LIGHTHOUSE
A Monthly Technical Magazine
Private Circulation Only
R.L. INSTITUTE OF NAUTICAL SCIENCES
TVR Nagar, Aruppukottai Road, Madurai - 625 022
Published by Marine Engineers and Navigators Association [MARENA]
VOYAGE 21 MARCH - 2021 CALL 03

EVERYTHING YOU NEED TO KNOW ABOUT LIFEBOATS

DINESH . T - B.TECH - IV

Important as lifeboats are, most crew and passengers on ships would rather they remained unused. However, they are a necessary last resort for those on board and over the years many have been grateful that they were provided.

Lifeboats have always been an integral part of marine safety procedures. Important for the vessel to have a mandated number of lifeboats on board that can be easily accessed and used in case of an emergency.

Lifeboats are basically small boats that are kept aboard a ship to carry out emergency abandonment, in case of mishaps such as man overboard, ship accidents, etc. occur. They primarily function as a device for swift and effective evacuation of people in distress from the ship and then aid them to a safe location.

Lifeboats are quickly deployed from ships with the help of davit systems which is fixed on the sides of the ship. They include a motor, unlike inflatable rafts and boats, which are smaller and slower. Inflatable lifeboats consist of an auto-inflation system that is quicker and more convenient for the people in distress. In this article, we tell you everything you need to know about lifeboats – types, release mechanisms, SOLAS requirements, safety equipment, and lifeboat maintenance. Read on to make the choicest and most preferable pick for your vessel.

Types of Lifeboats

According to SOLAS Regulations, each vessel should contain enough lifeboats to accommodate 37.5% of crew and passengers on either side. While inflatable or rigid liferafts must accommodate 25% on each side of the vessel.

Lifeboats are of three types, depending on their use, area of application and effectiveness:

• Open Lifeboats

As the name suggests, these lifeboats are open and have no roof. They are mostly manually propelled by oars. Sometimes one may also use a compression ignition engine to navigate the lifeboat.

However, due to the strict safety norms currently, open lifeboats have been discounted. They are very rarely seen in older ships.

LIGHTHOUSE

A Monthly Technical Magazine

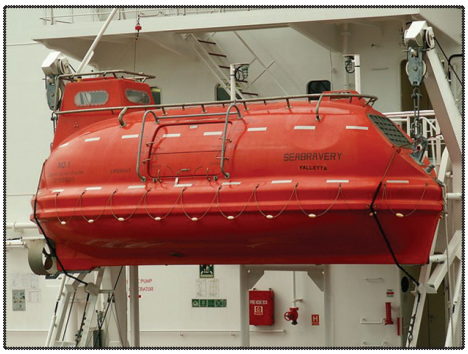
Published by Marine Engineers and Navigators Association [MARENA]

R.L. Institute of Nautical Sciences, Madurai.

VOYAGE 21 | CALL 03 | MARCH 2021

• Closed Lifeboats

Closed lifeboats are enclosed with a roof that shelters the people in it from rain, seawater currents, and strong winds. These boats, if toppled, stay upright on their own. These are further classified into Fully Enclosed Lifeboats and Partially Enclosed Lifeboats.



• Free Fall Lifeboats

Free Fall lifeboats are stored and launched from a downward sloping slipway for maximum clearance. They are heavier and stronger so as to sustain their impact with water when they drop directly when released from the vessel.

• Fireproof Lifeboats

These boats are used during oil spills and are heavily insulated to withstand flaming substances. The high sustenance nature allows it to envelop the boat against heat and flames for up to 8 minutes once waterborne.

• Hyperbaric Lifeboats

These boats consist of a sealable diving chamber with hatches large enough for people to enter and exit without undergoing decompression. The pressure vessel renders compressed breathing gas supply to raise the internal air pressure.

Now that we've seen the various types of lifeboats, let's see how their releasing mechanism works.

