



TALLERES INDUSTRIALES, S.A.

24/7 SHIP REPAIRS AND MARINE SOLUTIONS

MAGAZINE



MAIN FEATURES

SUPPORTING THE MINING INDUSTRY IN PANAMA

Structural Repairs to an Electric Rope Shovel
P&H 4100 dipper
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SETTING THE STANDARD FOR RUDDER REPAIRS

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PREPARING VESSELS FOR SAFE CANAL TRANSIT

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REWINDING SERVICES



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. Talleres Industriales, as a member of the Electrical Apparatus Service Association (EASA), uses established rewinding techniques and quality products to increase and enhance a unit's efficiency and durability.

Our services include repairs of all types to AC and DC motors, generators, alternators, and different types of transformers of all sizes.



www.talleresindustriales.com



@talleres_industriales



talleresindustriales-shiprepairs

EDITORIAL



Picture - David Jones (HW), Salomon Moreno V(TI), Lino Arosemena (TI), Robert Anderson (HW), Wilhelm Alberts (HW), Rodrigo Lara (TI)

THE GREEN JOURNEY WITH HULLWIPER

Our relationship with HullWiper, owner of the eco-friendly Remotely Operated Vehicle (ROV) underwater hull cleaning system, began in late 2017. After meetings in New York and Dubai - and many email exchanges - we signed a contract and the manufacturing of the new machine began in 2018. In late 2019, the ROV and all its supporting equipment arrived in Panama. With help of HullWiper developer Robert Anderson and technicians David Jones and Wilhelm Alberts, we set up HullWiper's first operational base in South America. Our engineers and divers were given full training in the use of this green technology, which is the future of underwater hull cleaning.

The ROV collects marine fouling removed from hulls, rather than releasing them into and polluting port waters, risking the spread of harmful invasive marine species. Captured residues are pumped into a filter onboard the unit, then deposited into dedicated drums onshore which are collected by a locally approved environmental waste disposal company.

Unlike traditional methods, like divers using brushes or karts, HullWiper sprays adjustable high-pressure seawater jets directly onto a ship's hull to dislodge fouling without scrubbing, harsh chemicals, or abrasive materials. The use of high-pressure jets also avoids damaging ships' expensive antifouling coatings. Cleaning can be done day or night, in most weather conditions, even whilst cargo or bunker fuel operations are underway.

Ship owners and operators benefit from a foul-free hull resulting in improved vessel speed and boosting fuel consumption efficiency, whilst avoiding the cost of recoating in case of damage. We look forward to a lasting partnership with HullWiper to bring you safe, affordable, and environmentally hull cleaning solutions. We are committed to bringing the latest state-of-the-art green technologies to Panama.

STRUCTURAL REPAIRS TO AN ELECTRIC ROPE SHOVEL P&H 4100 DIPPER



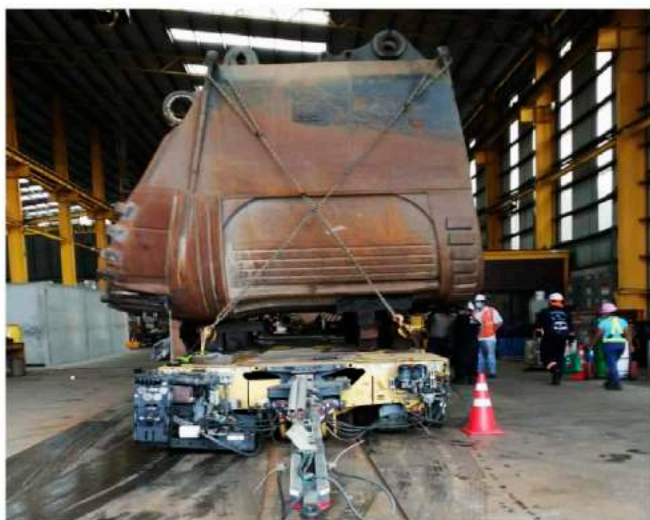
Talleres Industriales has been collaborating very closely with Minera Panama to support them on the maintenance and repairs of the components used in everyday production operations, keeping the focus on reducing the impact (logistic & economic) of the 'out of service' periods.

This high quality and specialized jobs include welding, machining, mechanical, ndt, electrical, blasting & painting. Different components received at our main workshop facilities are subjected to several tests and repairs. This include corrective maintenance processes, in order to speed up their return to regular operations under new repaired conditions.

