services for the US Navy's Virginia class nuclear-powered attack submarines.

Under the contract, Electric Boat will undertake development studies and other work to improve the design of the submarines. Additionally, its engineers will undertake the R&D work required to evaluate new technologies for newly built Virginia class ships, including the Virginia Payload Module, which will triple the submarines' missile-firing ability.

The US Navy has ordered 48 Virginia class fast attack submarines through to 2043, 14 of which are already in service.

General Dynamics' Electric Boat has also been awarded a five-year contract worth up to US\$240m to carry out non-nuclear repairs to the US Navy's submarine fleet.

The maintenance work will be carried out at the Naval Submarine Support Facility in Groton, Connecticut. The contract covers submarine overhauls, maintenance, repair and modernisation upgrades, as well as ship alterations, temporary modifications and field changes, supplies and/or ancillary services and corrective and preventative maintenance.

Electric Boat's engineering and design organisation comprises more than 5,000 employees, working on all facets of the submarine lifecycle, from concept formulation and design through construction, maintenance and modernisation, and eventually to inactivation and disposal.

**ABB opens operations centre in China:** ABB has opened an 'Ability' collaborative operations centre in Shanghai, China.



The new centre will monitor data gathered by sensors on board ships and sent ashore by satellite. Engineers in the centre then use this data to remotely analyse equipment performance, troubleshoot and diagnose as well as work on maintenance planning and fleet benchmarking.

The Shanghai centre will work with existing collaborative operations centres in Billingstad in Norway, Helsinki in Finland, Dalfsen in the Netherlands, Genoa in Italy, Miami in the USA, and Singapore. The global coverage means ABB engineers are available during their daytime working hours, wherever a ship is or whenever assistance is sought. The centre will offer real-time support in both Chinese and English.

Alf-Kåre Ådnanes, head of hub business unit marine and ports China for ABB, said, "We are living through one of the most exciting periods in the history of the maritime industry, where digitisation and connectivity are becoming predominant.

"We have provided integrated propulsion systems to a wide range of vessels built in China, with both domestic and global operations. The ABB Ability collaborative operations centre allows us to better serve these vessels and their operators with the latest digital services, driving further progress for efficient and reliable operations."

In addition to enabling predictive maintenance, ABB's ability to monitor the performance of ships or whole fleets is long-established. Roger Xie, general manager, ABB service centre hub business unit marine and ports China, said, "The success of this is related to our strong support infrastructure, investment in shore-side analysis expertise, and ability to respond, plan and troubleshoot."

Remote monitoring undertaken through ABB's collaborative operations allows owners to pre-survey marine equipment on board ship and collect data in advance of repairs. This can save up to 50% on dry docking equipment, said the company, which is already remotely monitoring more than 700 ships and aims to raise that number to 3,000 by 2020.

**MoD renews £200m marine support services contract with BAE:** BAE Systems has been awarded a £200m (US\$267m), seven-year contract to maintain the combat management systems, tactical networks and shared infrastructures across 38 of the Royal Navy's vessels.



The Ministry of Defence (MoD) contract requires BAE Systems to ensure high levels of equipment availability, overcome obsolescence, and improve the reliability and flexibility of vessels' combat systems.

A dedicated BAE Systems ship support team will provide repairs, technology refreshes and spare parts under the

Joint Support Solutions contract (JSS) from the company's Broad Oak (Portsmouth), Frimley, New Malden and Yeovil offices in the UK.

It is the second JSS contract between the MoD and BAE. The first, signed in 2010, covered the Royal Navy's Type 23 frigates, landing platform dock (LPD) and HMS Ocean, the RFA Argus and mine countermeasure vessels (MCMVs).

The latest JSS 2 contract has been extended to also include the Royal Navy's six Type 45 Destroyers and two Queen Elizabeth aircraft carriers.

The JSS 2 contract falls within the Common Support Model, which provides a framework for support across the entire Royal Navy fleet of warships in one overarching arrangement.

Benefiting from the MoD's ongoing investment in the Type 26 Global Combat Ship programme, and building on the Shared Infrastructure (SI) systems being installed on the Type 23s, River Class Batch 2 Offshore Patrol Vessels, LPD and Landing Platform Helicopter (LPH) classes, JSS 2 will deploy the next generation of the MoD's shared infrastructure onto the Type 45 and QEC ships.

