

Battle of Convoy KS-520 - 74 Years Later



NOAA's Maritime Archaeologist and the expedition's Chief Scientist, Joe Hoyt, taking pictures of U-576 from inside Project Baseline's two-person submersible.

Photo: Courtesy Robert Carmichael, Project Baseline

North Carolina—Where the War Came Home

Due to the great number of ships that met their demise in the turbulent waters off North Carolina's coast, the area is often referred to as the Graveyard of the Atlantic. In 1942, the area began to get a second nickname. Just six weeks after Japan bombed Pearl Harbor, German U-boats began sinking ships off the North Carolina coast. There were so many ships torpedoed that it wasn't long before the area near Cape Hatteras was coined 'Torpedo Junction.'

One of those attacks occurred on July 15, 1942, when Convoy KS-520, with 19 merchant ships and five escorts, was

sailing near Cape Hatteras to Key West when the convoy was spotted by a German U-boat, U-576. Before the U-boat could fire its torpedoes, one of the U.S. Coast Guard Cutters saw it and began to drop depth charges. U-576 fired four torpedoes into the convoy. Two rocked the *Chilore*, one hit the *J.A. Mowinckel* and the fourth struck the *SS Bluefields*, which sank within minutes.

U-576, previously damaged, surfaced in the middle of the convoy and the *Unicoi* opened fire while two U.S. Navy Kingfisher aircraft dropped depth charges, thus sending U-576 to the bottom of the sea with all 45 crew members.

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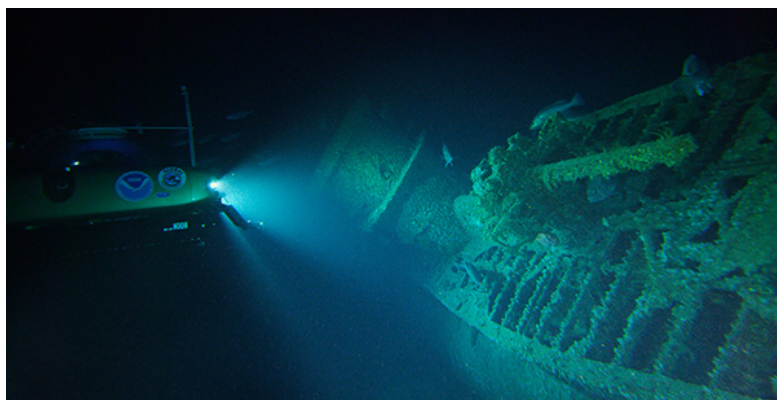
After years of searching for the elusive naval battlefield and the remains of U-576 and SS *Bluefields*, NOAA maritime archaeologists discovered their final resting place in 2014 while using high resolution surveys. The two ships lie within 240 yards of each other just 35 miles offshore in about 750 feet of water. After their discovery, both were nominated for and placed on the National Register of Historic Places.

This summer, NOAA assembled a team of partners and visited the remains of both U-576 and *Bluefields*. [Project Baseline](#), a global conservation non-profit, supplied the research vessel, *Baseline Explorer* and two manned submersibles. Additional funding was provided through a grant from NOAA's [Office of Ocean Exploration and Research](#) and the [Bureau of Ocean Energy Management](#). The generous support of partners made it possible for these two shipwrecks to be seen for the first time in 74 years.

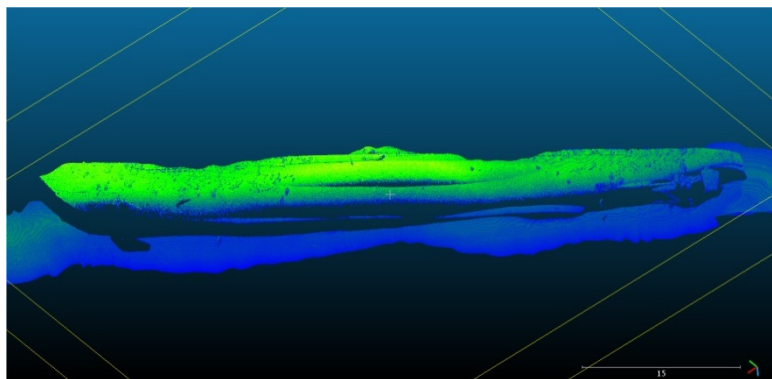
Using the submersibles, researchers collected photos, video and other data that will help to visualize and virtually recreate the underwater battlefield. Underwater



