

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: U-576 and BLUEFIELDS (shipwrecks and remains)

Other names/site number: MOTOR I, LAKE MOHONK, ASTMAHCO III, ORMIDALE, JUPITER

Name of related multiple property listing:

World War II Shipwrecks along the East Coast and Gulf of Mexico

(Enter "N/A" if property is not part of a multiple property listing)

2. Location

Street & number: Offshore

City or town: Offshore-Hatteras State: Offshore-NC County: Offshore-Dare

Not For Publication: ☐

Vicinity: ☒

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this x nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property meets does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

 X national statewide local

Applicable National Register Criteria:

 X A B C X D

Signature of certifying official/Title:

Date

State or Federal agency/bureau or Tribal Government

In my opinion, the property meets does not meet the National Register criteria.

Signature of commenting official:

Date

Title :

State or Federal agency/bureau
or Tribal Government

U-576 and BLUEFIELDS (shipwrecks and remains)

Name of Property

Offshore Dare, NC

County and State

4. National Park Service Certification

I hereby certify that this property is:

- ☐ entered in the National Register
- ☐ determined eligible for the National Register
- ☐ determined not eligible for the National Register
- ☐ removed from the National Register
- ☐ other (explain:) _____

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private:

☐

Public – Local

☐

Public – State

☐

Public – Federal

☒

Category of Property

(Check only **one** box.)

Building(s)

☐

District

☐

Site

☒

Structure

☐

Object

☐

U-576 and BLUEFIELDS (shipwrecks and remains)
Name of Property

Offshore Dare, NC
County and State

Number of Resources within Property

(Do not include previously listed resources in the count)

Contributing	Noncontributing	
_____	_____	buildings
_____2_____	_____	sites
_____	_____	structures
_____	_____	objects
_____2_____	_____	Total

Number of contributing resources previously listed in the National Register ____0____

6. Function or Use

Historic Functions

(Enter categories from instructions.)

TRANSPORTATION – WATER RELATED

Current Functions

(Enter categories from instructions.)

VACANT/NOT IN USE

U-576 and BLUEFIELDS (shipwrecks and remains)
Name of Property

Offshore Dare, NC
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7. Description

Architectural Classification

(Enter categories from instructions.)

N/A

Materials: (enter categories from instructions.)

Principal exterior materials of the property: N/A

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

See Continuation Sheets

Narrative Description

See Continuation Sheets

U-576 and BLUEFIELDS (shipwrecks and remains)
Name of Property

Offshore Dare, NC
County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☒ A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ B. Property is associated with the lives of persons significant in our past.
- ☐ C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☒ D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

- ☐ A. Owned by a religious institution or used for religious purposes
- ☐ B. Removed from its original location
- ☐ C. A birthplace or grave
- ☐ D. A cemetery
- ☐ E. A reconstructed building, object, or structure
- ☐ F. A commemorative property
- ☐ G. Less than 50 years old or achieving significance within the past 50 years

U-576 and BLUEFIELDS (shipwrecks and remains)
Name of Property

Offshore Dare, NC
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Areas of Significance

(Enter categories from instructions.)

MARITIME HISTORY

MILITARY

ARCHAEOLOGY - HISTORIC

Period of Significance

1942

Significant Dates

1942 (BLUEFIELDS operating in U.S. waters during WWII)

April-May 1942 (U-576 operating in U.S. waters during its fourth war patrol)

June-July 1942 (U-576 operating in U.S. waters during its fifth war patrol)

15 July 1942 (U-576 and BLUEFIELDS sank)

Significant Person

(Complete only if Criterion B is marked above.)

Cultural Affiliation

N/A

Architect/Builder

Manitowoc Shipbuilding Company, WI (BLUEFIELDS)

Blohm & Voss, Hamburg, Germany (U-576)

U-576 and BLUEFIELDS (shipwrecks and remains)

Name of Property

Offshore Dare, NC

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Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

See Continuation Sheets

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

See Continuation Sheets

U-576 and BLUEFIELDS (shipwrecks and remains)
Name of Property

Offshore Dare, NC
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9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

See Continuation Sheets

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____
- ☐ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- ☐ State Historic Preservation Office
- ☐ Other State agency
- ☒ Federal agency
- ☐ Local government
- ☒ University
- ☐ Other

Name of repository: National Oceanic and Atmospheric Administration's Office of National Marine Sanctuaries (Silver Spring, MD), East Carolina University's Program in Maritime Studies (Greenville, NC), and University of North Carolina's Coastal Studies Institute

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acreage of Property 138.996

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates

Datum if other than WGS84: _____

U-576 and BLUEFIELDS (shipwrecks and remains)

