



OCTOBER/2020

TALLERES INDUSTRIALES S.A.

24/7 SHIP REPAIRS AND MARINE SOLUTIONS

MAGAZINE



DRY DOCK AT SEA


Repairs on Propulsion System

MAIN ENGINE FIRE REPAIRS

Complete repair of container Vessel at Cristobal, Panama

MAJOR AFLOAT STRUCTURAL REPAIRS

wal of sections of her bulbous bow and forepeak tank



**REVOLUTIONISING UNDERWATER HULL CLEANING
DIVER-FREE, COST-EFFECTIVE, AND ENVIRONMENTALLY-FRIENDLY
SOLUTION FOR UNDERWATER CLEANING**

Advanced
ROV
Technology

Clean and Green

HullWiper uses high pressure seawater jets to remove hull fouling and collects the waste with no direct physical contact, helping to prolong the life of the antifouling and to reduce downtime maintenance costs.

Fast, Efficient and Safe

As there is no need for diver intervention, the cleaning job can be carried out while cargo work is underway or at anchor, and in most weather conditions, thus saving valuable time.



TALLERES INDUSTRIALES S.A.





EDITORIAL

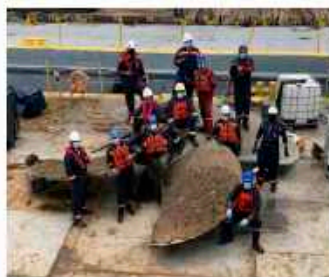
LINO AROSEMENA, CEO

On this first edition of Talleres' magazine, I would like to start by thanking all of our clients, strategic partners and stakeholders in general, for the support and trust during all these years of adventures and challenges in the ship repair industry. We have decided to change the format from our bimonthly newsletters to a more formal informative document that can compile and present more useful information of our organization to our clients.

On March 10th, Panama announced the first case of coronavirus. This pandemic situation has created a lot of unknowns and quick actions from the management. As part of our pandemic response plan, and respecting the need to protect the health of our people and yours, we have implemented Covid-19 protocols at our workshop and onboard your vessels. Additionally, we also developed a new disinfection division using the latest technology available on the market. Finally, we certified our company by a third party - BV Safeguard in compliance with Covid-19 protocols. That being said, it is essential that we remain positive as we continue to learn and adjust to the current situation.

In our industry it is not practical or feasible to stay at home, therefore we will keep delivering safe services, practicing social distancing and employing risk management practices. We hope you enjoy this magazine!!!

CERTIFIED COMPANY



DRY DOCK AT SEA
Repairs on Propulsion System.



MAIN ENGINE FIRE REPAIRS
Complete repair of container Vessel at Cristobal, Panama.



MAJOR AFLOAT STRUCTURAL REPAIRS
Renewal of sections of her bulbous bow and forepeak tank.

DRY DOCK AT SEA



In the middle of the Pacific Ocean, on her passage from Korea to Mobil, USA, via the Panama Canal, a Panamax bulk carrier broke its intermediate propulsion shaft. While arranging a salvage tug, the owners had two options. Either they took the vessel to a dry dock in the West Coast of the USA or they could come to Panama to perform afloat repairs at the Balboa Anchorage, since a dry dock or lay berth for this size of vessel was not available.

Time was running out and to make the decision harder, the event took place at the beginning of the Covid-19 pandemic, when most of the countries started locking down. Talleres Industriales (TISA) has undertaken major challenges before, and its engineers analyzed the project and gave a proposal to the owners to perform repairs afloat. In the end, the owners decided to bring the vessel to Panama.

