

EX-USS SHADWELL Disposal – Wreck in Place

EX USS SHADWELL, a decommissioned CASA GRANDE Class Dock Landing Ship has had a long history supporting the US Navy. She was built by Newport News Shipbuilding in 1944, and served as a commissioned vessel thru 1970. NRL took custody and began using her for testing firefighting equipment, procedures and testing fire resistance of materials beginning 1988. After decades of testing, she was retired from NRL service in October 2016.

In February of 2017, following a request for Salvage from the Naval Research Lab (NRL), OPNAV tasked SUPSALV to support Naval Research Laboratory (NRL) with the removal and disposal of EX-USS SHADWELL (LSD-15) which was moored on Little Sand Island, in Mobile, AL.



EX-USS SHADWELL in her mooring on Little Sand Island where NRL used her as a full scale R&D platform for conducting firefighting tests.

The most recent survey determined that she was grounded along 60% of her length and the extreme degradation of her structural members and shell plating raised the potential for catastrophic failure during a tow to a ship breaking facility to unacceptable levels. To avoid significant dredging operations to free her and to avoid a high risk tow through the heart of the Mobile's navigation channel, the determination was made to conduct the disposal of the ship in place.

To safely scrap and dispose of SHADWELL, meeting all environmentally regulations, a dismantling plan was prepared. The initial step was to remove the fittings, furnishings and trash from all spaces and decks. A trash barge was brought along side for processing, sorting and transferring waste streams coming off SHADWELL. Pictured below is the trash barge with individual dumpsters for each kind of waste. Trash removal was essentially completed by 18 July with more than 95% of the identified loose material removed.



Trash Barge alongside EX-SHADWELL equipment with multiple dumpsters for each type of waste. (10 July 2017)

Asbestos and PCB removal began the Hazardous Waste removal phase. EPA and OSHA regulations dictated the procedures and the contractors were required to wear breathing apparatus and other personnel protection equipment. Additionally, a 3rd party Air Monitoring contractor was put on task to verify conditions onboard SHADWELL during these operations. To make waste removal more efficient, holes were cut in bulkheads and shell plating to make it easier to access the inner spaces of the ship. Because the HAZWASTE removal was broken down into three separate zones, both waste and structure removals were able to be performed in parallel. After the first HAZWASTE zone was cleared, the DONJON crew was able to cut and remove structure and superstructure within the cleared zone.

During the summer, crews continued hazardous material removal and cutting structure which had already been abated or did not require abatement. All was going according to plan until Hurricane Irma began strengthening in the Caribbean and heading west. On 7 September, the team stopped hull cutting and asbestos removal and secured the vessel for possible hurricane impact. By September 10th, the storm had passed and crews went back to work.

While the storm had passed, it was too early to say Hurricane Irma and ultimately Hurricane Maria had no lasting impact on SHADWELL disposal task. SUPSALV responded to urgent tasking from the U.S. Army Corps of Engineers to support derelict vessel removal / channel clearance in Key West (result of Irma) and another Corps of Engineers request to remove derelict vessels from Port of Ponce, Puerto Rico and Christiansted, USVI (result of Maria). To meet these urgent needs, SUPSALV directed the transfer of the large DONJON crane barge FERRELL from the SHADWELL Disposal task in Mobile, AL to Key West and the Caribbean for the period 17 September through 2 December 2017. During this time, SHADWELL work continued, including hazardous material removal and the salvage crew was able to pre-cut many internal bulkheads to simplify removal once the crane barge FERRELL returned. On 6 December, just

days after the crane's return, the milestone of completing removal of all asbestos from the ship had been achieved and steel removal re-recommended.

EX-SHADWELL disposal continued throughout the months of December and January. Working with DONJON, LCDR Eric Brege, the SUPSALV project manager developed an overall cut plan to remove the structure in a controlled, methodical way. To allow the ship to be pulled onto the beach more easily, significant trim was induced by removing significant portions of structure at the bow and working aft.



Bow section being lifted from SHADWELL's hull on 7 January. Note mooring line on left and anchor capstan center.



EX-SHADWELL's anchor chains are removed from the chain locker after 1st and 2nd Decks have been removed from the bow.

After bow sections above the waterline were removed, the ship was rotated perpendicular to the beach and pulled up onto the beach. In the image below, the bow remains attached to the hull but has been pulled to the beach and chains are in place for the 300-Ton chain puller to slide the hull forward across the sand.



EX-SHADWELL's hull is easily pierced with just a metal rod, showing the severity of hull degradation

As portions of the ship normally below the waterline were exposed, the wrecking in place option was validated as numerous holes in the shell plating were exposed. In fact, the hull was weak enough around the engine rooms and boiler rooms that a broom handle was able to easily pierce the hull. Had SHADWELL been dredged out and brought into the channel for towing, the lack of structural watertight integrity along with her holed hull could easily have led to catastrophic failure within the shipping channel.



13 January 2018 - LCDR Brege observes the forward sections of the ship cut down to just above the waterline as the ship is being prepped for pulling onto the beach with the 300T chain puller.



6 February image of the starboard side of Auxiliary Machinery Room being lifted free of the beach.

The project team continued to move steel rapidly as the project nears completion. Each hull section, weighing between 35 and 110 LT each, is lifted onto a barge for transport to a steel scrapyards. By the first of February, over 3,200 Long Tons of hull had been removed. The ship disposal continued as planned in the final 3 weeks and the last section of the hull was lifted onto the scrap barge on 19 February. Following the removal of the ship, all equipment was removed from the island, a SONAR survey was conducted to locate any items within the cove requiring removal, and post project soil samples were taken for analysis in the same locations as the pre-project samples.

To complete the project, more than 305 CY of trash, 180 CY of asbestos, and 75 tons of PCB containing material were removed from the ship. Using the crane load cell and weight calculations, LCDR Brege estimated a total of 4556 LT of structure was removed using 40 barges for scrap. After 228 days, SUPSALV completed the project injury free, and cleared all traces of SHADWELL from Little Sand Island.



The DONJON Salvage crew and SUPSALV's LCDR Brege pose in front the last SHADWELL hull section to be removed from Little Sand Island on 19 February 2018,