Providing our high-quality team of technicians, welders, machinists, mechanics and painters, we assure this goal becomes reality, for the component

to return to the operation of this important industry in Panama. The size of the component does not matter, as in the case of the Dipper for an Electric Rope Shovel P&H 4100.





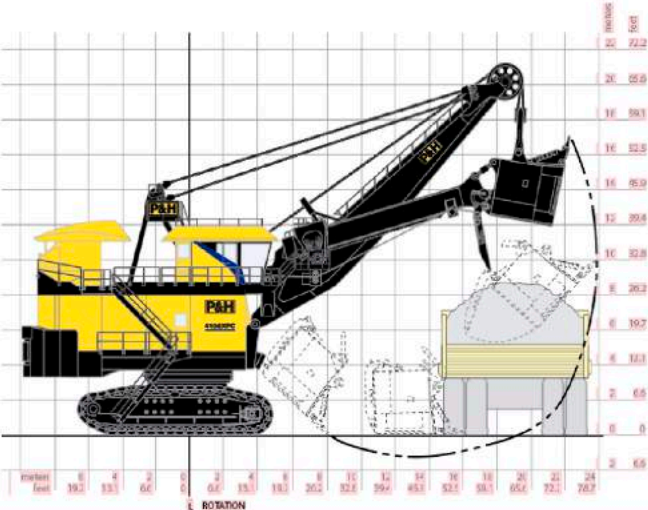
For this big unit, which nominal payload is 81.6 MT and its nominal dipper capacity is 45.9 m³, a major logistical challenge was to overcome the mobilization of the dipper from the mine site to our workshop. The main scope of the work was to repair the crawler shoes and perform the repair & rebuilding of the lip, to allow the installation of new adapters for the lip conversion to the ESCO Mining Teeth system "Whisler Plus Adapter System". Basically, a safer, faster, hammerless system for the quickest change-outs in the industry.





Talleres provided all the infrastructure facilities, equipment, and ordered specialized consumables from overseas to perform the job in the fastest possible time against all limitations from Covid restrictions and protocols.

With this important job, once again, Talleres Industriales emphasized our commitment with our "customer focus" vision, achieving during the whole process high quality standards, and protecting the safety and health of our team to warrant a long-term sustainable business.



WATERBLASTING SOLUTIONS GREEN TECHNOLOGY



Waterblasting is a solution that allows the integrity of the surface by high-pressure water cleaning.

The use of high-pressure water blasting, for surface preparation and surface cleaning, can eliminate rust, old coatings, product residue or even damaged concrete prior to re-pouring. In addition, it ensures proper adhesion of the coating to the original surface.

Talleres Industriales has invested in state of the art HPWJ X-Series diesel water blasters with working pressures from 5,000 to 40,000 psi (350 to 2750

are easy to mobilize to terminals and onboard vessels at the Cristobal and Balboa anchorages. We can also use this equipment for pipes and cargo tank cleaning.



WHO IS WHO IN OUR TEAM



Luis Ariano
Chief Financial Officer
Responsible of the optimization and control of the financial resources of Talleres Industriales SA



Manuel De León
Human Talent Manager
Responsible for the attraction, selection, training, assessment, and rewarding of Talleres' employees



Jenny Patiño
Internal Audit Manager
Responsible for identifying important risks within the company and highlighting where improvements are necessary for the best interest of all of Talleres' stakeholders



Alvaro Smith
Health and Safety Manager
Responsible for managing the safety culture that prevents accidents, injuries, and work-related illnesses to all our employees and stakeholders



AMERICAN SALVAGE ASSOCIATION

The American Salvage Association (ASA) was created as an association of professional salvors in order to provide an identity and assist in professionalizing the United States' marine salvage and firefighting response capability.

Talleres Industriales SA is a proud member of the American Salvage Association in the Republic of Panama. Our CEO, Lino Arosemena is the Latin American Chapter Chairman, apart from having the mission to increase membership through Latin Americas Countries, held the responsibility to work very closely with the maritime authorities in protecting life, the environment, and property from the consequences of the perils of water transportation.

Through our workshop's divisions and specialized equipment, we have been assisting ASA members in projects, from wreck removals and salvage operations, to lightering of dry and liquid cargo projects, in Panama and Latin America for the last two decades.

