The Wreck of the *Albatross*

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NAS II Survey Project

Submitted November, 2009
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Lumbering in the Elk Rapids Area

While working for the Elk Rapids Iron Company, her main job was the transportation of lumber from the forests upstream to the blast furnace in Elk Rapids. Logs were transported either by being loaded onto scows or transported in booms. With scows, logs were stacked on small, barge-like structures, until approximately 25 cords were loaded. Then they were towed downstream to the furnace. Booms were logs that were chained together and sent downstream, escorted by a tug. The tugs under the management of the Elk Rapids Iron Company were able to

Elk Rapids Iron Works

Photo from the book: Elk Rapids - The First 100 Years by Glenn Ruggles
Today, the Albatross lies semi-intact in the Elk River. There are scattered remains of another vessel further upstream and more research is required to determine if it is one of the other two tugs used by the Elk Rapids Iron Company although the condition of the remains might make positive identification impossible. Using historical accounts, a visual inspection, and using a best guess in dendrology, the Albatross was constructed using solid oak (white oak) for the spar, main and cross beams. The cross beams were carved out to stabilize its high-wing top, giving it the name “Albatross” and are still visible in their original installed locations. Decking was primarily oak boards of medium length (12-16 feet). While some of the roof boards appear to be pine they have severely deteriorated, and most have since disappeared. The port side of the vessel has more exposure to the river current and the sand has been scoured out in

navigate the waters of the lower Chain-of-Lakes, including Elk, Skegamog (Round), Torch, and Clam Lakes during their services.

Records for the Albatross state, in addition to hauling wood, she was occasionally leased to other companies. The last record of this is for July 6, 1916, when she was leased for the season in order to build docks. Later that year, she was abandoned in front of the Elk Rapids Iron Company. She was the last of their tugs to be working, with the Torch Lake being abandoned in the local shipyard in 1910, and the Elk Lake being badly damaged by ice and dismantled on the shore of Elk Lake shortly thereafter. Sometime between 1914 and 1918, the Elk Rapids Iron Company closed as competitors drove it out of business and the local supply of wood for the furnace was exhausted. With the loss of its major industry, the town of Elk Rapids entered a recession for a number of years.

Lumbering was the principle industry in this region in the very early days. Dexter and Noble of Elk Rapids, and Cameron Brothers of Brownstown, now Torch Lake, were the two largest operators. The iron furnace owned by Dexter and Noble first went into blast in 1873. Cord wood, to be converted into charcoal and used in refining the iron ore, was secured from the settlers around the shores of Elk, Torch, Round and Clam Lakes. The wood was cut into four foot lengths, then loaded on scows or lighters of four to six in number, each carrying twenty to twenty-five cords. These scows were towed by powerful tugs, namely the Elk Lake, Torch Lake, and Albatross. The Torch Lake was used primarily to transport logs for Dexter and Noble who also owned a saw mill. The logs were placed in cribs until ready to move. Then they were made up into “booms”, a line of connecting floating timbers locked together with heavy chains and made into narrow rafts, so they could go down the Torch River without holding up navigation of the other tugs.

The crews working on the lakes lived in boarding scows or floating camps, called “wannigan” or “wangan”. The boarding scow for the wood crew was a two story structure built on a large barge. The crew slept in bunks on the second story and the first floor was divided into three rooms: a dining room, kitchen and lounging room for the men. The log boarding scow was not as large, only one story, but the arrangement was similar.

There were several sawmills in Helena Township. The first mill in Alden, owned by the Berry Brothers and operated by water power, was located where the north and south road on the east edge of town crosses over Spencer Creek. A much larger mill operated by steam power and owned by R. W. Coy, was located on the site of the present depot.

In later years there were other saw mills. David Soper of Kalkaska brought in a mill, which he operated for a while, later sold to a man by the name of Ayers, who in turn sold it to Foster and Company. This was located north of Alden in an area which was known as the “slab docks”.

Andrew F. Anderson of Clam River also owned and operated a steam mill on the north shore of Clam Lake for the manufacture of lumber. It later burned and Mr. Anderson rebuilt about where the present old boat houses are on the north side of Clam River. Then, approximately 1887, it too was destroyed by fire.

Many logs were brought to the mills by means of two big wheels ten feet in diameter constructed in a cart form with a long tongue. The logs were slung under the axle. A pair of these big wheels can be seen today at Mancelona beside the railroad in the center of town. Other vehicles were also used: drays, log boats, sleighs, and wagons, depending on the season of the year. [2]

The Albatross today

Today, the Albatross lies semi-intact in the Elk River. There are scattered remains of another vessel further upstream and more research is required to determine if it is one of the other two tugs used by the Elk Rapids Iron Company although the condition of the remains might make positive identification impossible. Using historical accounts, a visual inspection, and using a best guess in dendrology, the Albatross was constructed using solid oak (white oak) for the spar, main and cross beams. The cross beams were carved out to stabilize its high-wing top, giving it the name “Albatross” and are still visible in their original installed locations. Decking was primarily oak boards of medium length (12-16 feet). While some of the roof boards appear to be pine they have severely deteriorated, and most have since disappeared. The starboard side gives a good representation of the decking layout.