The shared infrastructure technology introduces an agile run time environment that allows the rapid assessment, trials and deployment of new and emerging capabilities.

The JSS 2 contract will see around £50m (US\$67m) invested in 27 core suppliers across the UK, including 14 SMEs, for hardware, software and logistical support.

Richard Williams, BAE Systems naval ships combat systems director, said: "The Joint Support Solution contract delivered high levels of combat systems availability to the Royal Navy's fleet and provided the Ministry of Defence's Maritime Combat Systems team with specialist support.

"The new JSS 2 contract builds on that pedigree, for more platforms and equipment, and drives greater value from MoD's investment in the Type 26 Global Combat Ship to achieve fleet-wide combat systems benefit and the Defence Equipment & Support Agency's Combat Systems Coherence strategy."

**Standard proposed for software maintenance on board ships:** International shipping association the Baltic and International Maritime Council (BIMCO) and the Comité International Radio-Maritime (CIRM) have proposed the first industry-wide standard for software maintenance.

The proposed Standard on Software Maintenance of Shipboard Equipment was sent to the International Maritime Organization (IMO) this month and can be downloaded here. [<https://www.bimco.org/-/media/bimco/news-and-trends/news/press-releases/2017/industry-standard--software-maintenance-of-shipboard-equipment-v10.ashx?la=en>]. The IMO will consider the software maintenance standard at the next Navigation,

Communications and Search and Rescue meeting in February.

BIMCO and CIRM want all companies producing and maintaining software for shipboard equipment to use the standard.

The ISO (International Organization for Standardization) has provisionally accepted the proposal and BIMCO expects a working group to complete the standard in 2021.

BIMCO has warned of the risk of severe incidents on ships, delays and costs to shipowners, as well as cybersecurity problems. Incidents reported to the association include ships suffering complete blackouts and malfunctions in radar and other related systems because of difficulties with a single software update.

Angus Frew, secretary general and CEO at BIMCO, said, "We hope the entire industry will adopt these standards, to make ships safer, to prevent cybersecurity problems and to save money.

"The industry has been living in a world of hardware. But software has been integrated into most physical equipment on the vessels, and the systems and procedures to manage the software have not kept up with technical developments, and it creates problems."

The goal of the standard is to ensure software updates happen in a secure and systematic way and to increase the visibility of the software installed on board.

The standard requires the user to have a complete list of what software versions are currently running on the ship's equipment, and ensures that all equipment can display the current software version. It also means that if an update goes wrong, ships can do a complete roll-back to a previous software version, which will enhance safety.

The proposed standard identifies the various roles involved in maintaining software. These include the producer of the software, system integrator, data provider, service and ship owner. It also has a procedural flow for maintenance and an outline of the requirements and responsibilities of the five roles.

The industry standard has been devised over four years in partnership with more than 20 companies, including BP Shipping, Maersk Line and Emarat Maritime.

"It is our hope that BIMCO members will use suppliers who use this standard and that the shipowners will adhere to it as well, for example, by ensuring that there is an updated software log on board," added Frew.

**First classification system for 3D printing spare parts for maritime sector introduced:** It is noteworthy that ship prices will rise next year with the shipbuilding industry shrinking recently due to forecasts about hundreds of billions of won in loss



by Samsung Heavy Industries. This is because a rise in ship prices is highly likely to pull up prices of orders across the board and make an improvement to shipbuilders' business performances.

According to the shipbuilding and securities industries on December 12, it was forecast that prices of Korean ships will inflate about 15% this year thanks to a strong Korean won, rising steel prices and limited competition among others.

The Clarksons Index, a lagging indicator, is expected to climb more than 10 percent in the second half of next year. "A rise in prices of orders to Korean shipbuilders started to spread from mid-sized vessels of Hyundai Mipo Dockyard to large-sized ones of Hyundai Heavy Industries," said Park Moo-hyun, a researcher at Hana Financial Investment. "A strong Korean won and a hike in steel prices will accelerate a rise in prices of orders to Korean shipbuilders."

