



GLOBAL MERCY

In June 2021, Mercy Ships took delivery of the GLOBAL MERCY, the world's biggest civilian hospital ship. After more than 40 years operating ships bought on the second-hand market and transformed into hospital ships, Mercy Ships decided to have its first purpose-built ship constructed. The ten-year-long adventure was achieved with the assistance of the ferry building expert Stena RoRo.

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PHOTOS: MERCY SHIPS

Introducing Mercy Ships

Mercy Ships is a Christian non-profit humanitarian association providing free medical training, healthcare and surgery in countries requiring help. Back in 1978, the association's founder, Don Ste-

phens, bought a former Italian liner that became the hospital and missionary ship ANASTASIS. This first ship of the organisation was operated until 2007, alongside other smaller ships that joined and left the fleet over the decades. That year, after

seven years of work, Scandlines' former train ferry DRONNING INGRID was transformed on the River Tyne, sailing to Liberia as the AFRICA MERCY, a state-of-the-art civilian hospital ship, ready for her first mission.



A new ship

“As soon as we completed the AFRICA MERCY’s conversion we started to think about a new ship. We already had noticed things we wanted to do differently on our next ship, but we also consulted the ship’s first crews to have their feedback” explains Jim Paterson, Marine Executive Consultant in charge of the building of the GLOBAL MERCY. “Should we build our own ship? Should we buy it second hand? Or should we just drop the idea of a ship and build a barge that could be towed from port to port? After conducting feasibility studies, we decided for safety and security reasons to continue with the idea of a ship. We would this time design and build her, to avoid as many compromises we had to do with previous conversion projects”.

According to Per Westling, CEO of Stena RoRo, “A shipbroker, BRS, talked to me about the project for a new ship for Mercy Ships while we were attending a name-giving ceremony in South Korea, back in 2011. At first we worked on a conversion project, before focusing on a newbuilding design.”

In 2013, Mercy Ships signed an agreement with Stena RoRo to design, order, and oversee the construction of the ship in the chosen shipyard, state-owned CSSC’s Tianjin Xingang shipyard in China. While Mercy Ships came with the interior layout concept, the ship’s technical part is based on a design Stena had previously developed for its own fleet but didn’t use: the

Seabird project. It had been superseded by the E-Flexer successful series of ro-paxes, but could be used as a basis for other projects. Drawing on the expertise of Deltamarin, plans were heavily modified to comply with the specifications provided by Mercy Ships. “At the beginning it allowed us to have a starting point from which to work, but we changed it a lot” explains Per Westling. The GLOBAL MERCY was for instance optimized for a 12-knot service speed, and slightly shortened. “While working on the design of the GLOBAL MERCY, the E-Flexer project was speeding up, so we had a workforce already available. The GLOBAL MERCY was the first passenger ship built in China under our supervision, so the whole work of selecting suppliers for the ship helped us save time in finding the right ones for the E-Flexers a few months later. We kept both projects separated, however. When looking for the right shipyard for the E-Flexers, at that time we had in mind to build four plus an option for another four and so we quickly came to the conclusion that the Tianjin Xingang shipyard had already enough to deal with the GLOBAL MERCY, so we looked at other options, and we chose AVIC International in Weihai, China”.

At first it was expected to be completed in 2017, but the delivery got delayed. “The project was so unique and different to what this Chinese shipyard was used to doing. Stena RoRo had warned us when we signed the contract that it probably could be significantly delayed, but we were fine with that. Our priority was quality over time, we were not much in rush” explains Jim Paterson. “There were a lot of challenges. The shipyard had only built one pair of passenger ships a decade before (the ZHONG TIE BO HAI 1 HAO & 2 HAO, also diesel-electric and ABB pod-propelled vessels). They had to change the steel they were used to employing when building cargo ships. Weight management was more important for us than for their usual clients. Building a privately owned hospital ship was also totally new; it had actually never been done anywhere. Complying with the Safe Return To Port (SRtP) regulation and finding the right propulsion pods were a challenge too” remember Jim Patterson. “At some point, the workforce participating in building the GLOBAL MERCY was very low, around 50 people. This coincided with some shipyard management changes. Also, the covid pandemic came and heavily



Jim Paterson is Marine Executive Consultant at Mercy Ships, where he has been since the late 1980s, first as Chief Engineer. He was manager of the GLOBAL MERCY project through the entire design/construction process up to the maiden voyage.