The port side of the vessel has more exposure to the river current and the sand has been scoured out in
many areas making it more visible to the hearty strength of the vessel’s construction. The beams measure over 6” wide and are 6-8” in height and tied together with bars similar to ¾” rebar. Scuppers were cut out to facilitate water runoff from the deck on the port side and are visible in one of the pictures.

The stern boards have fallen away from the metal bracing that held them in place. They have rotted and expanded out due to the prolonged exposure to the water of Elk River. There were 12 boards on both port and starboard sides and were made of oak. They are 1” thick and 6” in width. There’s no evidence of how the bottom crossbeams were attached to the main rods that stretch across the vessel. Large spikes were used along the edge of the vessel to attach the cross members (supporting the floorboards) and many of them are still visible.

**Historical photos of the Albatross**

*Vessel Torch Lake in upper harbor of Elk Rapids*

*Albatross in the Clam River*

*Albatross circa 1900*

*1953 aerial photo showing sunken Albatross*

*Photo from: Antrim Steamers by Walter C. Cowles*

*Photos courtesy Elk Rapids historical society - Elk Rapids, Michigan*
Current photos of the *Albatross*

*Stern section*

*Kayaking above the stern*

*Deck covering part of starboard side*

*Deck covering part of starboard side*

*Port side*

*Bow section*

*Photos (6) by Chris Doyal*
The Location of the Albatross

Maps (5) from Google Earth
The Location of the Albatross

The wreck of The Albatross is located in the Elk River near the village of Elk Rapids, Michigan. The GPS coordinates are: 44° 53’53.69” N and 85° 24’27.51” W.
The Location of the Albatross

The wreck of the *Albatross* is located almost due east from a public boat launch on US 31.

The site is subject to heavy boat traffic.

The wreck is easily seen from the surface.

*photos (3) by Chris Doyal*
Site Conditions at the *Albatross*

Photo taken May 5, 2009

Photo taken June 29, 2009

*Photos (2) by Chris Doyal*
The survey of the wreck was completed in five sessions. The initial photography was done earlier in the year for the purpose of documenting the Albatross for the Grand Traverse Bay Underwater Preserve and thus, no scale was used. The first project session consisted of simple measuring, photography, and sketching. After this initial reconnaissance, the team decided on trilateration as the more appropriate method of measuring the Albatross. Trilateration was the simplest and most accurate method given the poor visibility and the presence of a mild current. During the second session, a baseline was laid down with markers at 5 foot intervals. The baseline started at the bow of the wreck and went to the stern. The shape of the vessel made it difficult to maintain a straight line from bow to stern as there was a slight break at mid-ship so the best line was estimated using visual sighting. Measurements were taken at various points on the baseline and skipped 1 or 2 points between measurements to...
Underwater Survey - Measuring

the top of each rib. The *Albatross* (aptly named for its high-wing configuration) was difficult to measure on the starboard section due to the high-wing laying on the exact line used to measure the end points. Every attempt was made to look through the planks and establish the tops of the ribs. During the third and final session, the aft third of the wreck was measured. The stern area of the vessel was a challenge to measure because the wood eventually expanded and broke away from the transom so traditional measurements from many different points. 56 points were then imported into Trimble’s Terramodel but two or three points didn’t seem to fit. This was possibly due to the poor visibility making underwater communication between the divers difficult.

*Photos (5) by Chris Doyal*
### Underwater Survey - Measuring

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Points shown in Site Recorder 4
Underwater Survey - Photo Mosaic

It was decided that a major component of the project would be photomosaics of various portions of the site. A mosaic of the entire site would not be attempted due to the shallow water depth of the wreck. Some of the deck boards are only a couple of feet below the surface making this type of photography impossible.

On August 10, 2009, 148 digital photos were taken. Each exposed frame overlapped the previous frame by at least 25% to ensure a smooth blend when they were all merged together.

The images were opened in Adobe Bridge and then pre-processed in Adobe Camera RAW where they were color corrected and reduced in size to allow for faster, more efficient processing in Photoshop. They were then opened in Adobe Photoshop CS4. After an initial trial of merging ten images, it was apparent that there was a significant problem. No matter which options were tried in the “automate > photomerge” dialog box in Photoshop, the majority of images would not merge together.

Thinking that the problem lay with either not overlapping frames enough or the camera not being kept completely parallel, another series of photos were taken on August 15, 2009. More care was taken to ensure the camera was level and the photos were overlapped by 50% on this series. These were taken using a floating device built by the photographer that would hopefully keep the camera parallel to the wreck. The same Photoshop process was used with only minor improvement in the results. After consulting with underwater photographers on the website, www.wetpixel.com, other software was utilized such as Panorama Maker 5 and Hugin. Neither programs produced better results that in Photoshop. A composite simply could not be created using more than 5 frames with any software.

