

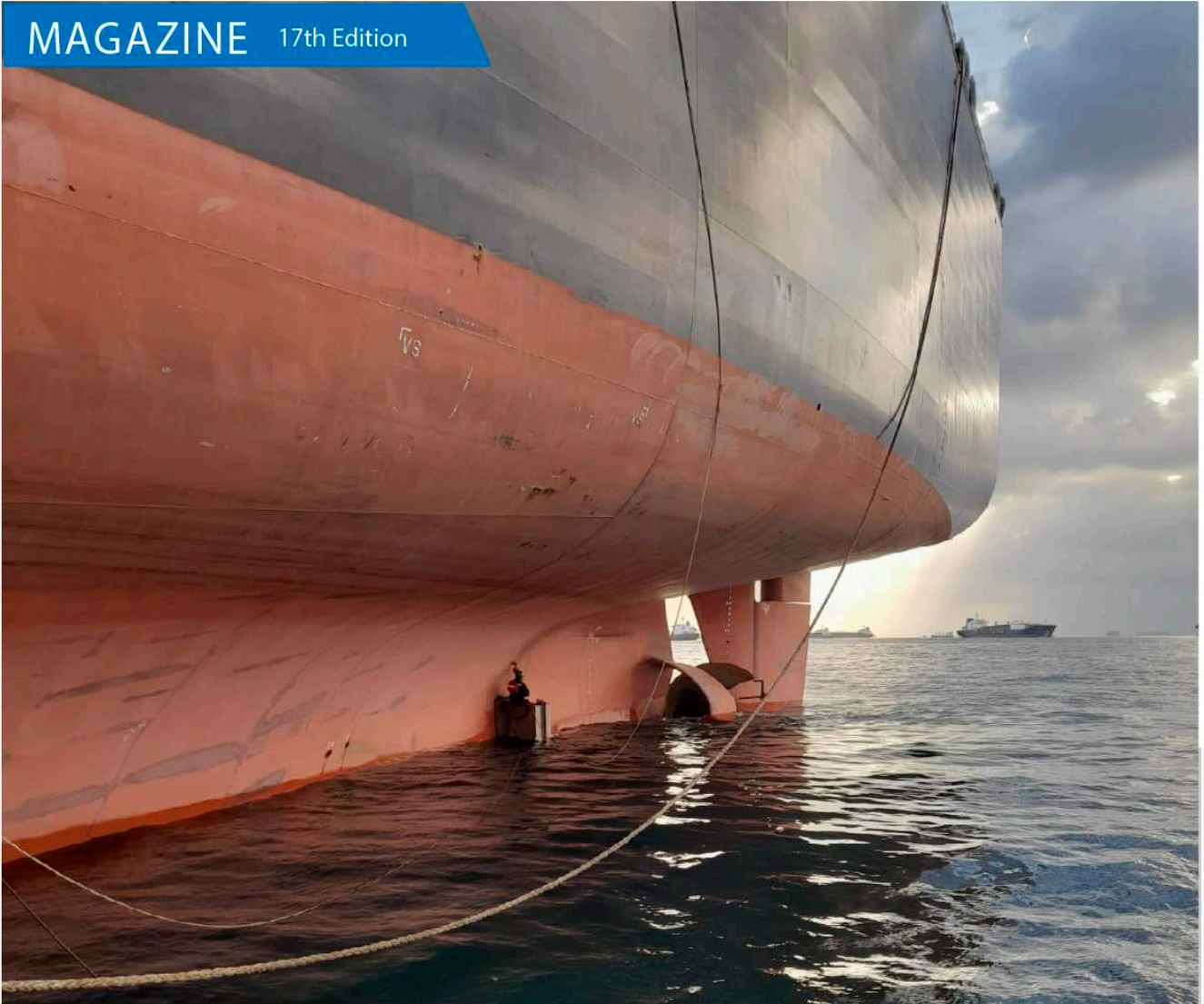


FEBRUARY /2022

TALLERES INDUSTRIALES, S.A.