Observing recent orders, some types of vessels are taking the initiative in raising vessel prices. Hyundai Heavy Industries received orders to build three very large crude carriers (VLCCs) from two shipping companies (Sinokor Merchant Marine and Hyundai Glovis) this month. In particular, it was of note that the shipbuilder received orders at prices higher than their market prices. Daewoo Shipbuilding & Marine Engineering (DSME) also landed a VLCC contract from a Greek company on December 4. It was also reported that DSME got the order for a price at the level of Hyundai Heavy Industries's prices of the three vessels. "We now know that DSME landed the order at a price US\$2 million more than US\$ 81 million, the price of a VLCC," an industry official said.

Such orders can be credited to technological quality satisfying international environmental standards. Experts say that vessel prices rose as various kinds of devices were added in order to honor Tier 3 Standards, an environmental regulation set by the International Maritime Organization (IMO).

"Although China is still continuing its offensive with low prices, the Korean shipbuilders were able to land the orders at prices higher than market prices because they adopted high-end specifications to meet tougher environmental regulations," said an official of the shipbuilding industry.

In recent years, the Korean shipbuilding industry's biggest concern was low prices of ships built in China. Even though Korean shipbuilders told shipping companies about the quality of ships built by Korean shipbuilders, a lot lower prices offered by Chinese shipbuilders made Korean shipbuilders helpless. Pan Ocean recently placed orders for six super large ore carriers (VLOCs) with the Chinese shipbuilding industry. The contract totaled US\$444.51 million and US\$74.09 million apiece. The price difference is large compared to an order amounting to about US\$80 million to build a VLOC which Polaris Shipment placed with Hyundai Heavy Industries.

**A seafarer's story:** Working away from loved ones for long periods of time can be a lonely and isolating experience for seafarers, who can find themselves missing



out on so much while they're away. SeafarerHelp was contacted by a seafarer who had tragically lost his wife while he was on board and wanted to share his experience with us. Unfortunately he also recently lost his mother but was unable to attend her funeral as he was at sea. SeafarerHelp has supported him through this difficult experience. You can read his story in his own words below.

"We have just battled with hurricane Irma within the last few days... and I believe we seafarers always think of one thing: until when can I stop sailing? However, rough seas and bad weather are only few of the things we encounter. What about family matters? What about problems at home and not to mention, home sickness? What about loss of our loved ones?

At the age of 39 after being married for three years, my wife passed away during the time she gave birth on the eve of Christmas 2016 while I was on board. I want to share my how I handled (and still handling) this lowest downfall of my life.

Let me tell you how we met. She was so naive when I first saw her on Facebook (FB). She was into a failing relationship and I was coping with my breakup with previous girlfriend. I should say, the common link between us is her previous boyfriend and admittedly I contacted her to win their relationship back.

To cut this part shorter, her relationship with her ex-boyfriend didn't work at all so during her curing stage, and mine as well, we started chatting thru Skype and

FB (and Yahoo Messenger that time) and it all continued for over a year. In 2011, most of the ships are already starting to have an internet access but mine was using the old fashioned e-mail system. We communicated in my on-board stage still, and to avoid divulge of our precious "friendly" communication we devised our own language that worked for us. When we were asked what was that, we said it was combination of German and our own terminologies when in fact, it was just done with letter replacement. THERE WAS NO SINGLE DAY THAT WE NEVER COMMUNICATED.

She was 24, I was 36. She calls me Kuya (term of endearment for a big brother in Filipino) because she's the eldest in the family and no Kuya at all; and I called her Sis. But the Kuya-Sis relationship flourished into something better in about one and a half year. This time, when I finally had her YES, I was assigned into another vessel with internet this time. Our email system became something more tangible, more real time, more realistic. Our communication became as often as five times at least in a day and summing them all up, around one hour spent in one single day. :)

I had my vacation that time and even when having vacation we were still having our relationship flourishing.... I am from Cavite (near Philippine capital Manila), she's from Bacolod (somewhere in Visayas) and we're an hour away by plane. I decided to visit her, I met her family for the first time. They are all wonderful people, and my intuition of her being the perfect woman to be my wife became stronger despite my age.

Honestly I felt like I was running out of time so I decided to propose. Still, we were still away when we were fixing our wedding. I was onboard, she was still in Bacolod. When I had my vacation around 3 months before our wedding, it was the only time when we really spent together. However, my father was so ill that time so I had to leave Bacolod and attend to my father. (My father passed away a month after our wedding).

After getting married, I was assigned to my new company with 1MBPS shared connection so video calling thru FB worked well. We were granted with 2 hours time in a day that resets every GMT+00 so our 1 hour sometimes became the full two hours. That happened every day.