A theory formed that maybe the problem lay with the depth of the wreck. At this shallow depth, objects sticking straight up toward the surface change perspective and distort in sequential frames and create problems when merged. This may be caused by the wide angle lens used. The Albatross’ average depth is 4-6 feet and the height of the wreck varies greatly from 2-10 feet. On August 20, 2009, another attempt was made on a nearby shipwreck of the Metropolis. It sits in 10 feet of water but is much flatter. Similar results were achieved. A phone call to the Thunder Bay National Marine Sactuary’s photomosaic specialist confirmed this. They do not attempt to create a mosaic on sites shallower than 20 feet for this very reason.

It may be possible to achieve better results using a narrower lens that produces a flatter, less distorted image but rapidly deteriorating weather this season will prevent any further experiments. Upon further review of all images taken, it is obvious that the technique still needs to be perfected to ensure the camera is parallel.
Underwater Survey - Photo Mosaic Samples

Mosaic samples created automatically in Photoshop of the Metropolis and the Albatross

Photos (3) by Chris Doyal

Mosaic samples created manually in Photoshop of the Albatross
Summary

The *Albatross* should be treated as a fragile site and divers should not be encouraged to visit it. The vessel’s location in close proximity to the water’s surface along with constant exposure to freeze/thaw has increased the speed of deterioration. Unfortunately, its accessibility to divers of all skill levels will contribute to this. It is not recommended that the site be permanently buoyed.

If more funds become available, sector scan imaging would be very appropriate at this site. Since it was impossible to photograph the *Albatross* with one photo, a sector scan image would be an excellent choice for obtaining an overall image. It would also illustrate the relationship of the deck section to the main wreck with more accuracy than the illustration. The other debris field to the south warrants further investigation - possibly as an addendum to this report.

Appendix - Dive Log

Dive Log

**Preliminary Photography**

Chris Doyal - Snorkel        Julie Doyal - Safety observer in kayak
May 3, 2009

**Survey Photography - Sketching**

Greg MacMaster and Chris Doyal - Snorkel      Dr. Mark Holley - Safety observer in water
June 29, 2009

**Sketching**

Devin O’Meara - Snorkel      Chris Doyal - Safety observer in kayak
July 18, 2009

**Mosaic Photography**

Chris Doyal - Snorkel        Julie Doyal - Safety observer in kayak
August 10, 15, and 20, 2009

**Trilateration Measuring I**

Greg MacMaster and Chris Doyal - Scuba
August 26, 2009
Chris Doyal  8:45 - 10:45     In 2000 psi  Out 900 psi
Greg MacMaster  8:45 - 10:45     In 1500 psi  Out 300 psi

**Trilateration Measuring II**

Greg MacMaster, Chris Doyal, and Devin O’Meara - Scuba/Snorkel
September 13, 2009
Devin O’Meara  3:20 - 3:50     In 3000 psi  Out 1900 psi
Greg MacMaster  3:15 - 3:55     In 2900 psi  Out 1750 psi

Appendix - Bibliography

Appendix - Underwater Sketches

Bow and Starboard showing decking by Greg MacMaster

Deck section by Chris Doyal

Stern section by Greg MacMaster

Top of ribs where points were measured by Chris Doyal
Appendix - Underwater Trilateration Measurements

Survey points taken by Greg MacMaster, Chris Doyal, and Devin O’Meara
Appendix - Historical Documents

Albatross Master Carpenter’s Certificate

District of Buffalo Court

PLACE

Buffalo

JUNE 14TH, 1880

I, Geo. H. Wright, Master Carpenter, of Buffalo, New York, do certify that the Vessel named the Albatross, was built by order of the Board at Buffalo, New York, during the Winter of 1879-80, for the 7th Captains from Ear of J.B. Rogers, Worm.

that said Vessel is vessel built, has been deck, 20 masts, is 68 feet in length, 15 feet in breadth, 5 feet in depth, of

Count 900, 100 tons burden.

As witness my hand the day and year aforesaid.

Edward

T. A. Smith
Appendix - Historical Documents

Albatross Tonnage Measurement

Cat. No. 953.

District of Buffalo Dist.
Port of Buffalo N.Y.
United States of America.

June 14, 1880.

John Styers
Collector of Customs.

TONNAGE ADMEASUREMENT

OF THE

*American Steer*

CALLED THE

Albatross

of Elk Rapids

Mich.

* Insert nationality and rig of vessel.
To all to whom these Presents shall come, Greeting:

Know Ye, That on the 1st day of June, 1851,

of the City of Buffalo in the State of New York, and sole owner of said vessel called the "Albatross,"

of the tonnage of two hundred and forty tons or thereabouts, for and in consideration of the sum of Sixty Thousand Dollars

lawful money of the United States of America, to me in hand paid before the ensailing and delivery of these presents, by the "Albatross,"

the receipt whereof I do hereby acknowledge, have granted, bargained and sold, and by these presents do grant, bargain and sell, unto the said "Albatross,"

executors, administrators and assigns, the whole and every goods, chattels and effects of said vessel, together with all appurtenances and belongings. The certificate of the enrolment of which said vessel is as follows:

ENROLMENT.

Albatross Enrolment Certificate
Appendix - Historical Documents

Albatross Report and Manifest

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Date: Buffalo, Jan 1, 1880.