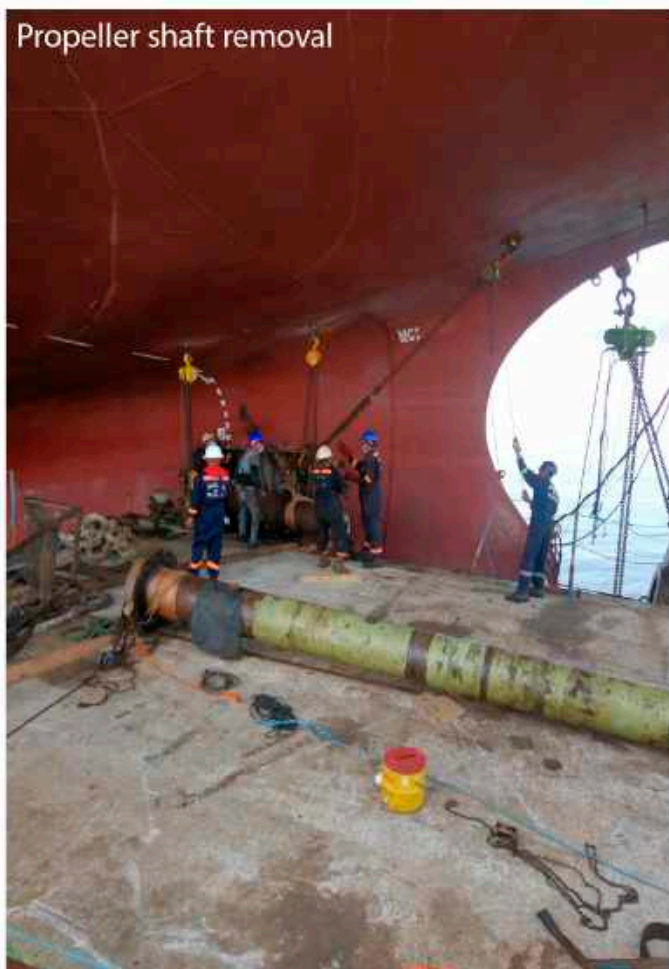
During the vessel's tow to Panama, the ship Manager ordered a spare shaft (6.9 meters long x 1 meter diameter at the flanges, and weighting 9.7 tons of steel).

The original job scope was to replace the intermediate shaft and check the whole propulsion system to see if any additional repairs were required. The original plan involved trimming the vessel, removing the propeller, pulling back the tail shaft, cutting an access at one side of the hull, removing the broken intermediate shaft and installing the new one.



Intermediate shaft removal

Propeller shaft removal



Once the vessel was trimmed and the inspection was done, we noticed that the tail shaft, the stern tube bearing and the forward- and aft seals were also damaged. The ship manager ordered a new bearing, a spare tail shaft, and seals.

Therefore the new scope of the work onboard involved trimming the vessel with submersible pumps to allow the desired draft, removing the propeller, and cutting an access through the hull to remove the broken intermediate shaft, the intermediate bearing, the main tail shaft and the damaged stern tube bearing.

In the meantime, at the workshop we machined the spare stern tube bearing, both outside and inside diameters, with a slope to compensate for the shaft drop. We also machined the tapered section of the new tail shaft to match the propeller cone, machined the new intermediate shaft flanges to match the final length dimension, and adjusted the propeller cone to achieve proper contact with new tail shaft.

Once the all-new propulsion system was ready to be installed, we arranged all necessary floating equipment to install the new stern tube bearing, tail shaft, forward and aft seals and intermediate shaft. Our machinists reamed the connecting bolts' bores and machined the connection bolts to specification.