During vacation however, I always made it a point to get some bucks enjoying our lives together travelling. We went to various Philippine tourists spots: Sagada, Baguio, Pagudpud, Boracay, Negros' Lakawon Island, Guimaras, and many more. We went to Singapore and let her experienced the cozy stay at Marina Bay Sands for an overnight. We went to Malaysia and stroll there for several days. We went flying with a parasail... and it made me so amazed the way she conquered her fear of heights only because she was with me. We also went hiking in Mt. Maculot.

We were so happy when she got pregnant on early 2016

while I was having my vacation. I left on September 2016 without having any clue that sooner, something life changing would take place. In her pregnancy we were still chatting. She's showing me every kick made by the baby... when she feels vibration of fixed manner that we thought to be the baby doing hiccups, and even when the baby tries to change her position by persistently pushing one side of her tummy. I witnessed all those via video calling and some recorded videos. She would tell me "Hon, batiin mo muna si Baby oh... Nagwawala na naman, nagpapapansin." (Honey, the baby wants you to say Hi to her. She's restless catching your attention). And she would stop after I greet her.

We celebrated our third anniversary on December 22, 2016. She asked me if she could go out with her mom who happened to be with her. She said she wants to take long walks because sooner our baby was on due (for birth) so she needed some effort to do strenuous activities for easier birth. She had a date with her Mom saying that would be the last time we'd celebrate with her "alone", because next year, there will be three of us. After her date with Mom, I had my one final chat to her... the usual one full hour of chat. And we said goodbye without a clue, it was final.

December 23. When I woke up (I was in Brazil) she left me with an offline FB message "Hon, I think this is it. I had spotting so by the time you get this message, we're in the hospital. Don't worry, I will be fine. :) I'm so excited!"

In around my noontime at Brazil, I was informed by my mother in law... I already had my child and I am already a father. But my wife's blood pressure was dropping. I never expected things would go wrong because as always, I trusted the Lord things won't go wrong.

December 24, I asked them what was going on, they told me there was a condition called "Amniotic Fluid Embolism" taking place. I googled and I felt sudden rush of my blood to my head... It was really scary. Still, I mumbled, "Lord I trust you nothing bad will happen."

My sister was asking if I could come home. My mother in law asked me too, if I could come home. It was when I thought something bad already happened... "Is my wife dead?" and had a very tragic "yes..."

I went home on Christmas Day with my wife in a casket. The over 24 hours of travel all the way from Brazil to Qatar (plus several hours of waiting) and finally to Manila; was the longest time of my life. I'd always think of nothing but be composed.

Nothing in her live looks resembled her appearance inside the casket. She was so pale, bloated, and the only thing I remember it was her was the shape of her forehead and her cute button nose...

We were almost perfect. We both lived a comfortable life. We travelled, we endured every moment of our lives

together. We also endured moments of being together when we were physically away.

With her death, sometimes I have unanswered questions... but the mere fact I am alive is I am still loved. It is hard for me to confide because I always think everything every people will say to me, I already know them. I do not know God plans... YET at least. But I do know He has plans. I am thankful though, that our child is healthy.

In every tear shed, in every mourning casted, in every burst of emotion; there is my wife up there hurting the most. That is why I always tell myself lessen my shedding of tears, mourning, and just continue life.

Being a seafarer is indeed a challenge. It would have been greater if it didn't end up with her leaving me, but I am so confident that it has always been possible to be happy with it. I am happy though, because I have good memories to recall. I have good memories to tell to my child."

**Marine Propulsion & Auxiliary Machinery preview 2018:** Paul Fanning looks at the likely big issues of 2018 and concludes that regulation, fuels and digitisation will continue to occupy the minds of most in the shipping industry

Welcome to 2018. As ever at this time of year, thoughts turn to what the next 12 months have in store. And from shipping's perspective, it seems clear that certain themes are going to dominate.

First of all, 2018 takes us one step closer to the deadline for the global sulphur cap. This is bound to dominate discussion in 2018 - much as it did in 2017. However, many feel that this will be the year when a real sense of urgency will start to creep into many shipowners' attitudes to this issue and in which the 'wait and see' attitude that has largely prevailed so far transforms itself into solid decisions about how best to comply.