24/7 SHIP REPAIRS AND MARINE SOLUTIONS

MAGAZINE 17th Edition



MAIN FEATURES

SCRUBBER PIPE RENEWAL USING OPEN TOP COFFERDAM

EGCS Overboard Spool Pipe
renewal at Balboa anchorage
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AMAZING UNDERWATER JOBS

Size doesn't matter
PAGE 7

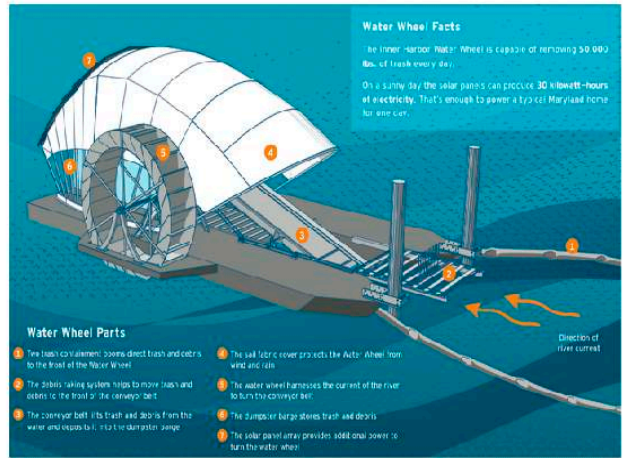
RESTORATION OF A FUNNEL STRUCTURE AT ANCHORAGE

Funnel reconstructions
against adverse weather
conditions and Covid-19
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“FABRICATING THE HULL STRUCTURE OF THE FIRST RIVER TRASH COLLECTOR DEVICE IN PANAMA”



Talleres Industriales has taken up the challenge to build the floating structure of a Water Wheel Powered River Trash collector device which is able to collect and remove trash and debris from rivers. Talleres has joined the Marea Verde Association team leading this project with the goal of testing new technologies that help reduce trash pollution in rivers, coasts, and oceans.

The water wheel river trash collector device will be the first one in Panama relying exclusively on renewable energy sources. It is modeled after the Mr. Trash Wheel family of garbage collectors in the Baltimore Harbor.

The Panama trash collector system will efficiently contain and collect debris at a single point in the Juan Díaz river, preventing it from reaching and affecting the oceans. We are proud and honored to assist the Marea Verde Association team on this innovative and unique effort supporting the well-being of our society and the environment.

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 talleresindustriales-shiprepairs



“JOINING THE MAREA VERDE ASSOCIATION TEAM TO CLEAN UP OUR OCEANS”