Propeller removal



Propeller removal





Crane barge maneuvering propeller

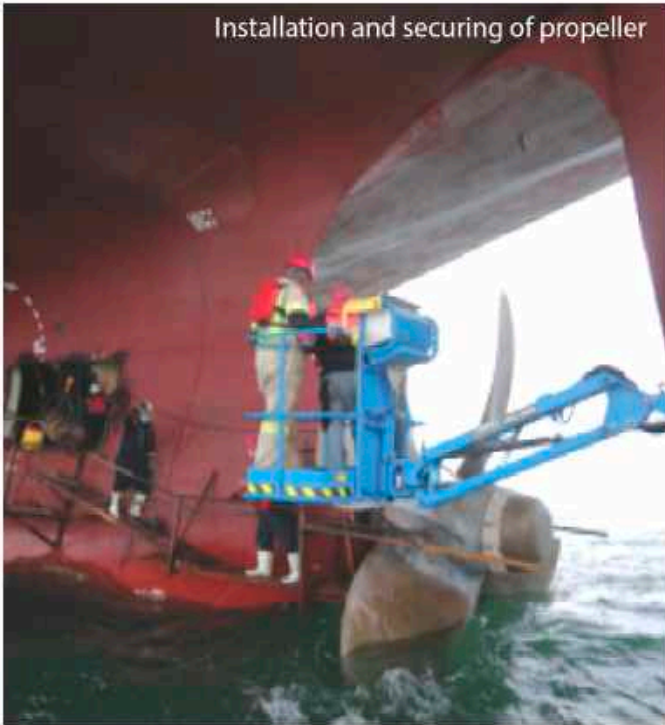


Propeller on deck barge



Installation of propeller shaft through a cut access

Installation and securing of propeller



“We undertake the challenges others don’t.”

Final installation manuvering



Finally, TISA installed the propeller afloat and performed a sea trial with satisfactory results for the class surveyor.

This was a one-of-a-kind repair and involved a lot of resources, expertise and know-how. Talleres is a maritime solution company that performs ship repairs since 1969. No matter how big is the challenge, we can come up with a solution.



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WHO IS WHO

We would like you to meet our entire management staff during the next issues of our Magazine. We will start with the first points of contact for your inquiries and needs. In the next issue we will introduce our engineers in charge of the Technical Department.

POLLUTION CONTROL DIVISION READY FOR ASSISTANCE 24/7

During the initial months of the pandemic, Talleres performed a major cleanup of a spill caused by a bunker barge in a bunker terminal at the Pacific entrance of the Panama Canal.

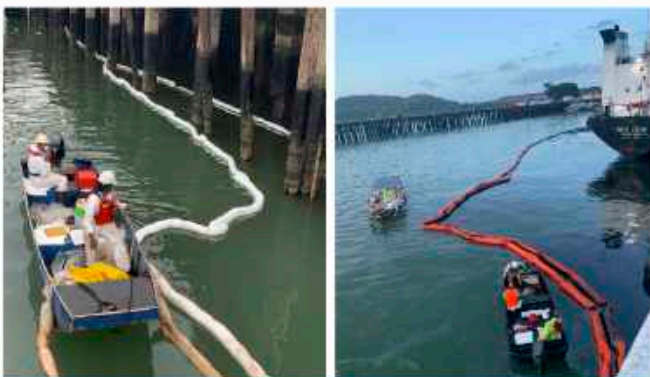
The incident happened at 02:00 a.m., and just two hours after, our personnel was on the spot inspecting the magnitude of the incident. After initial inspections we mobilized all the needed resources.

The certified personnel, with all bio safety measures, was mobilized with all necessary pollution control equipment and devices for land and sea. We mobilized three pollution control boats along with their crew to control and collect the oil.

Talleres worked around the clock and in close communication and coordination with the port managers to control the spill and minimize the impact of this unfortunate event.



**TALLERES INDUSTRIALES S.A.
OIL POLLUTION CONTROL DIVISION**



NEW INVESTMENT - BRUSH SKIMMER MINIMAX 25 - 366078



The Minimax 25 skimmer is a light-weight new generation modular oil skimming unit that is easily transported and assembled. The Minimax 25 is designed to recover oil from the sea and nearshore.

The Minimax 25 consists of only three easily assembled parts, a skimmer body, a collection hopper and a brush module. Therefore, it can be disassembled in less than a minute facilitating cleaning and service. Disc and drum modules are available as additional optional equipment.



MEASUREMENTS TAKEN BY TALLERES TO DEAL WITH COVID-19

TALLERES NEW 24/7 CORONA VIRUS DISINFECTION DIVISION



BV SAFEGUARD COVID COMPLIANCE

We have recently certificated our company with the BV SafeGuard COVID compliance, to guarantee the safety and health of our personnel and the vessels' crews.