Per Westling is CEO of Stena RoRo since 2011.



Operating room.

impacted the supply chain. But in the last one and a half years, we were glad to see the building quickly moving forward". In June 2021, the ship was finally delivered, fully paid, which is rare in the industry. "We were pleased the shipyard didn't give up", Per Westling told Shippax. "Everyone involved in this project engaged themselves a lot ; there was a lot of pride in this delivery, it was unique in many aspects".

At the end of July 2021, the GLOBAL MERCY sailed bound for Europe, where she arrived the next month. She spent the winter alongside in Antwerp, Rotterdam and the Canary Islands for final outfitting and presentation to the public. She is expected to set sail bound for Senegal in May 2022 and fully start field operations in January 2023.

Specific technical specifications

On the technical side, the highly distinctive operations Mercy Ships performs require specifications and features other ships rarely have. One of the more unusual aspects is that the ship is expected to sail about two-to-four weeks a year, remaining on average ten months in operation in ports in countries requiring medical assistance (without cold ironing) and 1-2 months in a shipyard for maintenance. Electrical propulsion with two ABB azipods was chosen to avoid the fitting and maintenance of engines only used for propulsion for a few days a year. Compared to the ship's size, the propulsion power is quite low: the GLOBAL MERCY's service speed is 12 knots (although capable of more). Power is produced by four 6L32

Wärtsilä engines, located in two separate rooms to comply with SRtP regulation. While alongside, only one engine is required. The low consumption and high tank capacity gives the vessel four to six months' autonomy between bunkering operations. Special attention has been paid to the hull's antifouling paint due to the long inactivity. Stena chose I-tech's Selektope to protect the underwater hull. The ship will also have onboard a professional diving team (having also other functions onboard) to clean the ship's sea chests when required.

The ship is fitted with a high air-conditioning capacity due to its operation in warm areas of the world and the need to cool down most of the internal spaces. It also will need to produce up to 30 tons of water daily, used for laundry, technical and cleaning purposes.

State of the art hospital

Where a ferry would have one of its main garage (decks 3 and 4), the GLOBAL MERCY has a state-of-the-art hospital and training facility, spread across two levels. On deck 3 is the surgical heart of the hospital: the vessel is fitted with six operation rooms (there are five onboard the AFRICA MERCY). To assist the surgical operations, a radiology room (including X-Ray and CT-Scan), a pharmacy, a laboratory, pre-op and recovery room and a sterilization room have been installed.

Mercy Ships also aims to provide training: there is a simulation lab including virtual and augmented reality, care spaces and mannequins on deck 4. Many rooms



A CT-scan.

are also dedicated to day medical care, there being an ophthalmologist, dentist - for crew only onboard as well as local patients - and a gynecologist. 200 patients can be welcomed aboard, 90 occupying ordinary care beds, seven in the intensive care unit, and 102 in acute care beds. In comparison with the AFRICA MERCY on which a large proportion of recovering patients are living in shore accommodations, visiting the ship for the medical care only, the GLOBAL MERCY hosts patients and relatives.

Community life

In terms of capacity, the vessel has been designed for distinct configurations. While in navigation mode, the GLOBAL MERCY can accommodate up to 500 people onboard and this is reflected in the capacity of the life-saving equipment, comprising lifeboats and liferafts. When in operation, only when alongside, she is able to host up to 641 permanent crew members and relatives, 200 day-crew members and 200 patients and their families overnight.

Volunteers sometimes come with their families. Thus, the ship is equipped with a school located on deck 10 able to accommodate up to 120 children and teenagers (but most of the time between 60 and 70. Lessons are given there by level, from kindergarten to highschool, each one having its dedicated classroom.