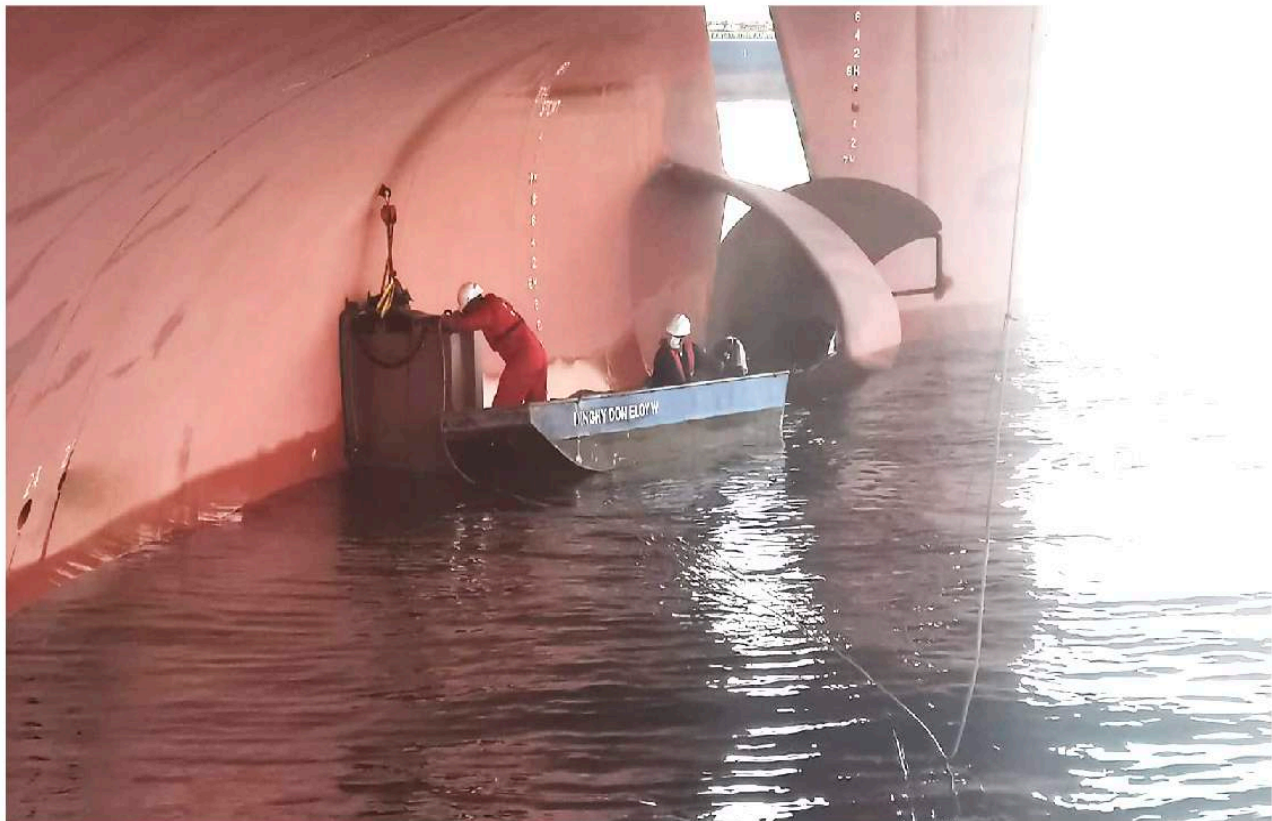


Marea Verde was created with the main objective of helping solve the waste pollution problem on our Panamanian rivers and coasts, which continues to increase day by day, endangering the health of our seas and mangroves. Marea Verde is led by Mirei Endara de Heras, an enthusiastic and devoted professional who has invested her time in conservation initiatives and has promoted environmentally responsible citizen action.

To ensure that the efforts and resources invested in cleaning and creating awareness have a greater impact in the future, it is necessary to pursue solutions that prevent waste contamination from reaching our rivers and therefore our coasts, beaches, and mangroves. Talleres has proudly joined Marea Verde to develop a new, integrated, visually attractive engineering device, to collect garbage and debris from our rivers. This project is being accomplished along with Clearwater Mills from Baltimore, USA as well as other team members, and it is expected to be on site within the next months and ready to help clean our oceans.

This device is one of eight projects of the Clean Currents Coalition (cleancurrentscoalition.org), a network of innovators promoting projects to fight against plastic waste around the world supported by the Benioff Ocean Initiative and the Coca Cola Foundation.

EGCS OVERBOARD SPOOL PIPE RENEWAL USING OPEN TOP COFFERDAM



Talleres maintains its strategic focus on taking unconventional challenges using innovative solutions. We have become specialists on scrubber pipe renewals and repairs in the Panama Canal Area. In this case we assisted a 53,928 tons LPG tanker to renew an Exhaust Gas Cleaning Systems (EGCS) with the use of a custom made "Open type Cofferdam".

As usual, the job had to be carried out on an urgent basis to avoid loss of hire for our client. Open type Cofferdams are not the most common method used to perform this type of permanent repair, but is the only one which is highly effective, especially when



it comes to complying with makers painting scheme and avoiding the new pipe to get wasted again due to non-proper preparation.



Job started as it usually does, on a Sunday morning, a day which is considered by the shipping industry as any other day of the week. Our diving team and engineers were waiting for it at Balboa anchorage and boarded on arrival.

Divers immediately entered in action once all safety protocols were met and assessing the custom-made cofferdam. A 15-foot shape open cofferdam was rigged, fitted, and secured to host Talleres' engineers and painters. The same was installed on the port aft shape side of vessel to cover the scrubber outlet.



INSIDE VIEW



PIPE FITTED IN POSITION



NDT TESTING



INSIDE COFFERDAM

Once the cofferdam was secured, fitters cropped the overside pipe from hull while a new pipe was being prefabricated in our workshop. Everything turned up perfectly and fitted exactly as to the millimeter. Once pipe and brackets were fitted, class approved welders followed with approved procedures to comply with class and makers requirements. All internal welding was tested by NDT contractor with positive results. After the entire pipe renewal was completed internally, painters got inside the cofferdam complying with all safety measurements and started to apply the painting scheme which consisted of two coats of Glass Flake coating, anti-Corrosive, and anti-Fouling coating.

This is a very sensitive process which took around 3 days to perform surface preparation, application, and curing time. At the same time, an air heater was arranged to speed up the process of paint drying.

