

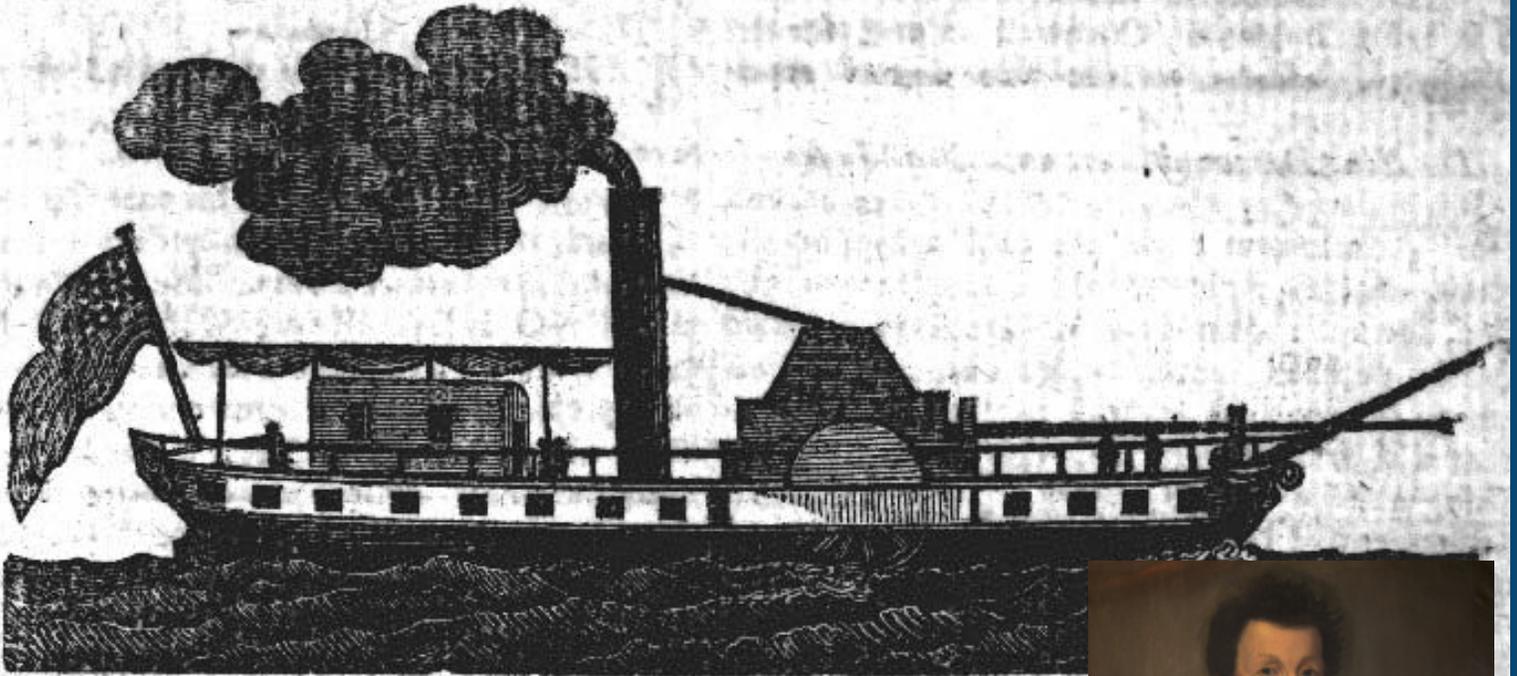
# Discovering the Paddlewheels of the 1815 Steamboat *Phoenix*