While the patients and their family have their meals in the hospital, permanent and day crew members get their meals in the main dining room, occupying a third of deck 7. Nearly 3,000 meals a day will be served here when the ship will be in field service. Forward of the main dining room is the International Lounge, the ship's auditorium where weekly meetings and events or presentations are held. During the day, crew members can have a break in the café, located on decks 8 and 9 aft. Immediately forward of the café on deck 8, the shop, a post office, a bank office and a hairdresser is located. Many lounges with different purposes (meeting, family, training) are placed around the ship. There is also a chapel, a library, a gym and a pool. The GLOBAL MERCY has four main types of cabins onboard: single and double (shared) cabins, couple cabins and family cabins.

Future plans

While equipping the GLOBAL MERCY's medical facilities, Mercy Ships reintroduced AFRICA MERCY in field service after more than two years of being stopped due to the COVID pandemic. "We are currently setting the details with a South African shipyard to perform a major



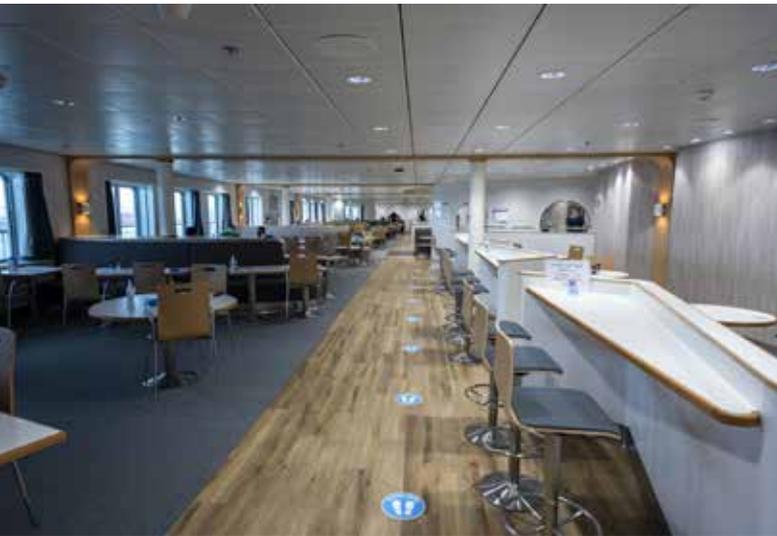
Ward.



Class room.



Academy.



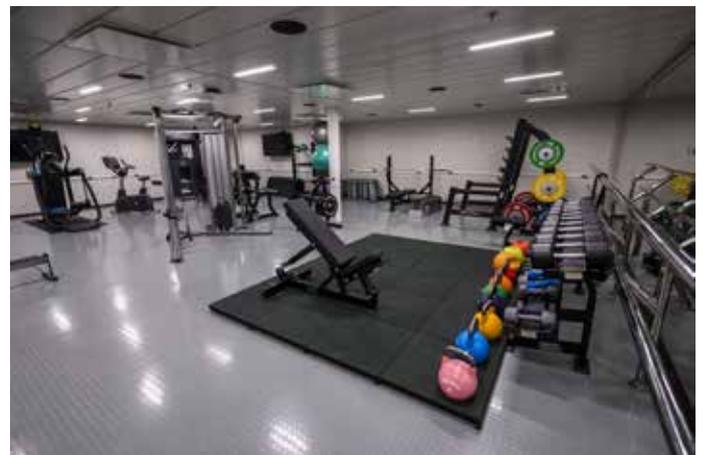
Main dining room on starboard side.



Café.



Chapel.



Gym.

refit of the AFRICA MERCY after she completes her current mission in Senegal at the end of 2022. The project is to increase the lifetime of the ship by 15 years. The main work would be the remodeling of the galley” explains Jim Paterson.

“This project is a good example of Stenability”, Per Westling says. “It’s in our DNA and we are open to discuss any project where our competence can contribute to a successful outcome for our clients. We would be glad to assist Mercy Ships further in any project they might come up with, including building a sistership.”

Jim Paterson adds that “of course a new ship is part of Mercy Ships internal discussions, just as it was when we were working to convert AFRICA MERCY back in 2007. We know it takes time and we need to anticipate the future. If we start within five years to work on a newbuilding, in China for instance, we would be able to use all the lessons we learnt from the GLOBAL MERCY. But we are realistic; the current worldwide situation makes it difficult to order a ship, particularly in China” he concludes. ■



International lounge.

ANNONS