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HOW TO OPERATE AN OILY WATER SEPARATOR (OWS) ON SHIP

Karthik Raj - GME

An oily water separator clears the bilge water of oily content to bring it inside the acceptable range to discharge it overboard. An oily water separator is a machinery for such importance that it is handled by only the 2nd or chief engineer. (However, the duty engineer might also be asked to operate under supervision)

Operating an Oily Water Separator

An oily water separator can only be operated when the ship is sailing and en route. According to MARPOL, the oil content of the effluent must be less than 15 ppm and the ship has in operation an oil discharge monitoring and control system and oily-water separating/ filtering equipment.

In case of failure to follow any of the above mentioned rules, the ship will be fined and stopped, and the chief or 2nd engineer can even be imprisoned.

Because of such high risks, operating an oily water separator should be done with utmost precision to minimize the risks of marine pollution. Though a "How to Operate?" guide is always posted near the oily water separator, there are few points to be kept in mind and followed to prevent any mistake.

Operating Procedure

The following points are to be followed while operating OWS.

1) OWS overboard manual discharge valve is to be kept locked and keys are to be kept with the chief engineer. Open the lock and overboard valve. Open all the other valves of the system.

2) Open the desired bilge tank valve from which the oily water mixture is to be discharged from OWS.

3) Open air if the control valves are air operated.

4) Switch on the power supply of the control panel and OCM unit.

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5) Fill the separator and filter unit with fresh or sea water to clean up and prime the system till the water comes out from vent of second stage.

6) Start the OWS supply pump which is a laminar flow pump and one that will supply the oily water mixture to OWS.

7) Observe the OCM for ppm value and keep checking sounding of bilge tank from where OWS is taking suction and of the OWS sludge tank.

8) A skin valve/sample valve is provided just before overboard valve and after the 3-way valve. Keep a check on the sample for any effluent and clarity.

9) Keep a watch on the ship side at the overboard discharge valve.

10) After the operation, Switch off the power and shut and lock the overboard valve. Keys to be handed over to the chief engineer.

11) Entry to be made by chief engineer in the Oil Record Book (ORB) with signature of operating officer, chief engineer and the master.

Courtesy: *Marine insight*

WHAT ARE ISOGONIC LINES?

Sreesha - GME

One of the most crucial cornerstones of the maritime sector is the realm of navigation. Irrespective of the vessel's type, size, service, and so on, any marine traffic is rendered incomplete without the very important aspect of navigation and directionality.

In endless swathes of open seas or oceans, a very strong foundation of direction and real-time location of the vessel is indispensable to a seafarer.

In the aviation sector, it is equally important for a pilot to control the flight in the vast skies. Unlike roads, you do not have the advantage of looking at all the familiar landmarks and roads, or in today's times, you solely rely on mobile application-based apps on your smart phones!

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As ships are much older than planes, directionality in the earlier days was challenging. The very first mariners and sailors relied on the position of celestial bodies like the sun, moon, and stars to navigate their way through the vast and hostile seas in primitive wooden vessels.

However, soon after, the incredible advent of compasses came into the picture around the 11th and 12th centuries in both Eastern world and Western world countries; and this changed the maritime industry forever.

We are all familiar with magnetism and compasses sinc Currently, the earth's magnetic field lines are from the southern hemisphere to the northern hemisphere. So, whenever you hold a compass, the end of the needle marked magnetic north point essentially in a direction opposite to the earth's actual magnetic field, from south to north.

Thus, we can also say that the compass's magnetic needle (north magnetic pole) points more or less towards the geographic north of the earth, which is nothing but the extreme tip of the North Pole, and the other end towards the geographic south (South Pole). Now, carefully note the term more or less.

The earth's geographic north-south orientation is aligned with the geocentric meridian, and the centre of rotation of the earth's axis lies approximately 10 degrees away or askew or offset from the north-south alignment of the earth's magnetic field. This is because of the geomag -netism dynamics, leading to this small shift every thousand years or so.

According to scientists and experts, from a time of about over a thousand years ago, roughly the same time the early compasses became handy of mankind, to the present day, the earth's magnetic field orientation has indeed undergone a small change or diversion more away from the geographic north-south orientation. However, once again, this change is not very dramatic. As of the current day, the magnetic north pole lies somewhere in the Canadian Arctic region.

Please note that the change in magnetic north-south orientation is not to be confused with a change in magnetic polarity or magnetic reversal. This is where the entire magnetic field changes its polarity; that is when the current direction of the magnetic field will become north to south.