Project Baseline's manned submersible, *Nomad*, is hoisted aboard R/V *Baseline Explorer* after resurfacing from a dive. Photo: Courtesy of Dave Sybert, UNC CSI—Battle of the Atlantic Expedition



During the first dive of the expedition, scientists located and explored the German U-boat, U-576. Here Project Baseline's *Nemo* submersible shines its lights on the U-boat. Photo: Courtesy of John McCord, UNC CSI—Battle of the Atlantic Expedition



Initial data from first pass laser scanning showing a laser point cloud of U-576. Image Courtesy of 2G Robotics—Battle of the Atlantic Expedition

robots and advanced remote sensing technology, provided by [2G Robotics](#) and [SRI International](#), generated bathymetric data and detailed acoustical models of the wreck and surrounding seafloor. University of North Carolina [Coastal Studies Institute](#) also provided three-dimensional modeling of the wrecks.

"This discovery is the only known location in U.S. waters that contains archaeologically preserved remains of a convoy battle where both sides are so close together," said Joe Hoyt, Monitor National Marine Sanctuary Maritime Archaeologist and Chief Scientist for the expedition.

"The significance of these sites cannot be overstated," said David Alberg, Superintendent of Monitor National Marine Sanctuary. "This area off North Carolina is the best representation of a World War II battlefield off the East Coast. Now, working with our partners, we have an opportunity to study it, characterize it, and, like other historic battlefields in this country, hopefully protect it."

Unfortunately, a tropical depression and a tropical storm on its heels ended the expedition early. However, the expedition yielded some amazing video, photos, and laser scans of U-576 and SS *Bluefields*. To learn more about the expedition, read the daily blogs and view an amazing photo gallery, visit <http://go.usa.gov/xkHYX>. To learn more about U-576 and SS *Bluefields*, check out our shipwreck website, <http://go.usa.gov/xYdwY>, for these and more World War II shipwrecks off North Carolina's coast.



A Merchant Seaman Remembers

In August, a special guest joined the Battle of the Atlantic Expedition adding a real-life and personal perspective to the ongoing archaeological exploration. World War II merchant seaman and Navy veteran, Louis Segal, has always had an adventurous spirit, and at the young age of 92, he began a new adventure. He made the long trip from his home in San Diego, California to Ocracoke Island, North Carolina to join the crew on board the R/V *Baseline Explorer*. After several days of travel, on August 26, Mr. Segal finally stepped precariously from the small transport boat onto the research vessel. He had a huge grin on his face as he made the step, and the expedition team clapped and cheered to have him on board.

Mr. Segal has had an unquenchable thirst for adventure dating back to 1940, where at the age of 17, he applied to join the U.S. Navy. He wanted to travel the world and live like the sailors in the movies, but he was turned down because he was too skinny. After about 18 months working at Kraft Manufacturing, he succeeded in putting on some weight, and in September 1942, he applied at the United States Merchant Marine Academy. Just to make sure he had gained enough weight, he ate five bananas right before the physical exam, and that did the trick, he passed the exam. Soon, Mr. Segal found himself on board a ship as a cadet midshipman heading to England, where he celebrated his 19th birthday.

During Mr. Segal's time at the academy, he sailed on two merchant vessels before graduating in April 1944. Mr. Segal admits to being scared in the beginning as he saw ships sink in battle. "But you get used to the fear, and I never thought my ship would go down," he said. After graduation, Mr. Segal received special permission to join the Navy and was commissioned as an Ensign. He served in the Navy for 12 years on five destroyers and two aircraft carriers through the end of World War II and the Korean War. He retired from the Navy in 1956.

After leaving the Navy, Mr. Segal got his MBA at Stanford, and then worked at Hughes Aircraft for 23 years, where he worked on programs involving submarines, radars, missiles and even a spacecraft headed for Venus. He retired in 1987. He has two sons and four grandchildren that have all made him very proud. Today, he spends his time going to the theater, playing bridge, and attending Stanford Alumni meetings...and looking for the next adventure.



