

DELTA TUG & BARGE LTD. SALVAGES HISTORIC VESSEL LANGDALE QUEEN

By Capt. Don Rose

On the 24th of December 2008, while moored in the Fraser River, the former BC Ferry “Langdale Queen” sank due to a heavy snow load on her deck. The salvage operation was headed up by Mitch Hughes General Manager of Delta Tug & Barge Ltd., along with Andrew Johnson of Global Rigging, Ted Hill of Hydra Marine and Mark McAllister of McAllister Marine Survey & Designs. To salvage the Langdale Queen all that was available was local equipment not originally intended for salvage work. **Therefore some typical Canadian ingenuity was required to make do with available equipment.**

Vessel history:

300 feet long, 58 feet wide with a hull depth of 20 feet:

The Langdale Queen O. N. 195485 has a very long and colourful history. Built in 1903 by William Cramp & Sons as the “SS Asbury Park” for service between New Jersey and New York. (See photo #1) In 1918 she sailed via the Panama Canal to San Francisco Bay and was renamed the “SS City of San Sacramento”. While in San Francisco her configuration from the main deck up was changed to load and discharge vehicles from the bow and stern. (See Photo #2) She sailed in San Francisco Bay until 1941, when she sailed to Puget Sound. There she sailed on the Seattle Bremerton run. In 1952, Black Ball Ferries Ltd acquired her, had her rebuilt at Yarrows Ltd at Esquimalt, BC. She was renamed “Kahloke” and repowered with four sixteen-cylinder General Motors diesel engines producing 6,560 BHP. In 1953, she was the first of the Black Ball Ferries to sail on the Horseshoe Bay - Departure Bay run. (See Photo #3) When BC Ferries took over the Canadian operations of Black Ball Ferries she was renamed “Langdale Queen” and used on the Horseshoe Bay - Langdale run. (See Photo#4) On the 23rd of July, 1976 she made her last departure from Horseshoe Bay. She sailed to the Deas Dock where her engines were removed and gravel ballast was installed to replace the engine weight and maintain stability. After decommissioning and disposal by BC Ferries, she was owned by a number of owners who had big dreams that never seemed to come true. She was renamed “Lady Grace” (although this name does not show in ship registry.) She was moored in Coal Harbour for a time where she sank at her moorings. Later she was re-floated and moved away from there. At a later date she was stripped to the car deck and moved to east of Berry Point in Vancouver Harbour where she was used as a dock barge for many years. She eventually ended up in the Fraser River where she again sank.



S.S. Asbury Park

Photo #1:



S.S. City of Sacramento

Photo #2:



Photo #3 As the Kahloke

Note the Black Ball on her Stack

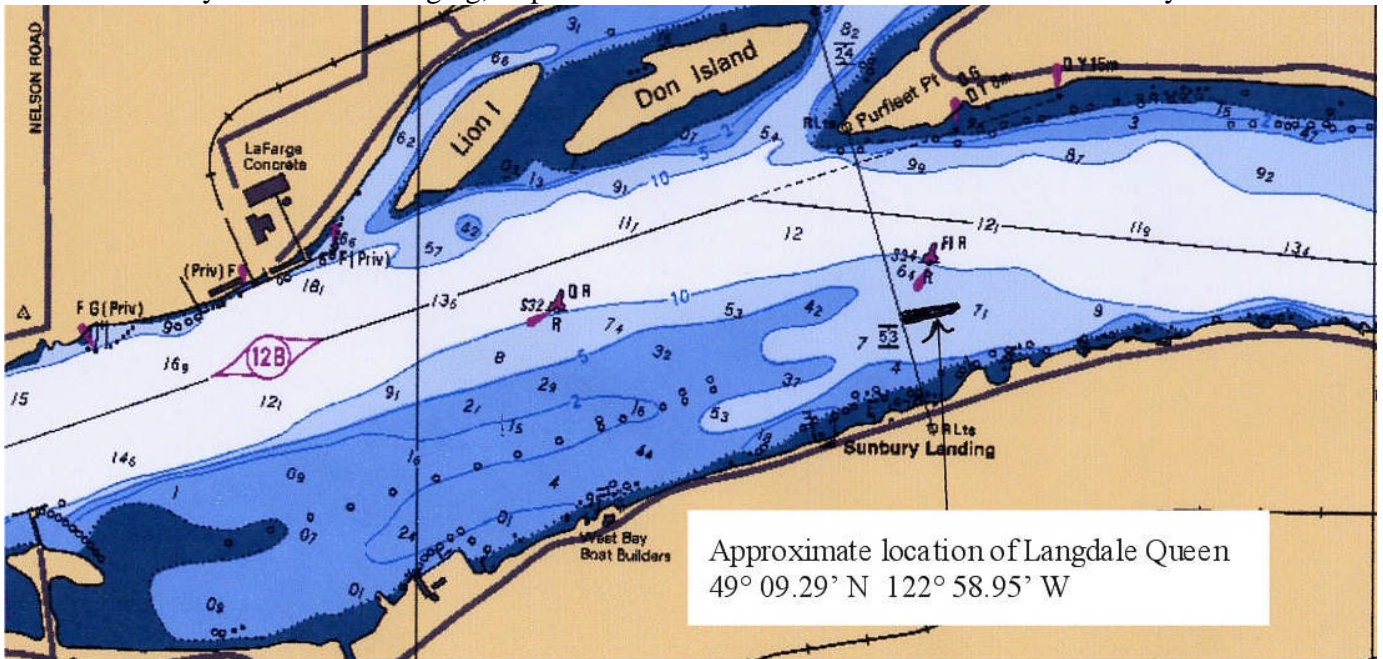


Photo #4 As the Langdale Queen.

Photos courtesy BC Ferries web site

A survey of the vessel while on the bottom was done by divers and by bathymetric sonar which determined that the vessel was lying close to upright with two metres of water over the highest part of her deck at low tide. (See Chart). It was determined that the hull was structurally sound. However, there were

several open hatches and a number of corrosion perforations in the deck. Although shallow, diving on the wreck was to say the least challenging, as periods of slack water are minimal and the visibility is zero.



Drawings of the Langdale Queen were obtained from the Maritime Museum of BC which were valuable to determine the hull shape and bulkhead positions. Due to safety concerns entry of the hull while on the bottom was not an option.

The water tight integrity of the hull was at best questionable and all were confident that there were not any air tight compartments. Even at the lowest tide the hull was completely submerged, therefore simple pumping her out was not an option. Due to the weight of the hull, lifting her to the surface for pumping was not an option as there were not any cranes available capable of lifting this weight. As well there were not any points where lifting cables could be attached and the structural condition of the hull was questionable. As she is of riveted wrought iron and cannot be welded, attaching lifting points was out of the question.

Several options were explored for removing the water from the hull and floating her to the surface. These were dismissed for various reasons as not being practical, possible, or environmentally friendly. At 03:00 A.M. one morning, Mitch Hughes came up with the idea of placing large circular steel tubes on the deck that would protrude above the water surface and lowering pumps into the hull.

Three tubes with concrete bases for stability were assembled on shore then lowered, secured and sealed on the deck. (See Photo #5). When the tubes were in place, divers went inside the tubes and cut openings in the deck to allow access to the hull. Nine pumps (three in each tube) each with a capacity of eighteen tons per minute were lowered through the tubes into the hull with their discharge lines coming up through the tubes. (See Photo #6)



Photo #5:

Mitch Hughes Photos



Photo #6:

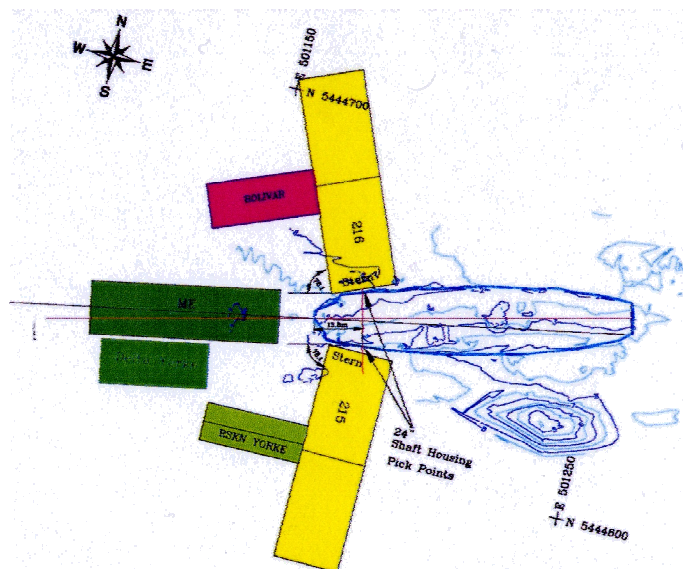
Prior to starting the raising operation, a safety meeting was held to discuss procedures, communications, positioning, designate foremen, operators, safety personnel and safe areas were defined.

On the 31st of March 2009 the first salvage attempt was made. With the pumps operating she did come up to the surface. However, due to the poor stability of the vessel and the free surface effect of the water inside the hull she came to the surface with a heavy list to starboard. Realizing this was not going to work, the pumps were stopped and she settled back to the bottom. (See Photo #7)



Photo #7: Mitch Hughes Photo

Concluding that the Langdale Queen had to be stabilized during the raising, the following procedure was put into action. Two barges were outfitted with rod jacks capable of lifting five hundred tons each. The barges were positioned transversely on each side at the stern of the Langdale Queen. The rod jacks were attached by cables to the tail shafts on each side of the vessel. (See drawing)



Drawing showing position of barges at stern of the Langdale Queen.
Drawing courtesy of Mitch Hughes

At the start of the procedure, the pumps were turned on in a specific order and the rod jacks were used to raise the stern of the Langdale Queen to the surface. Once the stern was raised above the surface, all the pumps were engaged, which brought the remainder of the vessel to the surface. (See Photos 8, 9 & 10)



Photo #8 Mitch Hughes Photo



Photo #9 Mitch Hughes Photo



Photo #10 Don Rose Photo

The pumps at the aft end of the vessel were started first, at the same time the starboard barge took up to one hundred and fifty tons of strain with the port barge taking twenty tons of strain. The forward end to the Langdale Queen was attached to a buoy (See Photo #10) with a 1000 horsepower tug standing by to provide assistance as required.

I had the opportunity to observe the Langdale Queen come to the surface. Although to a non mariner it may not appear to be very exciting, there were some very tense moments as the one hundred and six year old vessel came to the surface. At first the stern came up, then the bow came up and broke the surface. The following series of photos that I took speak for themselves as they show the historic Langdale Queen coming to the surface.



Once the Langdale Queen was floating on her lines, a safety meeting with all crew was held to discuss the next phase of operations. All equipment was left in place for assessment of the vessel and inspections commenced.

Divers checked for ingress of water.

Shaft tubes were inspected to ensure the packing was in place and not leaking.

The barges and the Langdale Queen were moved to the Delta Tug barge loading ramp and secured. Two employees remained on board for the night to monitor the vessel.



The salvage crew pose for a picture after a job well done.

When a vessel is involved in an incident such as sinking or grounding, it is common for the salvage operation to result in increased damage and destruction. The Langdale Queen was successfully salvaged without further damage.

Mitch Hughes has been involved in a number of salvage operations. He was involved in the righting of the capsized barges Great West No. 3 and Straits Traveller. He was in charge of salvaging the Rivtow Carrier after she had grounded on Camp Point in Johnstone Straits in December 1999. In 2000, he was involved in the salvage of the very large crude carrier Atigun Pass off the coast of Washington. In 2003, he was project manager of the righting of the capsized log barges Seaspan Rigger and Powell Carrier.