



January 2010

SubSea Solutions Newsletter

"The Chronicles"

Rapid Cost-Effective Worldwide Underwater Repair Solutions

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Azimuthing Thruster repairs

Propeller Repairs

Permanent Insert Repairs

SSA developments!

Additional information may be found on our Web Site:

www.subseasolutions.com

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With a new year upon us, the member companies of the **Subsea Solutions Alliance** have been very busy. In addition to the many repairs performed throughout the world this month, the **Subsea Solutions Alliance** has put into action its plans to further strengthen its work force and capabilities. Technical as well as supervisory training for its personnel will continue at the SSA dedicated training facilities and with their OEM partners. The SSA will also continue to invest in the specialized equipment needed to perform specialized repairs on installations in all markets around the world. With focused investment in locations and specialized equipment, the member companies will continue to meet the requirements of even our most stringent clients on their installations throughout the world.

The **Subsea Solutions Alliance** was very busy meeting the needs of the industry by performing multiple high value repairs in various ports around the world. The summary below illustrates just some of the major projects performed.

- 3 Tunnel Thrusters were installed- 2 in Europe and 1 in Canada
- 2 stern seals were replaced- 1 in Central America and 1 in Australia
- 1 Azimuthing Thruster Shaft Seal Replacement was

performed in Singapore

- 1 Permanent insert repair was performed in Canada
- 1 Bulbous bow repair performed on the West Coast of the USA

5 propeller repairs with Sectional reduction and straightening were performed in Europe, the Caribbean and North America

With many projects continuing to develop we remain available to meet your emergency and routine maintenance needs. Please feel free to contact us at any time and thank you for your continued trust in the services we provide!

- Rick Shilling

Subsea Solutions Alliance

<u>Call Friday night and in Singapore on Tuesday</u> When a plan comes together



A specialty vessel working in the Far East on a critical charter suddenly encountered a situation with one of it's main propulsion azimuthing thrusters. With significant oil loss being reported by the vessel an immediate repair

was required to either the main shaft seal or the steering box seal. With the vessel steaming toward Singapore or Malaysia for repairs, the Subsea Solutions Alliance sprung into action. With 36 hours of notification on Friday afternoon, the equipment was packed and ready for shipment from Subsea Solutions Alliance's Long Beach facility. This included all the necessary tools, rigging equipment, special flexible hyperbaric cofferdams and other materials necessary to support either a stern seal or steering seal repair. With the shipment leaving Monday from Long Beach, personnel were then dispatched from Subsea Solutions Alliance offices in Long Beach and Vancouver to manage and perform this complicated in water repair.

Upon arrival of the vessel in the anchorage in Singapore the team sprung into action by setting up the dive station, identifying the source of the leak and begin the complicated repair to the Stern Seal. Within 48 hours of the start of the repair, the Subsea Solutions Alliance team executed the

successful repair for this installation.

No one wants to come off hire. But let's face it, we are operating high tech vessels in the world's harshest environment. Allowing this vessel to return to service within a very short period of time allowed the client to mitigate any substantial off hire penalties associated with it's critical charter. This is what the Subsea Solutions Alliance is all about.

Ice, Ice Everywhere- what a drag for Propellers

Propeller repairs performed the world over



The world's ports are opening up again after a short winter hibernation, but heavy ice flows are causing considerable damage to propellers. In a two-week period, the member

companies of the Subsea Solutions Alliance were dispatched to straighten and repair damaged propellers with large bends and damaged blades to 5 different sites throughout the world. Ice damage occurs particularly during astern events due to ice becoming induced into the propeller. When high vibrations and unusual loading occurs on the propulsion engines, immediate emergency repairs are necessary to avoid further damage to stern tube components. While the vessels were conducting cargo operations, the diver / propeller specialists from member companies in The Netherlands, Miami Florida and Vancouver Canada were busy below restoring / repairing the propellers to their original geometry with minimal or no hydrodynamic losses. Utilizing specialized equipment and highly trained propeller technicians, the teams allowed vessels to continue their cargo operations without any off hire and within hours of dispatching to the vessels site had the propellers repaired. Straightening large bends combined with sectional reduction methods are employed to restore propellers quickly underwater. Hydrodynamic and static balancing is then carried out in accordance with criteria established by The SSA's engineering department. By focusing on the hydrodynamic balance of the propeller, operational efficiency is maintained at it's highest level without risking cracking or further damage to the propeller.

Propeller damage occurs at the most unpredictable times.

Hazards always lurch right BELOW the waterline out of site of even the best mates and captains. It is good to know that repair alternatives below the water line are also available. The member companies remain available in most ports of call dispatched within hours of notification. Let us know what we can do for you.

Groundings Happen when least expect it



The diver technicians from the Subsea Solutions Alliance office in Canada spent a cold and wet Christmas and New Year along the Canadian Northern West Coast providing emergency repairs to a vessel that had grounded. With significant damage aft of the bilge keel, mechanical impact was measured along an area over 8 meters long and 2 meters wide. Another damaged area in and around the high sea chest had indication of mechanical impact as well. Mechanical impact and abrasions to the vessels rudder in way of the bottom plate were also noted. Lastly the propeller was damaged and required repair.

The diver technicians proceeded ahead with the repair on all damaged components. After performing inspection and measurement dives, templates were produced mapping out the curvature of the hull in the affected area. The engineering department within the SSA developed the design for the cofferdams and subsequently the on site team fabricated and installed them properly so that the affected area could be cut away for a permanent repair. The cofferdams remained installed until all affected areas of the hull were replaced in accordance with the classification society requirements. The one SSA team performed all in-hull as well as outer hull repairs thus minimizing the number of personnel required on site. Upon completion of the hull repairs, the propeller damage was repaired and blade roots and affected areas were confirmed to be free of cracks or linear defects.

Combining the skill sets of the Subsea Solutions Alliance

diver technicians, the repair was completed efficiently with one multi-faceted team in a remote location without the need of extensive external support. Combining skilled technicians with approved weld procedures in accordance with classification society requirements, the Subsea Solutions Alliance team was able to efficiently turn a potential New Year's spoiler into just another day owning a ship!

Growing and training to exceed expectations



The Subsea Solutions Alliance growing their facilities to meet the needs of our expanding clientele. Parker Diving Service and Miami Diver have just finalized plans on new buildings on adjoining properties to their existing locations. With these new facilities, new offices, warehousing and training facilities will be put into place to further enhance our capabilities to deliver excellence. Trident BV is in the middle of a multi-million Euro renovation and expansion of its facility in The Netherlands. Once completed, the new facility will include the third Subsea Solutions Alliance training center with twin dive tanks and other equipment.

In addition to the expansions, the SSA continues to train its personnel. With twelve additional diver / technicians attending training at Blohm and Voss in Hamburg Germany, additional certified seal bonders will be available for global customer support. Project Management personnel have been enhanced with professional engineers hired in Miami Florida and The Netherlands. New 3-D CAD systems have been implemented in all major SSA facilities to enhance our engineering departments capabilities. The SSA prides itself for maintaining it's own full time work force and maintains the core values of continual development of its personnel. Training is a never-ending process within the Subsea Solutions Alliance. This focus on training and personnel development fuels the Subsea Solutions Alliance's strive towards excellence in the industry that remains unparalleled.

The Subsea Solutions Alliance (SSA) consists 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 150 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.

For Further information please feel free to contact:

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