Top: Louis Segal in the U.S. Navy, ca. 1949. Courtesy of Louis Segal Center
Center: Louis Segal sits on the deck of R/V *Baseline Explorer* with Reed Bohne, Northeast Regional Director. Photo: NOAA
Bottom: Louis Segal talks with crew in the research vessel's galley. Photo: NOAA
Left: Louis Segal, WWII veteran and merchant seaman observed operations aboard R/V *Baseline Explorer*. Photo: Courtesy John McCord, UNC Coastal Studies Institute
Bottom Right: Louis Segal visited the British Cemetery on Ocracoke Island. Photo: Ricles, NOAA

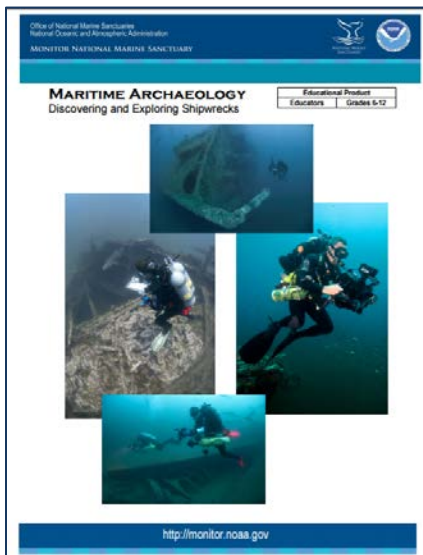


Education News

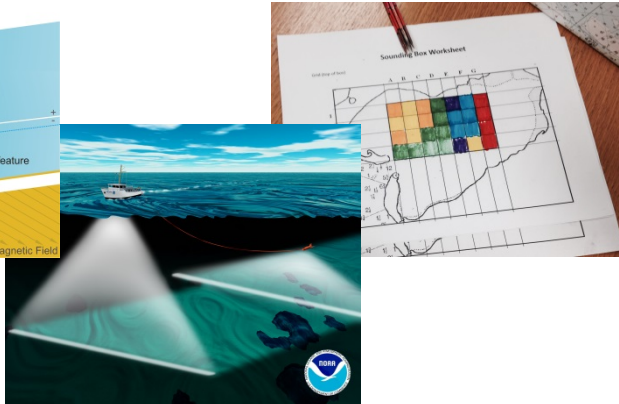
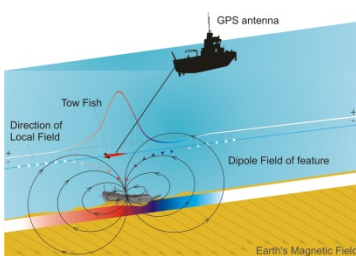
Due to the Monitor National Marine Sanctuary's location and harsh conditions, it is impossible for most people to visit the sanctuary. However, through partnering museums and our educational offerings, you can dive into *Monitor's* history, discovery, recovery, conservation and more. To learn more about the USS *Monitor*, [find a museum](#) with *Monitor* exhibits, or visit the [teacher](#) and [student](#) sections of our website for lesson plans, activities, videos, posters, brochures and curricula that will help you explore the many facets of USS *Monitor*.

★ NEW Curriculum

Our latest educational offering is a free curriculum guide, [Maritime Archaeology: Discovering and Exploring Shipwrecks](#). The STEM curriculum introduces students to the world of NOAA and its Maritime Heritage Program. Throughout the guide, students learn 1) why shipwrecks are important, 2) about the tools and science used to discover and study shipwrecks, 3) about the complex and costly process of recovering and conserving artifacts, and 4) how NOAA works to protect our nation's maritime heritage. Although the curriculum is designed to be taught as a unit, each lesson can stand on its own and is aligned with national standards. Click on the link above to download your copy. For more information, contact Shannon Ricles, Education and Outreach Coordinator, at Shannon.Ricles@noaa.gov.