After jobs were completed, cofferdam was removed, and final touch ups were completed underwater. Mission was accomplished as per all stakeholder's requirements and that led to a total satisfaction result. Panama is a major worldwide Hub for ship repairs and has all the necessary conditions and resources to comply to your needs with innovative solutions.

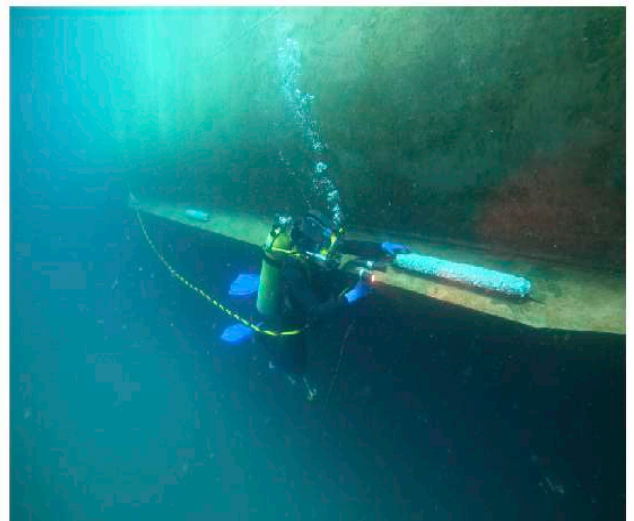


“SIZE DOES NOT MATTER”



During our half century journey, we have seen how vessels visiting our waterways have gotten bigger. During the first four decades in a slower pace since the Panama Canal have always got a limiting factor – Panamax size vessels.

Nevertheless, the last decade as the canal expanded, we have seen bigger and newer ships with up-to-date technology and propulsion systems. We have adapted to these huge new structures and equipped ourselves to keep these bigger vessels in good shape responding and performing fast to achieve their deadlines and keep the world economy going.





THREE BASIC BUT CRUCIAL SAFETY TIPS



1. Encourage awareness, staying alert in the work place.
2. Wear recommended safety equipment, including helmets, shoes, goggles.
3. Report any illness. Do not work while injured, tired, or nauseous.

WHO IS WHO IN OUR TEAM



Bertram Austin
Balboa, Operations and Logistics Coordinator
Expertise – Coordination and Logistics



Dairo Santamaria
Cristobal, Operations and Logistics Coordinator
Expertise - Coordination and Logistics



Jaime Robinson
Project Supervisor
Expertise - Pollution Control, Tank Cleaning, Painting & Blasting, Scaffolding



Carlos Atencio
Safety and Health Supervisor
Expertise – Safety & Health

REWINDING MOTORS AND ALTERNATORS 24/7



For more than 50 years, Talleres Industriales has been involved in the rewinding industry, from DC & AC electric motors to high voltage alternators and generators. Our services include rewinding of all types to AC and DC motors, generators, alternators, and different types of transformers of all sizes.

“DNV APPROVED WELDING WORKSHOP”

This recognized certificate proves that Talleres Industriales SA operates with certified production facilities and working procedures as well as qualified personnel.



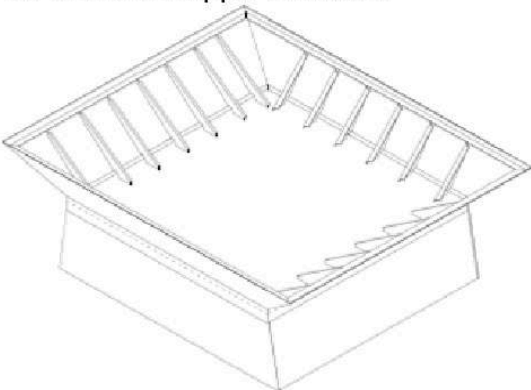
To guarantee high quality jobs on all the important parts of ships, maritime installations, and their components, DNV rules require that welding jobs be carried out by approved companies or workshops.

The DNV rules are based on relevant international standards, best practices, and long-standing experience of experts. Talleres was audited and recertified two months ago in our continuous pursue of excellence.

FUNNEL RECONSTRUCTIONS AGAINST ADVERSE WEATHER CONDITIONS AND COVID-19 OUTBREAK



We are always looking for new challenges. In this case we performed a unique repair on a funnel structure of an LPG tanker at the Atlantic entrance of the Panama Canal. On this new task, Talleres was invited to inspect one of our clients' vessels which had some structural deficiencies on the funnel upper structure.