A report by Lake Champlain Maritime Museum

September 2020



# LAKE CHAMPLAIN STEAM-BOATS



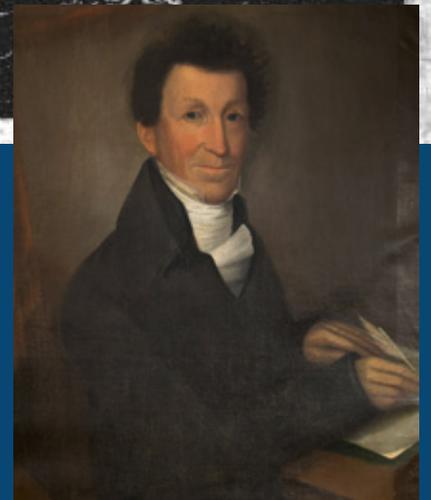
## CONSTRUCTION & CAREER OF THE PHOENIX

Sherman's first steamboat, *Ticonderoga*, was purchased by the U.S. Navy and converted into an armed sloop of war for the War of 1812. His second, started quickly after the end of the war, was the *Phoenix*.

The keel for *Phoenix* was laid down at the former naval shipyard in Vergennes in 1814. Measuring 44.5 meters (146 feet) in length with a 45-horsepower steam engine, the *Phoenix* engine was twice as powerful as that of *Vermont*. *Phoenix* replaced *Vermont* in the passenger and freight route that ran from Whitehall, New York to St. Johns, Quebec with Burlington, Vermont and Plattsburgh, New York as mid-point stops.

In 1817, passage from Whitehall to Burlington or from Burlington to St. Johns cost \$5, with discounts available for children, servants, animals, and passengers traveling shorter distances. The Lake Champlain Steamboat Company published freight rates for several common cargoes, and rates for other items were at the discretion of the captain. The steamer offered opulence to its passengers, with separate cabins for men and women, a "saloon" beneath the stairs, a barbershop, and smoking lounge, among other amenities.

As the pinnacle of Lake Champlain navigation, *Phoenix* was chosen to transport President James Monroe during his national tour through the region in July 1817.



Top: Lake Champlain Steamboat Company Poster, April 30, 1817 (detail).  
Middle: Captain Jahaziel Sherman of Vergennes, artist unknown, ca. 1810.  
Bottom: President James Monroe by Gilbert Stuart. Oil on canvas, 1820-22. Metropolitan Museum of Art Collection

## SEPTEMBER 4, 1819: THE FIRE

On September 4, 1819 at 11 p.m., *Phoenix* left Burlington for Plattsburgh with 46 passengers and crew under the command of Captain Richard Sherman, Jahaziel's son. As the vessel proceeded north into a freshening north wind, an unusual glow in the midships galley provided the first warning that a fire had broken out on board. Discovered too late, the fire spread rapidly. Sherman and his crew quickly realized they would not be able to save *Phoenix*. The passengers were roused from their cabins and loaded into two small boats. In the confusion, a dozen people, including the captain, were left to fend for themselves on the burning ship. As the fire grew more intense, they were forced to abandon ship and cling to floating debris.