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NOAA's Maritime Heritage Program	20	Magnetometers	97
Learn how NOAA helps to protect our nation's maritime heritage		Understand how magnetometers are used	
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Learn about the advancement of ships		Section E: Documenting Shipwrecks	
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Understand how shipwrecks connect us to the past		Create a photoessay	
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Learn its history		Section F: What's Next	
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Discover the early pioneers of underwater archaeology		Determine what makes a shipwreck historically significant	
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Searching the Deep Seabed	62	Explore the ethics of shipwrecks and learn about some of the tools that protect them	
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Plotting the Course	64	Learn when, why and how artifacts are recovered, cleaned, stored, labeled, inventoried, and put up for display	
Side Scan Sonar	72	Conservation and Conservators	155
Understand how technology is used in searching and documenting shipwrecks		Understand the complex process of conservation (Protecting, Conserving, and Preserving)	



ANCHOR Partners

The ANCHOR (Appreciating the Nation's Cultural Heritage and Ocean Resources) program is an outreach and conservation initiative with a mission to work in partnership with dive businesses and charter operators to reduce human impacts on shipwrecks and other maritime heritage resources.

Monitor National Marine Sanctuary is committed to working with the state, local community, and divers to preserve and promote North Carolina's maritime heritage. One of the most powerful ways to protect North Carolina's shipwrecks for future generations is by educating local businesses on the value of shipwrecks as historic and economic resources and giving them tools to interact with them responsibly.

To learn more about the ANCHOR program, visit <http://monitor.noaa.gov/involved/anchor.html>.

Current ANCHOR Operators



Click to visit [Discovery Diving's](#) web site



Click to visit [Roanoke Island Outfitters and Dive Shop's](#) web site



Click to visit the website for [Rum Runner Dive Shop](#)



Click to visit the website for [Under Pressure Diving](#)

For information on how to become an ANCHOR operator, contact Tane Casserley at Tane.Casserley@noaa.gov.



Artifacts and the Personal Connection

From 1977 to 2002, expeditions to the *Monitor* produced approximately 1,600 artifacts. The *Monitor* Collection is one of the most massive collections of artifacts ever recovered. The collection includes an amazing variety of objects and materials, including enormous wrought and cast iron components, copper, bronze, brass, delicate glass bottles, lumps of coal, wood furniture and paneling, a leather book cover, shoes and a boot, clothing, and even food remains. The iron objects alone represent almost 200 tons of material.

During the excavation of *Monitor's* revolving gun turret in 2002, archaeologists and conservators discovered twenty-four pieces of silverware that offered a very personal link to the *Monitor* sailors. All are of silver or silver-plated and all are of different patterns which possibly indicates that they were brought from the sailors' homes. Some pieces of silverware were engraved with the names or initials of crewmembers or officers who served aboard the *Monitor*. A few pieces of silverware carry the names of sailors, who perished the night of the sinking. Among them are:

- A spoon bearing the initials "NKA." In November 1862, Norman Knox Attwater, Acting Ensign, came on board the *Monitor*. He was originally from New Haven, Connecticut.
- A fork with the engraved name "G. Frederickson." George Frederickson came to the *Monitor* at the beginning as Master's Mate. In November 1862, he was promoted to Acting Ensign.
- Three pieces of tableware recovered bear the initial "SAL" as well as "USN." Samuel Augee (or Auge) Lewis was from Baltimore and arrived in November 1862. He reported to the *Monitor* as a 3rd Assistant Engineer.
- A large silver spoon bears the initials "JN." It most likely belonged to Jacob Nicklis, a 21 year-old sailor from Buffalo, New York.

In all, over 30 pieces of tableware, along with the remains of a drawer and chest, have been recovered. Today, they can be seen, along with other *Monitor* artifacts, at [The Mariners' Museum](#) in Newport News, Virginia. Conservators and historians are not sure how these pieces of tableware came to be in the turret. One theory suggests that one or more men were trying to bring the ship's silver chest with them, but thought better of it once they tried to escape the turret as the ship was sinking. Another theory might be that the chest fell into the turret sometime after the sinking. However, no matter how the pieces of tableware came to be inside the turret, they forever offer a personal and emotional connection to the brave men who served on the *Monitor*.