Industry Inspection Module

STATEMENT

Label Industrial Site

Granted to
Talleres Industriales, S.A.
 Talleres Industriales, S.A. - Colón / Colón
 ACTIVITY: Industry
 VHS: Confined

BUREAU VERITAS PANAMA, S.A. has assessed the specific job designated herein according to the requirements of SAFE GUARD version 1 - 04/2020:

- [] Further to a remote audit and based on the information provided by or on behalf of the legal representative of the site visited;
- [x] Further to a remote audit of a specific site designated herein;

This statement n° 160-2020-003775 EV has been issued on 05/04/2020 further to the satisfactory assessment conducted on 21/03/2020**

For BUREAU VERITAS PANAMA, S.A.
 José CINCO



Statement valid until: 31/03/2021

To check the validity of this statement scan the QR code or access to web site: <https://www.bv.com/assessment> as company member



TALLERES' new COVID-19 Disinfection Division has received the license and approval of the Panama Maritime Authority, to service the maritime industry at both sides of the Panama Canal.

During these unprecedented times of world crisis, Talleres has invested in several disinfection and sanitation methods.

Depending on the equipment, location, and size of the area to be treated, our disinfecting team will advise the right type of cleaning/disinfecting team for your case.

*) The Inspector has performed using possible video-remote-control devices through a secure link (for private work, onshore industries that are not on the Canal). All activities must meet the requirements of Bureau Veritas SAFE GUARD standard. It must be supplemented by a physical audit realized on site with the full participation of necessary and authorized staff. The latter (having reasonable abilities as far as the operation of computers and other technical tools of remote work).

**) This statement (audit) and its certification (issued on the basis of assessment) were subject to continuous and satisfactory observation of measures ensuring the effectiveness written in the Bureau Veritas SAFE GUARD standard referred to above.

***) This statement does not constitute a guarantee of the absence of COVID-19 virus spreading. COVID-19 within the premises will remain undetected. The following paragraph report cannot replace any regulatory inspection system for the relevant activities or its adaptation.

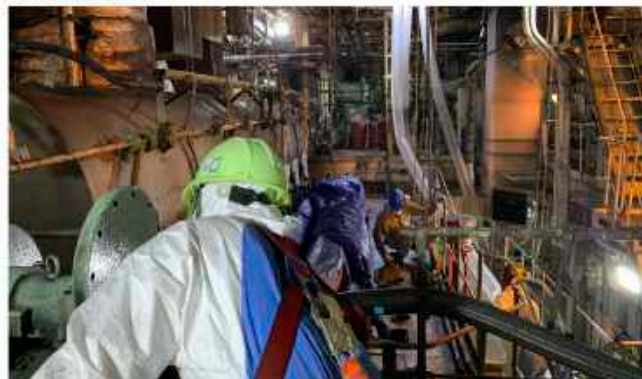
FIRE IN AN ENGINE ROOM OF A CONTAINER VESSEL



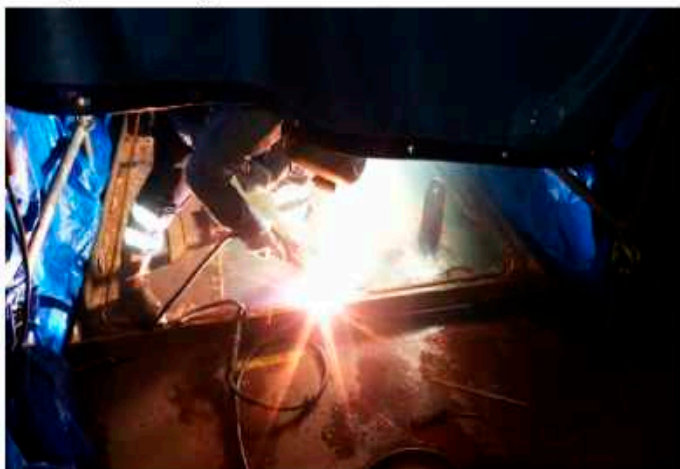
Talleres Industriales S.A. once again demonstrates to the world its ability, professionalism, and skill in the maritime and industrial world. There is no doubt that this has been a year with many challenges, but TISA has not been left behind at all. We have faced, countered all adversity, and moved forward.