On a related note, the uptake of LNG as a marine fuel increased significantly in late 2017 and this seems likely to continue in 2018, particularly with big players such as MAN having made clear their commitment to its adoption.

One of the most heralded themes of 2017 has been digitalisation and its potential benefits for shipowners in terms of fuel savings and more general operational efficiencies. However, uptake of these technologies has not yet matched the hype. I would expect that 2018 will see shipping embrace digitalisation rather more enthusiastically.

The growing adoption of hybrid and battery systems was another theme of 2017. It therefore seems certain that 2018 will see further developments in this area.

Finally, 2018 is an SMM year, so it is inevitable that this huge shipping event in Hamburg in September will see many of the year's biggest technological developments unveiled.

**Crunch time on the cap?:** The theme of regulation dominated in 2017 and it's a safe bet to say this will continue in 2018. We are now less than two years away from the deadline for the global sulphur cap and the time when decisions are going to have to be made about how best to achieve compliance.



To this point, operators have largely adopted a 'wait and see' approach to compliance - hoping that the most advantageous option becomes apparent with time and making their choice accordingly.

This attitude was reflected in a Gulf Oil Marine survey unveiled last November, which made it apparent that ship operators were delaying ship operator preparations for the global sulphur cap in favour of more immediate commercial priorities.

Speaking of this survey, Gulf Oil Marine's technology and innovation director Don Gregory said that the survey reported 100% compliance was at the top of all Gulf Oil Marine customer's commitments. But the majority of discussions indicate a wait and see approach to compliance.

In 2018, a wait and see attitude is going to be a precarious attitude to hold. Things are moving quickly and if, for instance, a shipowner chooses to install scrubbers, the time to commission and install them is very limited. Given this, I would expect 2018 to be the year in which shipowners get off the fence on sulphur cap compliance.

### **LNG set for wider adoption**

Of course, another method of compliance with the sulphur cap is the use of LNG as marine fuel. This is an area which saw significant progress in 2017 and this



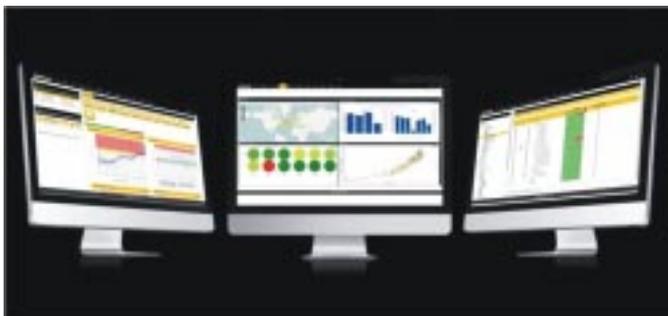
would seem likely to continue in 2018. Among the developments of 2017 was the conversion of the first

container ship to run on LNG in Wessels Reederei's Wes Amelie. This was followed by the even more significant announcement at COP23 in Bonn from CMA CGM that its nine ultra-large container ships will be LNG-fuelled from the outset. The French shipowner will take delivery of the ships in 2020. It is the first shipping company to equip giant container ships with LNG propulsion from the outset.

These announcements, along with others in the same vein, would seem to indicate a general shift taking place that is moving LNG to the mainstream of fuel choices. And, with commitments such as MAN's to subsidise conversions to LNG, this trend seems certain to persist and grow in 2018.

### **Time to reap the digital dividend**

Digitalisation has been a key topic in shipping circles for some years now, but it's fair to say that, while developments have been coming thick and fast from solutions providers, this has not yet been matched by the uptake from shipowners and operators themselves.



This, some believe, is holding shipping back. This was expressed at a digital symposium held last year by Caterpillar where Caterpillar Marine Asset Intelligence global business manager, Leslie Bell-Friedel said "What many may not realise is how much the approach to technology adoption can impact customers' return on that investment. Marine companies, like those that have come before them on the digital journey, are on the one hand failing to capitalise on the true benefit of data and analytics, and on the other hand are experiencing higher than expected costs of implementing technology. Suboptimal actions can have a negative impact on ROI - reducing the potential value while increasing potential costs substantially."

It would seem likely that 2018 will start to see a greater uptake of digitalisation as shipping companies both realise the benefits it offers and/or start to realise they are falling behind their competitors in this key area.