EXPERTS ON DRY HABITATS FOR RUDDER REPAIRS



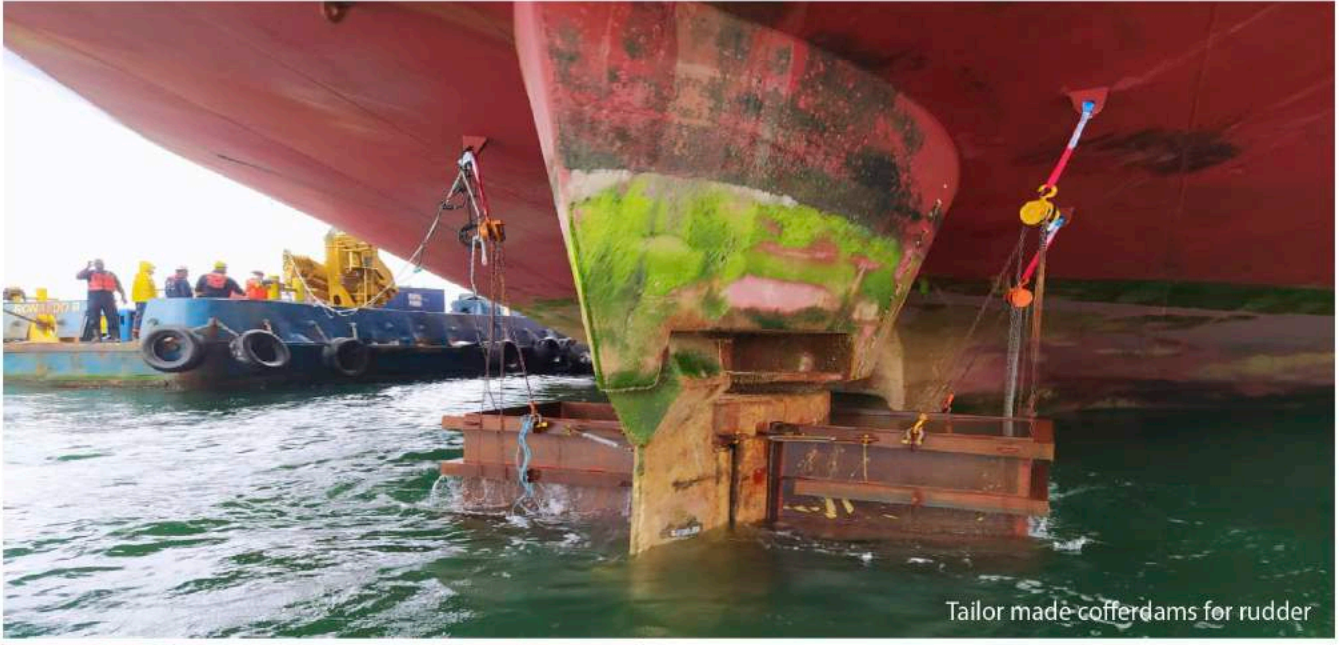
Full box cofferdam for rudder

Talleres has been performing outside box solutions for complex repairs since 1969 in Latin America setting the standard. From removal of rudders at anchorage or alongside berths and performing afloat permanent repairs with the use of external cofferdam with Class approved welding procedures. We have made a wide range of rudder cofferdams, from a full box cofferdam for the enclosure of a complete rudder, to a tailor-made cofferdam for specific sections to fix a specific area and shape of the blade, saving time by avoiding the vessel to deviate to a dry dock for repairs.

Accumulated stresses, loss of buoyancy, vibrations, fatigue welding, corrosion or cavitations due to lack of cathodic protection can lead to cracks in the rudder blade structures. Fractures in rudder plating and weld should be carefully examined on time since serious fractures in rudder plating may cause loss of the complete blade.

We offer class approved hull repairs combining both underwater cofferdam installation and class approved dry welding.





