



July 2008

## SubSea Solutions Newsletter

### "The Chronicles"

*Rapid Cost-Effective Worldwide Underwater Repair Solutions*

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**Web Site!**

**The Dog days of summer are upon us. That has not slowed down the experts at Subsea Solutions one bit!**

**Enjoy reading about some of the exciting projects tackled in June and the beginning of July 2008.**



**Who needs a Crane Barge Anyway**  
Offshore Vessel- Azimuthing Thruster extraction

The oil patch is booming, requiring offshore rig operators to be creative in their repair solutions. With day rates for rigs

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ADDED!**

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in the hundreds of thousands of dollars per day and a shortage of available heavy lift equipment for hire, the experts at Subsea Solutions were tasked with the project of developing a SAFE and ECONOMICAL procedure for the extraction of underwater demountable thrusters without using any external support equipment. The premise for the exercise was to develop a procedure that could be employed offshore thus saving the rig operators days off hire time by performing the thruster extraction offshore as opposed to requiring the rig to be relocated to a safe harbor.

After months of planning and preparation, the team of diver technicians performed what was previously thought to be IMPOSSIBLE and demonstrated a SAFE and ECONOMICAL method to extract and replace the six thruster units without using any external or hired lifting systems.

The procedure utilizes buoyancy controlled submersible rigging to transfer the load from the inboard vertical lifting system to the rig's own deck mounted crane. The units are then loaded aboard the rig or a supply vessel for transportation to the service facility.

It is expected that this client and many others will employ this process for thruster exchange on future projects with the vessel offshore.

**Panama the Epicenter of Subsea Repair**

No job too large for Subsea Solutions Alliance / Miami Diver Panama

July was a busy month for the Subsea Solutions Alliance team in Panama. With fully equipped 125 ft. support craft on both sides of the canal and a permanent staff of highly trained diver technicians, the Subsea Solutions Alliance team is outfitted to handle multiple large scale vessel equipment repairs in addition to the normal ships husbandry work that takes place in Panama. The team was put to the test this month.

A general cargo vessel experienced a failure of the main shaft in the hydraulic taper in Jamaica causing the vessel to have no steerage. The SSA team mobilized a local dive team of welders utilizing the SSA's own equipment located in Jamaica to secure the rudder for towage to Panama. While at the same time, templating and measurements were done in Jamaica so that a 10 ton cofferdam to the surface could be fabricated in Panama. Once in Panama, the highly skilled and trained work force of the Subsea Solutions Alliance performed an underwater extraction of the rudder blade and installed the cofferdam for completion of the repair. This cofferdam was constructed to allow specialized

service personnel to line bore newly installed bushings in the rudder stock. Once the stock was prepared, the rudder blade was again reinstalled and the vessel was released for service.

Additionally a Container vessel arrived into Panama requiring a tunnel thruster to be exchanged with a newly reconditioned unit. With only a couple of days of waiting time to pass through the Canal, the team of experts from the SSA Panama office completed the Thruster exchange and allowed the vessel to safely continue it's passage.

By having a local work force, support vessels and specialized equipment available Panama, the Subsea Solutions Alliance was able to save these clients significant time and money for the completion of these very technical repairs.

Please feel free to contact us and we can see what we can do for your vessels as they transit the Panama Canal.



### The Fuel Management Program

What can a bunch of Diving companies do?

When the worlds largest Offshore Construction vessel arrived to the Island of Curacao in the Caribbean, **Miami Diver International BV**, a member of the Subsea Solutions Alliance, attended the vessel every day to perform critical subsea maintenance INCLUDING cleaning the propellers and hull. The owners of the vessel saw an IMMEDIATE return on their investment by improved vessel speed and lower fuel consumption. With a full staff of diver technicians on the island our team of experts is available for standard ships husbandry as well as critical vessel and equipment repairs.

Above is a perfect example of how an individual vessel can benefit from the performance of normal scheduled subsea maintenance. So, How can a consortium of diving companies make a difference in fighting the high fuel bills associated with shipping today? The SSA is pleased to provide fixed priced globally managed underwater maintenance programs for vessel hulls and propellers. Regularly scheduled hull cleaning and propeller polishing will FLAT LINE the fuel consumption of a vessel. The SSA offers global fleet contracts. The equipment and processes utilized

by the SSA member companies has been approved by the manufacturers of silicon based speciality coatings. With service stations throughout the world we are readily available to meet your needs. Give us a call and let us provide your vessel or fleet with a quotation.



### **Propeller Straightening in Hours**

Cold Static load propeller straightening

July has been a busy month for propeller straightening operations in Vancouver. Subsea Solutions Alliance member All-Sea Enterprises Ltd. is all too familiar with the many hours of travel required to provide this service (exclusive to the SSA) in ports world-wide so it was a nice change to have several consecutive jobs right in their back yard.

The month started with a Panamax bulker complaining of a 0.5 knot speed reduction and increased vibration after touching bottom in China. All-Sea's certified Propeller Service Engineers discovered a large forward deflection in the trailing edge tip of one of the four blades and minor mechanical contact damage on all blades. Within hours, the large deflection was restored to near design geometry and all minor mechanical damage was milled out and faired. The procedure was accepted as a Class approved permanent repair and post repair sea trials confirmed that vessel speed and engine parameters had been restored to pre-damage values.

Next up was a cruise vessel with minor deflections in all four blades due to contact with a detached rope guard section. Although these bends were small, the result was excessive vibration and cavitation erosion. SSA's purpose designed tunnel press was used to straighten the deflections and eliminate the problems.

A large ocean going tug with severe damage to all five blades after tangling with a log boom was next in line. The majority of the deflections were trailing edges set forward, resulting in decreased pitch and thrust. The vessel was scheduled to commence a long haul tow the following day and the decrease in thrust and towing speed made the

vessel unsuitable for the job. In one day all blades were straightened using the "pocket press" and all linear defects removed. The vessel sailed with it's tow as scheduled.

Finally, to round out the month, a recently commissioned coastal ferry sustained large forward deflections from a log strike in two blades on one of it's 5000mm diameter four blade main propellers. The vessel's Chief Engineer had reported increased vibration levels, cavitation noise and a two knot reduction in vessel speed at MCR. During night lay up and without interference to the vessel's sailing schedule the All-Sea team restored both blades. The first sailing of the morning brought news from the engine room that the vibration and cavitation noise was gone and the two knots had returned.

The Subsea Solutions Alliance (SSA) is a consortium of underwater ship repair specialists including: All-Sea Enterprises Ltd, Miami Diver Inc, Parker Diving Inc and Trident BV. With a dedicated staff of over 100 divers globally, SSA has revolutionized the methods of repair for ship equipment underwater. Through a common shared system of dive equipment, specialty tools, and dive personnel the SSA is able to mobilize quickly anywhere throughout the world with diver / factory trained service technicians for most OEM equipment. From the replacement of aft propeller shaft seals to the exchange of thrusters to straightening large bends in propellers, SSA has become the OEM's choice for all types of complex repairs. With class approved techniques and a highly trained staff in both underwater ship repair and propulsion equipment maintenance, SSA is the clear choice for vessels operating in sensitive environments and on critical trade routes.

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