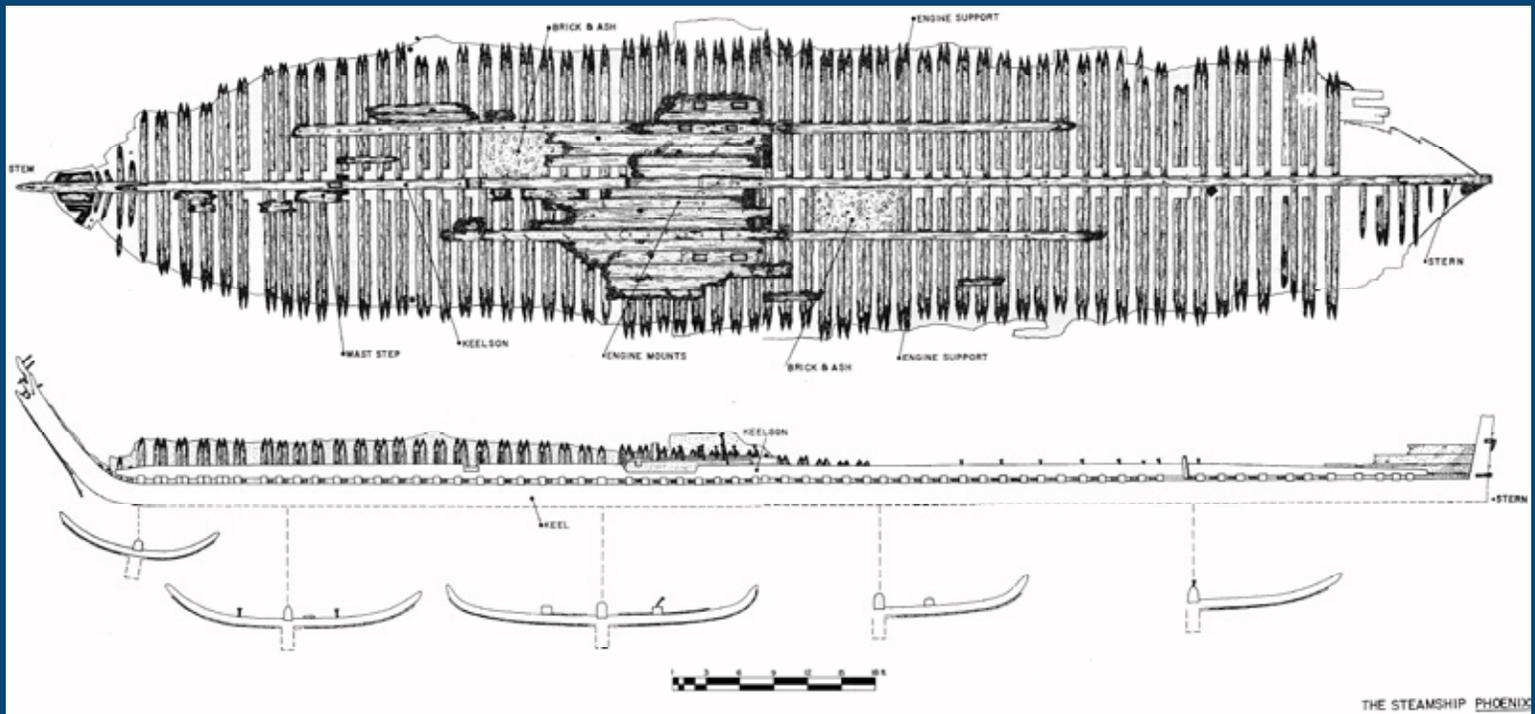
Sherman and several others were rescued from the lake in the morning, but six others perished in the lake's cold, dark waters. The cause of the fire is said to have been a candle carelessly left burning between shelves in the pantry. However, circumstantial evidence suggests that the fire may have been intentionally set by competing lake sailing interests.

The flaming hull of *Phoenix* continued to burn through the night as it was driven south by the stiff northerly wind. When boats returned to the hull in the morning to search for survivors, they found that the blackened remains of *Phoenix* had been driven south by the north wind and had come to rest on Colchester Shoal. Remarkably, the valuable steam machinery which remained on board was recovered from the charred remains, refurbished at Monkton Ironworks in Vergennes, and went on to power *Phoenix II* built by Jahaziel Sherman in 1820, based on the same design as its predecessor.

During the winter of 1819-20 the charred hull remains of *Phoenix* were trapped in ice and dragged partially off of Colchester Shoal. The wreck was not rediscovered by scuba divers and researchers until 1978. The first archaeological documentation of the *Phoenix* remains took place in 1980 by a team from the Champlain Maritime Society, a predecessor organization to Lake Champlain Maritime Museum.



Painting depicting the Steamboat Phoenix by Vermont artist Ernie Haas.