### **Hybrid goes from strength to strength**

The use of hybrid and battery systems saw yet more exciting developments in 2017, as more shipowners opted for these solutions as a means of delivering environmentally friendly and energy-efficient propulsion.



As things stand, of course, most of these solutions are currently being employed on shortsea vessels such as tugs, OSVs and ferries, but there have been developments that suggest these technologies will extend to other vessels as batteries become cheaper and more efficient. As the technology improves, the expanded capacity will soon allow vessels to run on pure battery power for longer.

As a signal of this, due for delivery in 2018 is the first of Hurtigruten's new hybrid-power cruise ships. While on these groundbreaking vessels the battery power leads to an estimated 20% decrease in fuel consumption and emissions, the Norwegian shipowner has made it clear that it is laying the groundwork to boost their ability to run on battery power. Expect to see more developments in this area in 2018.

### Gearing up for SMM 2018

Finally, 2018 is an SMM year. This huge shipping event takes place every two years in September in Hamburg and attracts the great and good of the maritime world. What it also features are the latest technological developments, particularly in propulsion. Enginebuilders and manufacturers inevitably tend to save up their latest developments and product launches for these momentous four days.

So if you start thinking in summer this year that things seem to have gone a bit quiet in terms of new equipment launches, just wait and see what happens on 4-7 September.

In 2016, SMM took digitalisation as its theme and this topic seems likely to play a key role in 2018 as well.

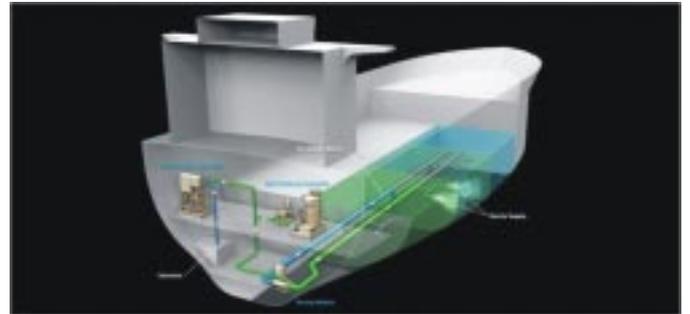
**Envirocleanse to apply for USCG type-approval:** Share to LinkedInShare to TwitterShare to FacebookShare to Google+

Envirocleanse's inTank distributes its active substance via nozzles into the ballast tanks (credit: Envirocleanse)

Envirocleanse will be applying for US Coast Guard (USCG) type-approval during Q1 this year for its inTank ballast water management system (BWMS). It has completed all land-based and shipboard testing for its system, the company said in a statement yesterday.

Applications for IMO and Flag type-approvals will then be made, "after the appropriately-scheduled MEPC meetings," the statement added. The next meeting of IMO's Marine Environment Protection Committee (MEPC) is scheduled for 9-13 April this year.

All the tests have been carried out aboard the training ship Golden Bear, owned by the California State University Maritime Academy, with DNV GL as the independent



laboratory.

As its name suggests, InTank treats water in transit using what the company describes as a unique nozzle dispersion system patented by the US Geological Survey for mixing its active substance in the ballast tanks. That substance is sodium hypochlorite (NaOCl), which can either be generated electrically from a small sample of ballast water or carried as a bulk chemical, depending on a ship's operating profile.

A circulation module mixes one tank at a time, adding disinfectant until the target total residual oxidant (TRO) level is reached. After an initial hold time, the module rechecks the TRO in each tank, applying more NaOCl if required. Before discharge, the module checks the remaining TRO and applies sodium thiosulfate to neutralise any remaining active substance.

Envirocleanse executive vice president of sales and marketing Matt Hughes said in the company's statement that its system needs no filter, imposes no re-power requirements on the vessel and requires no crew interaction in port. "One of the primary concerns of today's ship operators - BWMS operational delays and related demurrage - has effectively been eliminated," he said.

Its announcement comes two months after the company revealed an agreement with CMB/Bocimar to install an inTank BWMS aboard the Capesize bulk carrier Mineral New York. This is a pilot study and includes treating water in a cargo hold being used in part as a ballast tank. Speaking to MP today, Mr Hughes said that the system's final module will be delivered to the vessel on 22 January and should be up and running soon after. "We already know the system works due to recent dye trials that replicate our system," he added.

## **“MARINE WAVES”**

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