Lifeboat Release Mechanism

No matter the type of lifeboat, the most important consideration is to make sure it releases quickly and perfectly, so as to aid the people in distress as fast as possible. Hence, there are three different types of boat release mechanisms.

Other than these three common types, there are two additional advanced types of lifeboats namely, Fireproof Lifeboats and Hyperbaric Lifeboats.

CONTENTS

Printed at
Graphico, 172, VOC (Vakil new street)
Road, Madurai -1 Ph : 934410274

• On Load Mechanism

This type of mechanism focuses on releasing lifeboats from the wire, with crew members inside the boat. It is operated when the boat is about to touch the water, to ensure a smooth landing of the lifeboat without causing damage to the boat or harming the crew inside.

• Off-Load Mechanism

This type of mechanism releases lifeboats after the boat is fully on the sea. It includes a hydrostatic piston unit at its bottom which is connected to the operating lever. Once waterborne, the water pressure moves the lever up which will release the fall wire.

• Free Fall Lifeboat Release Mechanism

The Free Fall Lifeboat has a release mechanism where the lifeboat is launched from its stowed position by the operation of a lever inside the boat that releases it. It causes the boat to slide through the tilted ramp and on to the surface of the water.

There are several other advancements being made in lifeboats and release mechanisms. Having touched upon the topics of lifeboats and their release mechanisms, let's now look at what standards to adhere to when using the aforementioned.

SOLAS Regulations list some specific standards which every vessel shall observe with relation to lifeboats and their use. Let's take a look at these regulations below –

SOLAS Requirements for Lifeboats

According to the LSA codes and SOLAS, there is a set of requirements that ensure the safety on a lifeboat. These requirements are:

- The people onboard determine the capacity of the lifeboat required on a vessel. The number of lifeboats and liferafts should be enough to accommodate at least 125% of the number of passengers and crew. The lifeboat should not be less than 7.3 m in length. Every ship shall carry at least two lifeboats on either side of the ships; i.e. the port and the starboard.
- The lifeboat of a cargo ship with 20,000 GT must be capable of launching when the ship's speed is at 5 knots.
- All the equipment described under the SOLAS code must be carried in a lifeboat to ensure survival at sea. The equipment mainly includes freshwater, compass, distress signalling equipment, food and ration and first aid.
- The ship must carry a minimum of one rescue boat for rescue purposes in addition to the number of lifeboats. If more than one lifeboat is present onboard the ship, one of them can be designated as a rescue boat.
- The gravity davits must be held and slid down the lifeboat even when the ship is heeled at an angle of 15 degrees on either side. Ropes called gripes are used to hold the lifeboat with the cradle in the stowed position.
- Falls are the wires which lift and lower the lifeboat. A lifeboat should not descend at more than a speed of 36m/min and this speed is controlled by centrifugal brakes.
- With the boat loaded to its full capacity, the hoisting time for the boat to launch its launching appliance should not be less than 0.3 m/sec
- The Lifeboats are to be painted with an internationally-approved bright orange colour and the ship's call sign is to be printed on it.
- The lifeboat station, where safety awareness posters and launching procedures are posted must be easily accessible for all the crew members in at all times and under all circumstances.
- To ensure that the ship's crew members are capable of launching the boat in minimum time in case of an emergency, regular drills must be conducted.
- Apart from these requirements, lifeboats are required to have the necessary safety and survival equipment onboard as well.

Lifeboat Safety Equipment

A lifeboat alone is enough to aid people to a safe place, but there is certain basic life-safety equipment each boat should carry. Here is a list of this equipment:

• Compass

A lifeboat should contain a portable compass in order to check the direction in which it is to be steered. Carrying one renders mandatory as it is a

crucial component required to stay on course during rescue operations.

- **Signaling Mirror**

A signalling mirror is a device that reflects light to grab the attention of a vessel passing by or a rescue plane. Any reflective object can be used, but signal mirrors are designed to make targeting your flash a lot easier. They have a hole in the middle with a retro-reflective surface that allows you to train a bright indicator on your target, so you'll know for sure that you're shining in the right place.