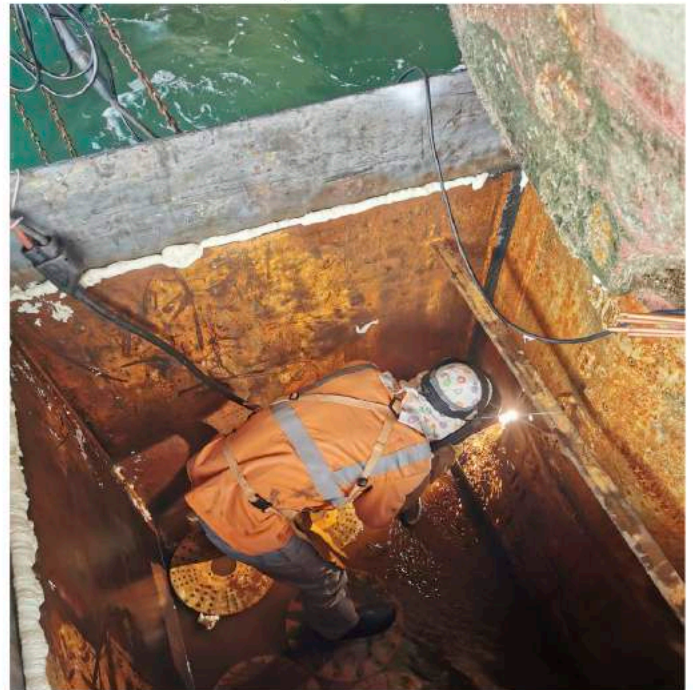
Tailor made cofferdams for rudder



In the shipping industry, having an alternative path is a must, especially in an era full of restrictions, uncertainty, and no time to waste. Providing a backup plan solution for our clients is our mission. Panama has a lack of lay berths to perform repairs and therefore we have made our anchorage into lay berth facilities and workshops.

Our divers and dry welders work as a team to perform these permanent repairs at the highest quality and safety standards. Some types of fractures in the rudder blade may require a different solution to grinding and welding which depending on the area could be done with class approved wet welders.

But when it comes to bigger repairs then an insert must be installed. With a cofferdam installed around the fracture or damage, our team along with a class surveyor can inspect the area, see the extension of the damage in a dry habitat and perform plate renewals on the rudder blade plating as needed.



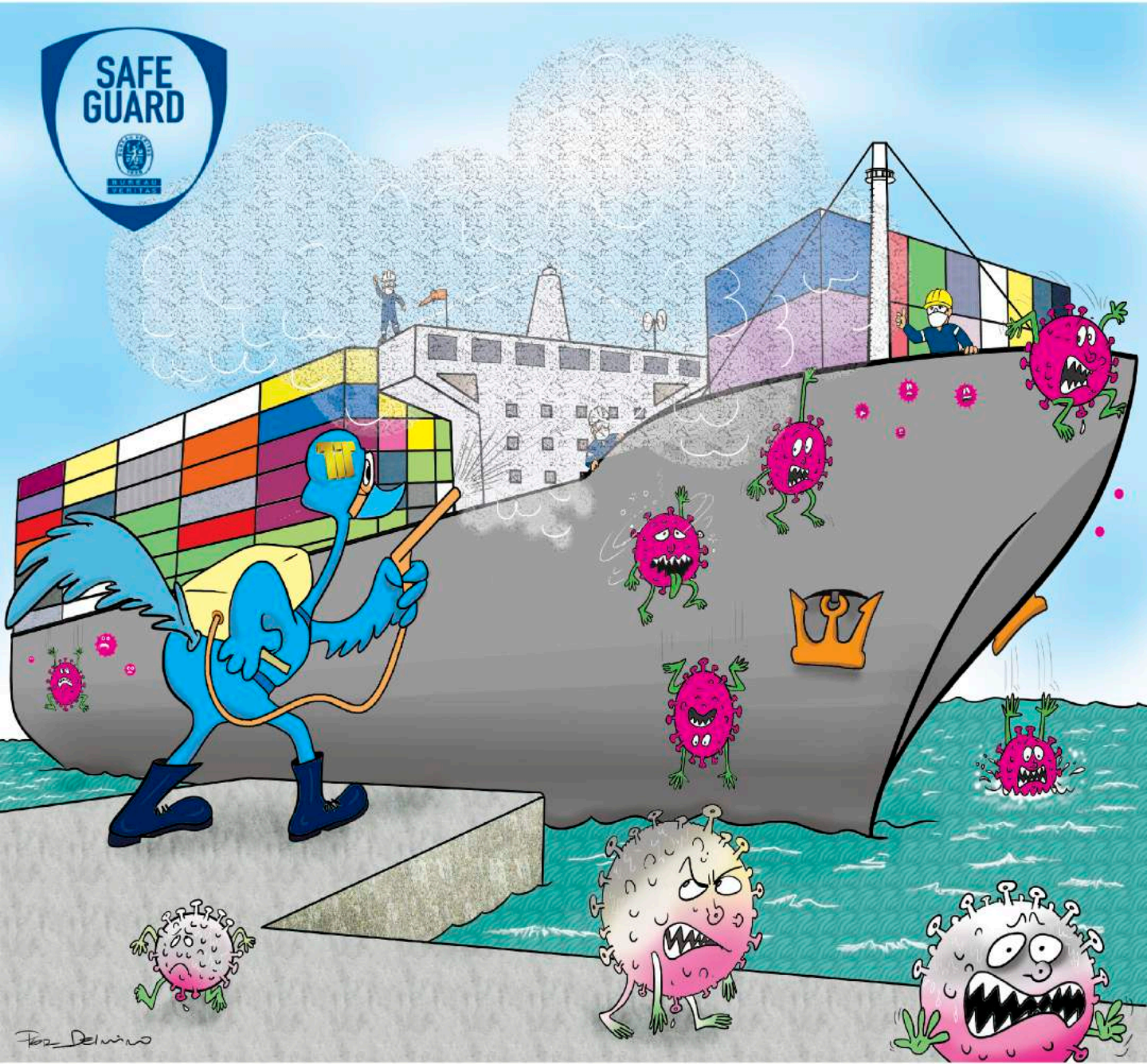
CRANE BARGE SERVICES AT THE BALBOA ANCHORAGE