According to scientific data, this happens at an average time of at least a few lakh years. So, even if on a pessimistic note, when we consider the next magnetic reversal to happen, humans, in all probabilities, may not see it!

Now, when we hold a magnetic compass at any random place on the earth's surface, does the magnetic north pointer of the needle show the same deflection as someplace else?

The answer is a no, even if we strangely expect it to be yes. This difference and angle between the magnetic north and the geographic north are known as the magnetic declination.

The reason behind this effect can be explained in the following points and descriptions:

- The direction of the magnetic north is aligned with the horizontal component of the field intensity. So, for level places like the sea surface, the angle is less as the intensity vector of the magnetic field is more planar. However, for very high altitudes like high mountain angles and so on, the value of this declination is different. Hence, the altitude and topography of the place is crucial.
- The secular variation of the magnetic field. This is a time-variant change in the magnetic field over a given area. This depends from location to location. In some places, the intensity is more, and in some, the intensity of this change is less. So, the variation of the magnetic field over London in the last few centuries may be different from that of Mumbai.
- The crucial point in the introductory section about the difference in magnetic and geographic orientation also contributes to this declination.
- Spatial variation in earth's magnetic field and rapid dynamics in places due to changes in geology and underground mineral distributions.
- The complicated and erratic nature of the earth's magnetic field is highly unpredictable and changing, encompassing various complex geological and physical phenomena beyond the scope of discussion.

Courtesy: *Marine insight*

SEMPRA AND JBIC JOIN FORCES TO PURSUE ENERGY TRANSITION OPPORTUNITIES

Valli kumar Alagan - GME

Houston-based Sempra Infrastructure, a subsidiary of Sempra, and Japan Bank for International Cooperation (JBIC) have signed a memo - -randum of understanding (MoU) to collaborate on energy transition opportunities, such as LNG and hydrogen, in the United States and Japan.

Cameron LNG facility. Courtesy of Sempra

The MoU will see Sempra and JBIC advance their project structuring to improve the global energy supply chain through LNG, hydrogen, and other decarbonization efforts.

The U.S. Department of Energy and Japan's Ministry of Economy, Trade and Industry are currently implementing a memorandum of cooperation (MOC) in the field of carbon capture, storage, conversion and recycling, and carbon dioxide removal.

In this context, the MoU between Sempra Infrastructure and JBIC is intended to help Sempra Infrastructure and its customers in Japan meet many of the objectives of the MOC and help support further efforts between the two countries to advance decarbonization efforts.

As Japan's policy-based financial institution, JBIC aims to financially support the creation of business opportunities for Japanes companies and the securing of a stable supply of energy.

Sempra has established various partnerships with Japanese companies, with one of them reflected in Sempra Infrastructure's Cameron LNG facility and recently announced strategic collaboration with a Japanese consortium, which calls for an evaluation of potential enhancements of the energy supply chain in support of decarbonization through e- natural gas as part of the ReaCH4 Project.

In addition, the company is developing the Hackberry Carbon Sequestration Project, which contemplates the participation of two Japanese companies. Both development projects are in close geo- -graphical proximity to the Cameron LNG facility.

"Sempra Infrastructure is thrilled to expand its collaboration with JBIC as we look forward to advancing projects that lower the carbon intensity of our energy delivery assets in North America, said Justin Bird, CEO of Sempra Infrastructure.

"We have built our relation - ships with customers and the export credit agencies in Japan over the past decade and are excited to expand our relationship with JBIC as we continue developing projects in support of our net-zero business. This collabo- ration will help us continue advancing our mission of developing energy infra - structure that provides access to safe, secure and affordable energy to our global partners."