On this occasion, our company was part of a fully Panamanian work team, with a mission to restore the engine room of a container ship. From changing fire doors to giving a complete maintenance to the generators, we undertook jobs such as the maintenance of electrical cabinets, the repair of the provision crane, cleaning the engine room, welding the bulkheads and the installation of temporary cranes.

We also provided support for other main jobs such as the main engine renewal and electrical power restoration.



Talleres Industriales has the ability to deal with all these above-mentioned areas, leaving its name in high standing, and providing peace of mind and security to its clients. We will always be pleased to assist you in the best possible way.



“We work as strategic allies with our clients”



IF WE WERE TO BE A CARTOON CHARACTER WE WOULD DEFINITELY BE THE ROAD RUNNER!!!



**"FAST,
FOCUSED,
SAFE,
EFFICIENT"**



OUR SAFETY COMES FIRST

We are committed to promoting safety, health at work, the protection of the environment and the quality of our services.

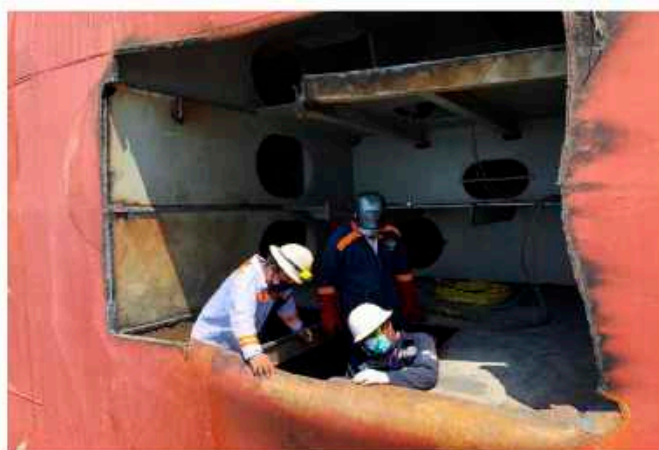
MAJOR AFLOAT STRUCTURAL REPAIRS



Talleres Industriales is taking all measures implemented by local Health Authorities to ensure world-trade shipping continues moving forward.

This time we undertook a major repair at the Balboa Anchorage on a Very Large Crude Carrier (VLCC), which hit a terminal pier +600km away from the Panama Canal Entrance. Initially we mobilized our team to temporarily assist the vessel to avoid further damage and prepare her for the voyage to the Balboa Anchorage.

Our engineers and certified technicians undertook the challenge to repair a section of the bulbous area and the side shape plate simultaneously. Both plates were rolled in our Workshop Roller Press, which can work with plates up to 31 mm high tensile. Upon completion of the repair job, it was verified by qualified personnel in presence of a Class Surveyor, who approved the service as a Permanent Repair.



**“We work days
the others don’t”**



Talleres Industriales, during the present challenging times of SARS-Covid 19, keeps servicing vessels, on both sides of the Panama Canal and the Republic of Panama, from regular planned maintenance to major repairs with qualified personnel and AICS approved workshop facilities.

TALLERES PURCHASED THE MOST ADVANCED PLATE ROLLER MACHINE FOR THICKNESS GREATER THAN 80 MM



Talleres has invested in the most advanced plate rolling machine for thickness greater than 60-80 mm (2 – 3 inches). An individual machine, with many exclusive benefits, and the best solution available for “super heavy applications”. This 3 roller heavy duty machine will help us give shape to bulbous bows, stern areas of vessels, as well as cylinders and structures from the mining and energy industry. We will keep investing to fulfill our stakeholders’ needs.

———— 24/7 SHIP REPAIRS AND MARINE SOLUTIONS ————



TALLERES INDUSTRIALES S.A.



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