- **Embarkation Ladder**

An embarkation ladder has two ropes fixed with wooden or metal steps and is used either to ascend or descend from one ship to another during an evacuation procedure. Also known as Pilot ladders, they need to be well-secured and stored at the strongest point midway along with the ship. They must cover the entire length from the ship's deck down to the water level and one must ensure that the ladder is kept clear of all ship discharges.

- **Dipper**

When stranded on a lifeboat, portable water is a very precious commodity which needs to be used sparingly to last longer. However, there are great chances of the water being spilt while pouring due to the swaying motion of the sea. A dipper helps minimize the spillage of lifeboat water.

- **First Aid Kit**

A medical kit consisting of basic medicines, bandages, and first aid required to treat minor injuries must be present on every lifeboat.

- **Food Rations**

The emergency ration is food stored in lifeboats and rescue boats in case the people on it have to stay for multiple days. The stored food ration includes wheat flour, glucose, soya fat, vitamins, and freshwater.

In addition to stocking the lifeboat completely, it is highly crucial the lifeboat is checked periodically and maintained properly in order to ensure its continued efficiency. Here's how to keep them functioning and efficiency of your lifeboats in check…

Maintenance Required in Lifeboats

The presence of lifeboats on board can make all the difference when it comes to quick evacuations at sea in case of emergencies. Hence, they need to be functioning perfectly at all times.

Here are some tips for seafarers and engineers on how to assure proper lifeboat maintenance at all times.

- To avoid rupture and damage, lifeboat maintenance must be done every 3 months by the ship staff to check and repair damages.
- The lifeboat hull must be checked regularly for any cracks and drills.
- The air support system in lifeboats should be checked. The pressure of air bottles must be verified so as to avoid the passage of toxic gases in it.
- The sprinkler system installed in lifeboats should be checked regularly to see if the valve functions properly and is not frozen or damaged.
- The engine of a lifeboat must be tested at least for 3 minutes every week.
- The lifeboat battery which provides lighting to the lifeboat and helps start the engine should be renewed every 2-3 years.

Endnote

Having covered everything you need to know about lifeboats, it is clear that they are the most basic and mandated safety equipment. From ensuring physical safety to guaranteeing the mental well-being of seafarers, they are etched into the marine safety culture.

At SHM Shipcare, as maritime stakeholders, we believe in putting safety first. With years of offerings and years of experience in safety solutions, we provide a wide range of lifeboats as well as the installation and refurbishment activities we offer. Take a look at our extensive range and choose the best safety equipment for you!

If you found this blog informative and interesting, go ahead and share it with a mariner, water adventurist or even a friend.

Courtesy shm safe seas safe shores

Printed at
Graphico, 172, VOC (Vakil new street)
Road, Madurai -1 Ph : 934410274

PIONEERING INDIAN WOMEN IN THE MARITIME WORLD

AKASH MUKHERJEE - B.TECH - III

Sonali Banerjee – India's First Woman Maritime Engineer.

The International Women's Day is a celebration of the strength and determination of women all across the world, a salute to their sheer talent, and recognition of the important roles they play in all our lives! We are especially proud of our female seafarers, who have broken innumerable boundaries and reached great heights in this field, as they journey to the four corners of the world!

Today, on the occasion of the International Women's Day, we take this opportunity to recognize and appreciate the tremendous work done by five women Bravehearts, Sonali Banerjee – India's first woman Maritime Officer, Reshma Nilofer Naha – India's first Maritime Pilot, Shubhangi Swaroop – India's first Naval Woman Pilot, Capt. Radhika Menon – the first woman in the world to win IMO's Award for Exceptional Bravery at Sea, and the seafarers of the INSV Tarini, India's first all-women crew to circumnavigate the globe.