Offshore Dare, NC

Name of Property

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(enter coordinates to 6 decimal places)

1. Latitude: Longitude:

2. Latitude: Longitude:

3. Latitude: Longitude:

4. Latitude: Longitude:

Or

UTM References

Datum (indicated on USGS map):

☐ NAD 1927 or ☒ NAD 1983

1. Zone: 18N Easting: 453,367 Northing: 3,847,203

2. Zone: 18N Easting: 454,117 Northing: 3,847,203

3. Zone: 18N Easting: 453,367 Northing: 3,846,453

4. Zone: 18N Easting : 454,117 Northing: 3,846,453

Verbal Boundary Description (Describe the boundaries of the property.)

U-576 and BLUEFIELDS (shipwrecks and remains) rests 27.2 nautical miles south of Cape Hatteras, North Carolina at a depth of 690 feet and 750 feet respectively. The vessels' remains lie outside North Carolina state waters but still in United States' federal waters within the Exclusive Economic Zone. North American datum UTM coordinates for U-576 and BLUEFIELDS, shipwrecks and remains, are 453,742 East 3,846,828 North. This location marks the center of the property. The 138.996 acre site (a square 750 meters per side with boundary coordinates: northwest 453,367 E x 3,847,203 N, northeast 454,117 E x 3,847,203 N, southwest 453,367 E x 3,846,453 N, southeast 454,117 E x 3,846,453 N) includes the main structure and debris field surrounding the U-576 and BLUEFIELDS. See Map 1 and 2 for locational details.

Boundary Justification (Explain why the boundaries were selected.)

The National Register boundaries of the U-576 and BLUEFIELDS shipwrecks site encompass the footprint of both the German U-boat U-576 and Nicaraguan freighter BLUEFIELDS within a square (750 meters per side) to capture disarticulated remains and artifacts that are separated from the main structure. Surveys conducted by the National Oceanic and Atmospheric Administration's (NOAA) Office of National Marine Sanctuaries revealed the extents of the centralized structure surrounded by scattered debris set apart from the main structure.

U-576 and BLUEFIELDS (shipwrecks and remains)

Name of Property

Offshore Dare, NC

County and State

11. Form Prepared By

name/title: Deborah Marx and Joseph Hoyt, Maritime Archaeologists

organization: NOAA/Office of National Marine Sanctuaries

street & number: 1305 East West Hwy Building: SSMC4

city or town: Silver Spring state: MD zip code: 20910

e-mail: Deborah.Marx@noaa.gov

telephone: 781-545-8026 ex 214

date: 10/19/2015

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location. See page 46-47 Map 1 and Map 2.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

U-576 and BLUEFIELDS (shipwrecks and remains)

Offshore Dare, NC

Name of Property

County and State

Photo Log/Index of Photos

Note: Photos 001 through 005 are embedded within the nomination text and labeled within the text as Figure 001, Figure 002, etc.

Name of Property: U-576 and BLUEFIELDS, shipwrecks and remains

City or Vicinity: Offshore – Ocracoke

County: Offshore – Dare

State: Offshore - NC

Photographer: NOAA Monitor National Marine Sanctuary

Date Photographed: 2014

Description of Photograph(s) and number: Multibeam sonar map showing the proximity of U-576 (left) to the BLUEFIELDS (right). Photo 001. 1 of 5.

Name of Property: U-576 and BLUEFIELDS, shipwrecks and remains

City or Vicinity: Offshore – Ocracoke

County: Offshore – Dare

State: Offshore - NC

Photographer: NOAA Monitor National Marine Sanctuary

Date Photographed: 2014

Description of Photograph(s) and number: Multibeam sonar image of U-576. Photo 002. 2 of 5.

Name of Property: U-576 and BLUEFIELDS, shipwrecks and remains

City or Vicinity: Offshore – Ocracoke

County: Offshore – Dare

State: Offshore - NC

Photographer: NOAA Monitor National Marine Sanctuary

Date Photographed: 2013

Description of Photograph(s) and number: Side scan sonar image of BLUEFIELDS. Photo 003. 3 of 5.

Name of Property: U-576 and BLUEFIELDS, shipwrecks and remains

City or Vicinity: Offshore – Ocracoke

County: Offshore - Dare

State: Offshore - NC

Photographer: Unknown. Photo courtesy of Ed Caram.

Date Photographed: Unknown

Description of Photograph(s) and number: Historic image of U-576. Photo 004. 4 of 5.