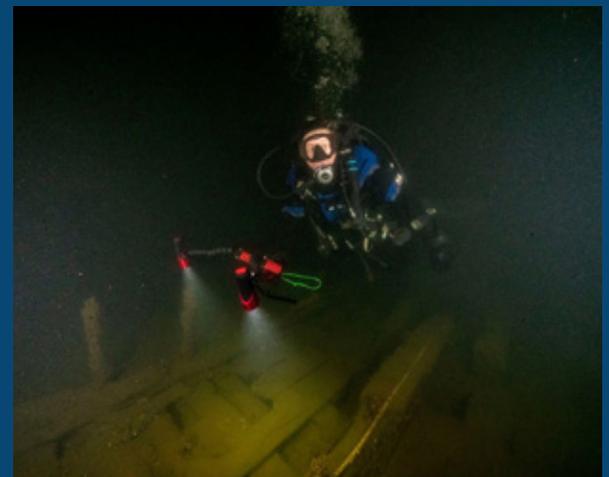


## VERMONT UNDERWATER HISTORIC PRESERVES

In 1982, *Phoenix* was reborn as a public dive site through its incorporation in the Vermont Underwater Historic Preserves under the management of the Vermont Division for Historic Preservation.

The preserves system provides for safe access to the shipwreck for public scuba divers through a secure mooring system and a guide rope down to the site. This system also protects the wreck itself, as it negates the need for dive vessels to drop anchor blindly, which could potentially hook on wreckage and damage the site. Thirty-eight years later, the *Phoenix* site remains popular with scuba divers and regular dive charters are run to the site each summer.

The *Phoenix* hull remains were listed on the U.S. National Register of Historic Places in 1998. In 2009 and 2010, George Schwarz of Texas A&M University led extensive field documentation efforts and produced a digital reconstruction of *Phoenix*. This study led to a refined understanding of the vessel's construction as well as its place in the history of steam technology of North America. Dr. Schwarz's dissertation was released as a popular publication in 2018.



Top: 1980 Phoenix site plan by Kevin Crisman  
 Left bottom: Hull of the Phoenix by Pierre LaRoque  
 Right bottom: George Schwarz dives on the Phoenix



## DISCOVERY & IDENTIFICATION OF THE PADDLEWHEELS

Until the late summer of 2020, it was assumed that the charred hull remains were all that was left of steamboat *Phoenix* and that all other parts, including the two iconic paddlewheels, were lost to the fire. Steamboats paddlewheels were mounted outside of the hull on either side and required special structures to support them. Though paddlewheels were heavy, they were also fragile and needed to be protected from debris and impacts. Protective timbers, called guards, were added outboard of the paddlewheels. The guard not only protected the wheels but also provided a place for supporting deck beams to attach outboard and enclose the paddlewheels, providing further protection and security.

On August 28, 2020, Gary Lefebvre, a local shipwreck researcher, performed a dive nearby Colchester Shoal with his Remote Operated Vehicle (ROV) on a curious sonar target he had located earlier. Gary recorded a short video of the structure that he had located in 180 feet of water and sent a short clip of the video to Chris Sabick, Director of Research and Archaeology at Lake Champlain Maritime Museum. Sabick excitedly confirmed that it was an interesting target and that it appeared to be the paddlewheel assembly from an early sidewheel steamboat. After conferring with Lefebvre about location of his find (about  $\frac{3}{4}$  of a mile north of Colchester Shoal) he began to suspect that it might be a paddlewheel from *Phoenix*. Upon review of a longer video clip, evidence of extensive charring was noted and the connection to *Phoenix* became more obvious.

Sabick engaged in extensive discussions with Dr. George Schwarz and Dr. Kevin Crisman of Texas A&M University. They agreed that based on the construction of the paddlewheel, its location in relation to the *Phoenix* hull remains, and the presence of extensive charring this was a paddlewheel from *Phoenix*.

That revelation immediately begged the question, “Is other paddlewheel is out there too?”