The lack of lay berth facilities for the shipping industry at both sides of the Canal have forced us to invest in deck barges and to supply boats to perform jobs at anchor, while vessels are waiting for the Panama Canal Transit. Since 2017, along with our strategic partners we have been offering crane barge solutions at the Balboa anchorage to lift and unload heavy equipment onboard vessels, to deliver spare parts to vessels that do not have cranes and to assist our engineers when performing major repairs.

At this moment we have a 110 tons crawler crane available at the Balboa anchorage, along with our 23 tons crane on top of our 'Mr. Husband' Barge. Also, we have all our supply boats equipped with knuckleboom cranes for small jobs. This year we are planning to invest and have a crane barge available at the Atlantic side as well, to keep assisting the shipping industry in Panama.

OUR CULTURE – 24/7 CORONA VIRUS DISINFECTION DIVISION

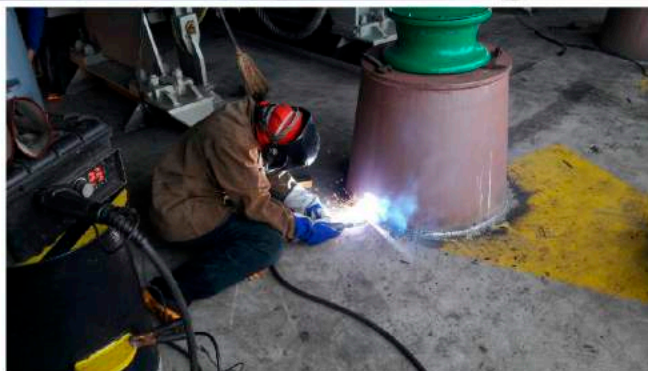


BV SAFEGUARD COVID COMPLIANCE

INSTALLATION AT THE PANAMA CANAL OF CHOCKS, BITTS, ROLLERS, MOORING EQUIPMENT



On June 2016, the first commercial vessel transited successfully through the new expanded Panama Canal locks; an historic achievement, which maintained and increased Panama Canal's importance within the world shipping routes. Now, five years later, thousands of Neopanamax and Panamax plus vessels have gone through the new canal.



Talleres has assisted many ship-owners during the design phase of mooring drawings for Panama Canal Approval up to install approved Panama Canal mooring equipment at both side of the Panama Canal, and during sea voyages to other ports. We have done numerous modifications on all type of vessels, from heavy lift vessels, bulk carriers, container carriers and tankers, to gas tankers such as LNG and LPG vessels.



In Talleres, we have anticipated the requirements of our clients and presently we have a large stock of chocks, bitts, and fairleads class certified, ready for installation onboard. Obtaining reliable information and formal approval on time, is an added value that our company offers and makes a great difference to ship-owners.



We at Talleres work under the highest levels of performance and quality standards, in all our tasks, so that ship-owners can achieve their goals, maximize the benefits from their vessels having the maximum cargo possible, and at the same time, follow the newly updated Panama Canal compliance procedures.



Apart from structural analyses of new mooring equipment to be installed, our Engineering department can assist with necessary reinforcement drawings and stress calculations needed for class approval.



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