Researchers are puzzled why so many items of silverware were found deep inside the turret. Photo: Courtesy of The Mariners' Museum



Above: A spoon is shown exactly where it was uncovered in the deep concretion of the turret roof. **Below:** A spoon before and after conservation. Photos: Courtesy of The Mariners' Museum



Left to Right:

L: Conservator holds one of the silver spoons found in the turret.
 C: Silverware before conservation.
 R: Four pieces of silverware bearing name or initials (left to right—fork with "G. Frederickson," spoon with "NKA," large spoon with "JN," and fork with "SAL/USN.")
 All Photos: Courtesy of The Mariners' Museum



Clockwise Above: Aviation Day—parachutist opens the event with the Stars and Stripes at Wright Brothers National Memorial, Kill Devil Hills, North Carolina. Civil War Color Guard at the National Park Service sponsored Tides Game in Norfolk, Virginia. Booths on concourse at the Tides Game. All Photos: Ricles, NOAA

Outreach Events

The summer and fall were busy for Monitor NMS! Here are a few of the events we supported:

- August 19: National Park Service Centennial Celebration at [Wright Brothers National Memorial](#), Kill Devil Hills, North Carolina
- August 25: Monitor NMS joined [Ft. Monroe National Monument](#) at Harbor Park for a Norfolk Tides game in honor of the National Park Service Centennial Celebration
- September 10: [OBX PrideFest 2016](#) in Nags Head, North Carolina
- September 17: [Day at the Docks](#) in Hatteras, North Carolina
- October 15: [Outer Banks Seafood Festival](#), Nags Head, North Carolina
- October 22: AIA Archaeology Day in Richmond, Virginia

Upcoming Outreach Events

Stay tuned for more outreach events coming in the spring and summer editions!

For more information contact: Shannon Ricles at shannon.ricles@noaa.gov



Above and Right: Outer Banks PrideFest in Nags Head, North Carolina. Photos: Ricles, NOAA



Left and Below: The Day at the Docks in Hatteras, North Carolina. Photos: Ricles, NOAA



Above and Right: Outer Banks Sea Food Festival in Nags Head, North Carolina. Photos: Ricles, NOAA



Left and Below: Archaeology Day at the Science Museum of Virginia with Sanctuary Sam in Richmond, Virginia. Photos: Ricles, NOAA



Meet Your Sanctuary Staff

Joe Hoyt is a maritime archaeologist serving as a field tech and researcher for Monitor National Marine Sanctuary. Joe joined the sanctuary team in 2008 and each year he directs a team of partners in NOAA's Battle of the Atlantic Expeditions. These expeditions have documented and surveyed numerous North Carolina shipwrecks and led to the discovery of three shipwrecks, YP-389, U-576 and SS Bluefields.

Since 2001, Joe has worked on several NOAA projects in Thunder Bay, Florida Keys and Monitor national marine sanctuaries. He also worked on underwater archaeology projects in the Great Lakes, Atlantic and Pacific Oceans, and several inland rivers.

In 2004, Joe was awarded the North American Rolex Scholarship through the Our World Underwater Scholarship Society. In 2015, Joe received NOAA's Bronze Medal Award for superior performance and NOAA's Silver Medal for heroism.

Joe is also an avid photographer and diver, and has crewed documentary expeditions on BBC's Planet Earth and PBS. Joe holds an MA in maritime history and underwater archaeology from East Carolina University's Program in Maritime Studies.



Top Left: Joe Hoyt and Dr. Nathan Richards work on a set of site plans. Photo: NOAA; **Top Right:** Joe Hoyt and other NOAA divers prepare to dive on a shipwreck. Photo: NOAA; **Bottom:** Joe Hoyt on board a two-person submersible. Photo: Courtesy of Robert Carmichael, Project Baseline – Battle of the Atlantic Expedition

National Oceanic and Atmospheric Administration
National Ocean Service
Office of National Marine Sanctuaries
Monitor National Marine Sanctuary



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NATIONAL MARINE SANCTUARY SYSTEM



Scale varies in this perspective. Adapted from National Geographic Maps.

● National Marine Sanctuary
▲ Marine National Monument
■ Proposed National Marine Sanctuary



View a collection of fascinating photographs and an intriguing video each week from your national marine sanctuaries at <http://sanctuaries.noaa.gov/earthisblue.html>.

<http://monitor.noaa.gov>