After the inspection was completed, it was determined that close to 90% of the funnel upper platform and the complete crown had to be renewed to comply with class requirements. As you can imagine, this is a very complex repair when it comes to doing it afloat, during rainy season, and dealing with a new covid-19 wave. It was agreed with ship owner that the job was going to be performed when this lady came back from discharging its cargo. However, job started almost immediately in our workshop, prefabricating the funnel top structure with the combination of drawings and actual measurements plus templates taken onboard during the initial inspection.



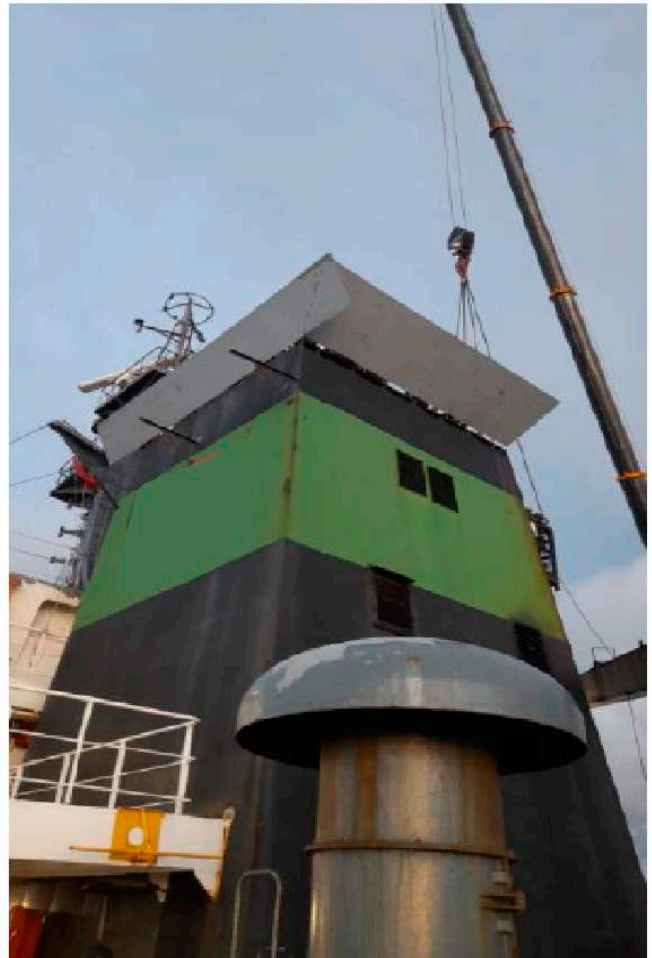
This prefabrication helped us optimize time, which was going to be needed due to upcoming, unexpected setbacks. Once the vessel arrived at Cristobal layby berth for repairs, Talleres mobilized all its resources, materials, and equipment's to start removing the damaged steel sections. Shore power was connected to vessel to shut off vessel generators to allow safe working conditions and avoid a heated environment. Hanging staging was installed around the funnel and the deteriorated structure was cropped and removed in sections with the use of our shore crane. However, during the early stage of the project, weather became our enemy.





The nonstop rain made this project increase in complexity, making it a sensitive situation for ship managers, charters, and cargo owners. This persistent rainy condition did not give us a break. Due to these delays, we lost our lay berth window and had to complete the job at anchorage, adding an additional logistic challenge to the project.

During the insertion of new steel sections, we found some additional areas that had to be renewed as well such as brackets, drain boxes, and ventilation pipes, making our "photo-finish" ending even more stressful for everyone involved.



Finally, job was completed to the satisfaction of class and parties involved.

This is another testimony that we will never give up and we will work along with our clients to achieve our mutual goals.



MARINE SOLUTIONS – ROV HULL CLEANING AT BALBOA ANCHORAGE



HULLWIPER TECHNOLOGY
ITS OUT OF THIS WORLD

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TALLERES ENVIRONMENTAL POLICY AND GOVERNANCE

To contribute to the protection of the earth and its environment, Talleres Industriales has the following environmental policies:

- **Ensure** that our floating equipment, workshops, and resources do not generate contamination in the ecosystems and waters where they operate.
- **Comply** with all environmental regulations applicable to our industry and enforce new ones that we will discover along the path.
- **Reduce** waste, promote recycling, and limit energy consumption.
- **Train** all our staff in our environmental program to allow them to contribute and participate in continuous improvement.
- **Communicate** our environmental commitment and efforts to our clients, staff, and community.



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