(Continued on the next page)

When this line of reasoning was relayed back to Lefebvre, he determined to continue to check sonar targets in the same area to answer this question. On August 31, 2020, Lefebvre located a second charred paddlewheel just 100 meters south of the first paddlewheel. While less structure was visible surrounding this paddlewheel, more of the wheel itself was exposed. A portion of the drive shaft for this wheel is still attached to the flange, or hub of the wheel.

On September 6, two technical divers carried out a dive on the paddlewheels and recorded additional video documentation. They were able to record several measurements of the paddlewheel which will aid in understanding of the structures.



With this in mind, we can now re-imagine the scene in more complete, vivid, painful detail:

It is September 5th, 1819, a little after midnight. The night air over Lake Champlain is shattered by fire and cries for help. Phoenix is drifting dead in the water north of Colchester Shoal and burning furiously, the flames fed by a strong north wind. Lifeboats have been deployed and those passengers and crew that failed to get on them have jumped into the water and are floating on debris or swimming for their lives. As the center of the vessel burns, the supporting structures that hold up the guards and paddlewheels begin to fail. Then, one after the other, the paddlewheels begin to sag off the sides of the vessel and eventually they tear loose and drop to the bottom of the lake. The remaining hull burns to the water line while slowly drifting south, eventually coming to rest on the Shoal itself. Later, ice will drag the charred hull remains partially off the shoal and deposit it where it now rests.



Top images: Paddlewheels by Michael Macdonald  
Bottom image: Close-up of charred wood and rusted iron band on a paddlewheel by Gary Lefebvre



## NEXT STEPS: FUTURE RESEARCH & PRESERVATION

The discovery of both paddlewheels from the steamboat Phoenix and the remarkably preserved evidence of the fire that consumed the ship refocus our attention on one of the most tragic maritime accidents in Lake Champlain's history. The extent of the charring visible on these structures speak to the intensity and speed of the fire that gutted Phoenix.

Lake Champlain Maritime Museum will be pursuing several new avenues of research for the future to document, preserve, and share this unique discovery:

- **Documentation and Modeling:** Using ROVs to carefully document the paddlewheels will result in 3D models of them that will present a better understanding of the construction of this historic vessel
- **Sonar and Magnetometer Survey:** An intensive Sonar and Magnetometer survey of the area around the paddlewheels, and in the area between the paddlewheels and Colchester shoal, will be conducted to determine if there might be other components of Phoenix that dropped off as it drifted south
- **National Register Modifications:** Modifications will be made to the Phoenix National Register of Historic Places nomination form to include these new discoveries, as well as providing the opportunity to update the information included in 1998 with information generated through Dr. Schwarz's work in 2009-10.

FOR MORE INFORMATION ON LAKE CHAMPLAIN, VISIT:

[www.lcmm.org](http://www.lcmm.org)

## LAKE CHAMPLAIN MARITIME MUSEUM

Founded in 1985 with the mission to preserve and share the cultural and natural heritage of the Lake Champlain region, Lake Champlain Maritime Museum is building a healthy future and community for Lake Champlain. Through education, exhibits and historic boats, research, and collections, the Museum connects people to the region's history, ecology, and archaeology and creates opportunities for hands-on learning that will last a lifetime. Year-round education programs serve more than 2,500 K-12 students, as well as hundreds of educators locally and nationally. For more information, visit [www.lcmm.org](http://www.lcmm.org).

## LAKE CHAMPLAIN UNDERWATER HISTORIC PRESERVES

All underwater historic sites in Lake Champlain belong in public trust to the people of the respective states in whose water they lie. The Lake Champlain Underwater Historic Preserves, founded in 1982, provides public access for divers to some of the Lake's historic shipwrecks. The Vermont Survey Archaeologist supervises the program with the aid of the Lake Champlain Maritime Museum, U.S. Coast Guard, Vermont State Archaeologist, State of New York officials, and a team of dedicated professionals who volunteer their expertise and time. Essential to the success of the program is the public partnership, with registered divers identifying and monitoring these preserves.