These pioneers of the maritime industry have chartered their course for many years, braved many personal and professional storms, and fought many struggles to reach where they are today.

An indefatigable longing for adventure and the sea and the inspiration of other pioneering women in maritime across the world fueled their dreams and led them on this fascinating journey!

Here's a look at how women have slowly but surely become an integral part of what was once a male-dominated field.

Women in the Maritime Industry – A Brief History

Prior to 1988, there was very little scope for women seafarers to make a mark in the maritime industry. The first constructive step towards including them as an intrinsic part of the community was when the IMO started the global programme for the Integration of Women in the Maritime Sector. This was a radical decision that opened many doors and introduced countless opportunities for women in the maritime sector.

A number of progressive institutes from across the world started offering graduate and postgraduate courses for women seafarers and showed their commitment to the empowerment of women in the maritime industry. The World Maritime University in Sweden started with four women student graduates in 1985 and reached a whopping 79 in 2018, showing consistent growth in the number of female graduates over the years!

Other institutes like the WMU Women's Association and the IMO International Maritime Law Institute are also actively working towards the empowerment of women in the field. Today, women across the world and in India, are captaining ships, holding leading positions in the shipping industry, and making a successful mark upon the maritime world.

Shubhangi Swaroop – India's First Naval Pilot

Pioneering Women in the Maritime Sector in India

India's true acceptance of women into the heavily male-dominated maritime sector began in 1999, when Sonali Banerjee became the first Indian woman maritime engineer. Born and brought up in Allahabad, young Sonali had always felt a deep attraction for a seafaring life. The stories of her uncle's travels in the merchant navy further fueled her dream of seeing the world.

Defying societal pressure, and her own family's qualms, she enrolled in the Marine Engineering Research Institute at Kolkata, the only girl cadet in a batch of 1500 students! All along the way, she had to fight prejudice, skepticism, and doubt, but she successfully overcame all these challenges and emerged victorious! Her first job was working with Mobil Shipping Co. which took her across the ports of Sri Lanka, Singapore, Thailand, Australia, Fiji, and Hong Kong.

Life as a seafarer is always difficult, but even more so as a woman. There were several times when Sonali had to work twice as hard to prove herself and be twice as careful than her male colleagues. In an interview with The Times of India, she perfectly captured this sentiment, as she said, "While men can make small mistakes that are ignored, I have to be extra careful not to make one, for it will be noticed and commented upon. In every scenario, it was my determination and perseverance that pulled me through."

In 2001, Sonali made history when she became the first Indian woman to take control of the ship's machine room aboard a vessel of Mobil Shipping Co. Her path-breaking journey inspired countless young girls across India to follow their dreams and join the shipping industry!

Navigating a ship in the open sea is hard enough, for the smallest maneuver requires a lot of precision and judgement. But imagine doing this on a river! Navigating sharp twists and turns without running aground the sandy banks is no mean feat for a seafarer. This is what Reshma Nilofer does exceedingly well! The first woman river pilot in the world, she pilots ships from the sea to the Kolkata Port, through the treacherous bends of the Hooghly river.

Born in Chennai, Reshma fought against conservative mentalities to successfully graduate with a Bachelor's Degree in Nautical Science. She started working with the Kolkata Port Trust in 2011 and has since gone from strength to strength building her experience and shipping portfolio. Training to be a Grade III pilot, she will be the first and only Indian woman to become a river pilot, working shoulder to shoulder with 66 other river pilots. Given the uncertain draughts and depths of the Hooghly river, becoming a river pilot involves

Printed at
Graphico, 172, VOC (Vakil new street)
Road, Madurai -1 Ph : 934410274

Capt, Radhika Menon – World's First Woman Maritime Officer to Receive the IMO's International Award for Exceptional Bravery at Sea.

gruelling practice sessions, tons of hours on the ship, and rigorous hours, until navigating the course becomes a matter of instinct.