Name of Property: U-576 and BLUEFIELDS, shipwrecks and remains

City or Vicinity: Offshore – Ocracoke

County: Offshore – Dare

State: Offshore - NC

Photographer: U.S. Coast Guard

Date Photographed: 8 January 1942

Description of Photograph(s) and number: Historic image of BLUEFIELDS. Photo 005. 5 of 5

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

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U-576 and BLUEFIELDS (shipwrecks and remains)

Name of Property

Offshore Dare, NC

County and State

World War II Shipwrecks along the East Coast
and Gulf of Mexico

Section 7 - Description

SUMMARY

U-576 and BLUEFIELDS is the shipwrecks and remains of two vessels, the U-576, a Type VIIC German U-boat, as well as one of its merchant vessel victims, the Nicaraguan freighter BLUEFIELDS. U-576 sank the BLUEFIELDS just before its ultimate loss at the hands of U.S. Navy planes and a gun crew onboard an armed merchant vessel on 15 July 1942. Their remains, sitting 1,030 feet apart, in 690 to 750 feet of water 27 miles off Cape Hatteras, represent the results of the Battle of Convoy KS-520, part of the larger Battle of the Atlantic off the American coast during World War II. U-576 had an overall length of 220.2 feet with a width of 20.4 feet and a depth of 15.7 feet. Launched on 30 April 1941, U-576 completed four full war patrols prior to its sinking including two off them operating off the U.S. coast, its fourth and a final fifth when it was lost. U-576 sank off North Carolina with all 45 crewmembers lost during the incident. U-576's extant remains consist of a majority of its outer hull along with the pressure hull, saddle tanks, bow and stern torpedo tubes, dive planes, deck guns and propulsion components. The U-boat's longitudinal orientation runs northeast to southwest. The submarine's bow is located at the northeast end and is easily distinguished by the overall shape of the outer hull and presence of the bow dive planes. The steel hulled freighter BLUEFIELDS had an overall length of 250.5 feet long with a width of 43.5 feet wide and a depth of 20.4 feet. Launched in October 1917, BLUEFIELDS operated up and down the U.S. East Coast during World War II carrying a variety of materials to support the Allied war effort. It took part in the convoy system several times in 1942 to help safeguard its passage but finally met its end off North Carolina while traveling in convoy KS-520 en route from New York to Havana, Cuba. U-576 attacked convoy KS-520 and sank BLUEFIELDS and another two vessels. All of BLUEFIELDS 24 man crew survived the incident. BLUEFIELDS' extant remains consist of its steel hull sitting upright on the seafloor with the freighter's longitudinal orientation running north-northeast to south-southwest. The vessel's bow is located at the north-northeast end and is distinguishable by the large open cargo hatches which would be at the bow end of the main deck.

SETTING

U-576 and BLUEFIELDS sit in 690 feet and 750 feet of water respectively in the shifting sands and currents where the Gulf-Stream and Labrador Current collide off of Cape Hatteras. The shipwrecks rest in an area with unpredictable and strong currents. This was the perfect hunting and hiding place for German U-boats due to the water depth, currents, and temperature variables that helped distort Allied sonar signals. The narrow shipping lanes off Cape Hatteras presented the U-boat commanders with access to many targets while at the same time the undersea

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U-576 and BLUEFIELDS (shipwrecks and remains)
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landscape allowed U-boats to have easy access to nearshore hunting grounds with a quick escape to deeper water offshore to recharge batteries and provide crew rest (Bright et al. 2012: 88-90).

DESCRIPTION: ARCHAEOLOGICAL REMAINS

The property consists of two individual but related shipwreck sites, the German U-boat U-576, and the Nicaraguan freighter BLUEFIELDS. Their archaeological remains represent the end results of U-576's attack on convoy KS-520 off Cape Hatteras, North Carolina. The convoy consisted of 19 tankers and freighters along with five Navy and Coast Guard escorts. U-576 torpedoed three vessels including the BLUEFIELDS, along with the *Chilore* and *J.A. Mowinckel*. BLUEFIELDS sank within minutes. The *J.A. Mowinckel* made it safely to port and the *Chilore*, along with the tug *Keshena* that was coming to the aide of the *Chilore* and *J.A. Mowinckel*, sank within the Hatteras minefield while headed to shore. During the battle, U-576 sustained initial damage from an attack by the gun crew onboard the armed merchant vessel *Unicoi* followed up by its ultimate sinking from depth charges dropped by U.S. Navy Kingfisher planes. The U-576 and BLUEFIELDS shipwrecks rest 1,030 feet apart and embody the undersea battlefield that once occupied the waters off the American shore during World War II (see Figure 001).