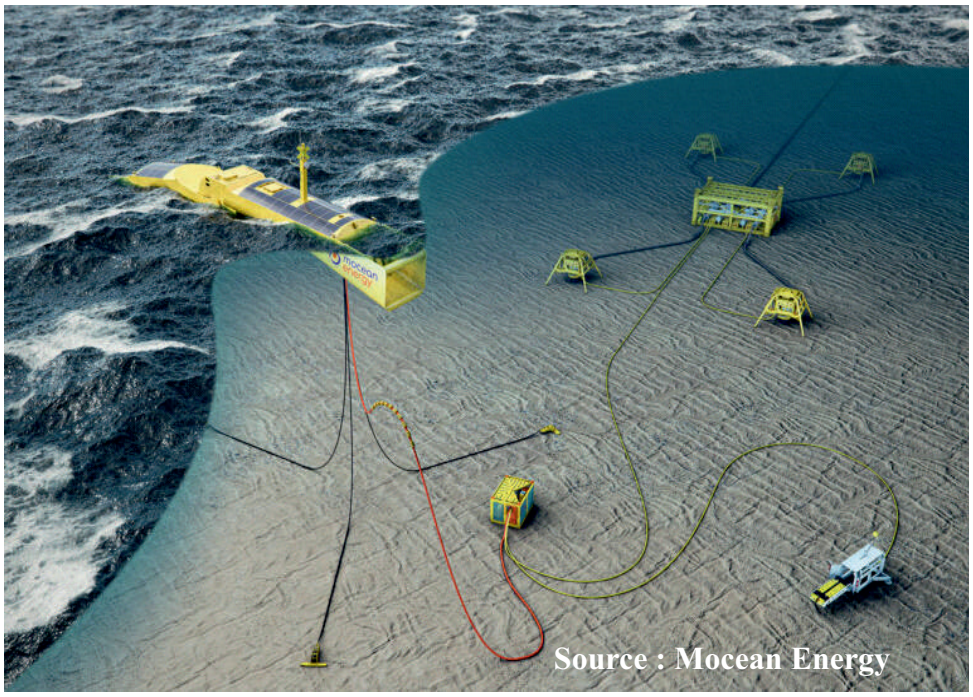
Courtesy:offshore energy

AFTER TOTAL ENERGIES AND PTTEP, SHELL JOINS WAVE POWER FOR SUBSEA EQUIPMENT PROJECT

Madan Kanagaraj - GME

Energy major Shell has joined the Renewables for Subsea Power (RSP) collaborative project which is powering subsea equipment off the coast of Orkney, Scotland, through a com--bination of wave power and subsea energy storage.

The £2 million demonstrator initiative, nearing 12 months in the water, has connected the Blue X wave energy converter built by Mocean Energy with Verlume's Halo underwater battery storage system.



Source : Mocean Energy

The fully operational project, located 5 kilometers east of Orkney Mainland, aims to show how green technologies can be combined to provide reliable low-carbon power and communications to subsea equipment, offering a cost-effective alternative to umbilical cables.

"With the Renewables for Subsea Power project being operational now for 10 months, I am proud of what has been achieved both technically and commercially to date, alongside the calibre of the industry partners that are involved," said Andy Martin, Chief Commercial Officer at Verlume.

"It is great that Shell is now joining the project, a company that we have been working with for some time. I am looking forward to continuing our close working relationship."

The new investment came in via the Shell Technology–Marine Renewable Program, a global R&D group pursuing the mission of finding, screening, testing, and developing marine renewable energy technologies to achieve more value with lower emissions and help build the critical energy infrastructure for the Blue Economy to grow and thrive.

Joining RSP offers Shell access to all data and results from the current test program, alongside a feasibility assessment of the use of RSP technology at a location of its choice.

The Orkney deployment is the third phase of the RSP project. In 2021, the consortium invested £1.6 million into phase two of the program which saw the integration of the core technologies in an onshore test environment at Verlume's operations facility in Aberdeen.

In 2021, Mocean Energy's Blue X prototype underwent a program of at-sea testing at the European Marine Energy Centre's (EMEC) Scapa Flow test site in Orkney, where it generated first power and gathered key data on machine performance and operation.

Shell joins project leads Mocean Energy and Verlume, alongside industry players Baker Hughes, Serica Energy, Harbour Energy, Transmark Subsea, PTTEP, Total Energies and the Net Zero Technology Centre (NZTC) in the project.

Courtesy: Marine insight

VICT PROGRAMME

R L Institute of Nautical Sciences conducted VICT programme for the candidates who have got sailing experience. Periodically we offer such courses for the deserving candidates. This time the VICT course commenced from 4 th December to 15 th December, 2023. Totally five students participated in the course. Our faculty members were the resource persons. There was an exit exam conducted by DG Shipping ,Mumbai. All the students cleared the exam and became eligible for the teaching profession in marine institutes

PASSING OUT BATCH OF ETO & GP RATING COURSE - AUGUST 2023

Cadets of ETO with Principal, Vice-Principal, Faculty Members and PRO

Cadets of GP Rating Section - A with Principal, Vice-Principal, Faculty Members, PRO and OIC

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- After 12 Months of training on board ship get Watch keeping certificate (DG Shipping)
- Sail as AB for 12 to 18 Months Bosun
- After 36 Months of Sea time appear for 2nd mate NCV/MEO Class IV NCV. Then sail as a III officer/IV-Engineer