However, through all this, Reshma has always stayed self-aware and humble. A few months ago, we at SHM had the opportunity to talk to her and she said, "Women can be very sensitive and compassionate, but this cannot take us through life. We need to be tough emotionally. We have the freedom to excel and prove ourselves in every field. The only way to do this is to keep becoming a better version of yourself."

In 2017, Shubhangi Swaroop created history when she became the first woman in India to pilot an Indian Navy aircraft. This young maverick from Uttar Pradesh dreamed big ever since she was a kid. A national level gold medallist in Taekwondo and an avid diver, Shubhangi completed her BTech in Biotechnology from VIT University. However, becoming a part of the defence forces was always her first wish.

She enrolled into the Indian Naval Academy, Ezhimala, Kannur and became the first woman cadet to be recruited into the former man-only fighter units. Shubhangi will be flying a maritime reconnaissance aircraft to gather intel about the security and integrity of our maritime boundaries.

Praising her exceptional talent, Chief of Air Staff BS Dhanoa said that her performance during training was on par with other pilots despite the intense training and demanding nature of the job. And although she soars high, Shubhangi has her feet firmly on the ground. She understands that becoming the first woman naval pilot is not only a tremendous honour, but a tremendous responsibility as well!

Capt. Radhika Menon is a name that people all across the maritime industry associated with selfless bravery and undiluted courage. A true braveheart, she has been breaking barriers ever since she joined the maritime world and charting new horizons for the women of India.

Born in Kodungallur, Kerala, she started small, working as a radio and communications officer with the Shipping Corporation of India. Slowly, but surely, she climbed up the ranks, becoming a second mate, first mate, and finally became the first woman in India to captain MT Sampurna Swarajya, a merchant navy ship.

Her sheer persistence, determination, and resourcefulness were put to the test when she rescued seven fishermen in the Bay of Bengal, amidst storming seas and a thunderous squall. Her brave decision to save their lives earned her the International Award for Exceptional Bravery at Sea given by the IMO, the first woman in the world to receive this honour!

She has been a role model all her life for the women of the maritime industry in India and had worked consistently to encourage and simplify their path. Capt. Radhika is one of the founding members and pillars of the International Women Seafarers Foundation which endeavors to create opportunities for women in the maritime industry and solve any problems they might face.

Her strength and relentless determination make Capt. Radhika Menon a true inspiration for girls all over India!

Six young women broke the Internet and created history by becoming

The Bravehearts of the INSV Tarini – India's First All-Women Crew to Circumnavigate the Globe

the first all-women crew from India to circumnavigate the globe – the team of the INSV Tarini. Lieutenant Commander Vartika Joshi, Lieutenant Commanders P Swathi, B Aishwarya, and Pratibha Jamwal, and Lieutenants Payal Gupta and S Vijaya Devi are the six women officers of the Indian Navy who have successfully traveled across the seven seas, covering a distance of over 21,600 nautical miles in just 254 days!

These fearless young women have sailed across some of the most dangerous and tumultuous seas in the world, including stretches where waves reach as high as 10 feet on a normal day! The historic journey has been an incredible mixture of adventure, monotony, thrill, and boredom, said the crew, as they sailed the horizon. From witnessing incredible phenomena like bioluminescence and the Aurora Australis to calm hours spent on deck to surviving in rough seas, stormy conditions, and bitterly cold temperatures, these women stayed strong and tireless throughout!

It wasn't all smooth sailing though. They prepared rigorously for three years, notching several hours at sea, before setting out on this life-changing expedition. Driven by the motto, 'if you dream of something, go for it' the Tarini girls are living examples of what women can do as individuals and as a team in the world!

Endnote

It is truly a proud moment for all of us in the maritime industry as we read about the astounding achievements of these pioneering women. All of them have faced countless personal challenges and braved the world to be where they are right now, tearing down conventions and creating new milestones every day.

Courtesy:shm safe seas safe shores