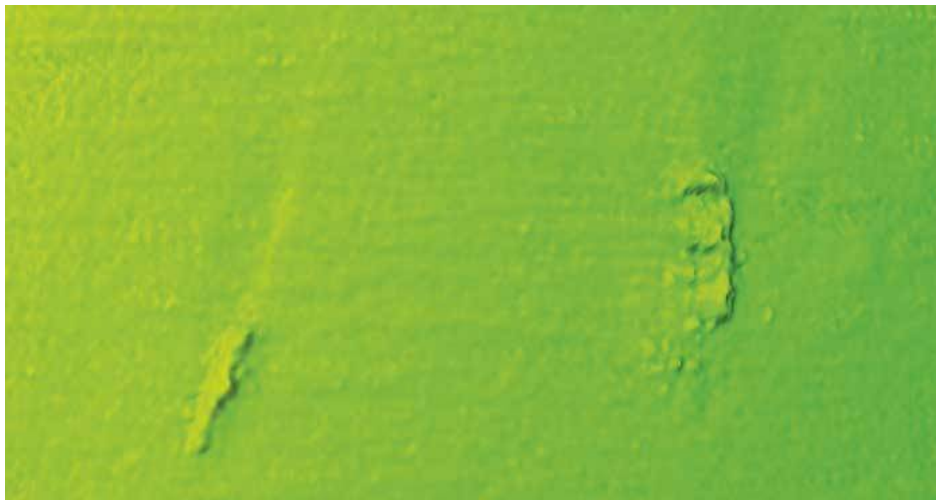


Figure 001. Multibeam sonar map showing the proximity of U-576 (left) to the BLUEFIELDS (right) (NOAA Monitor National Marine Sanctuary).

A description of U-576's archaeological remains is based on a multi-beam sonar survey done on the site in 2014. U-576's remains rest in one contiguous section on the seafloor. U-576 retains the overall shape of the U-boat as constructed. The submarine's hull is approximately 220 feet long and the width varies at around 18 feet with the presence of the saddle tanks and outer hull

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U-576 and BLUEFIELDS (shipwrecks and remains)
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fairing. The site's vertical relief is approximately 25 feet with the submarine's conning tower and saddle tanks representing the wreck's highest points. The multi-beam image shows that U-576 lies on its starboard side (see Figure 002).

The majority of U-576's outer hull fairing appears to be present with a remarkably high degree of structural integrity. The U-boat's preservation is substantial due to its recent discovery and identification as well as its depth, making it out of the range of most recreational and technical SCUBA divers. At the bow the dive planes are visible, intact and in an up position as if the U-576 was headed up to surface. The 88mm deck gun is still in place positioned in front of the conning tower. The bridge and conning tower marks the submarine's center point and there is evidence that some of the lower platform located at the rear of the conning tower, known as the "Wintergarden", is still place including the 20mm anti-aircraft gun. The port side saddle tank is visible at amidships and appears undamaged. At U-576's stern the port propeller and shaft are present.

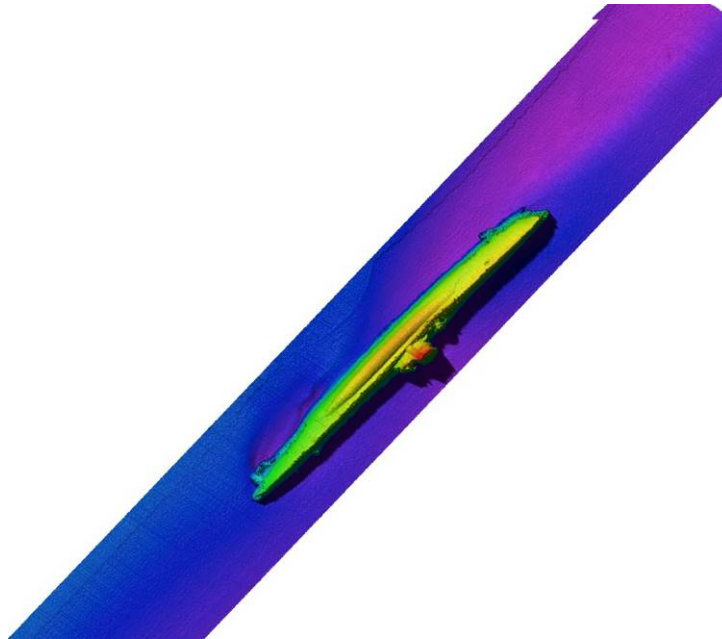


Figure 002. Multibeam sonar image of U-576 (NOAA Monitor National Marine Sanctuary).

Overall, U-576 does not show any obvious hull breeches as a result of the attack that sank it. The submarine's interior is most likely complete as it was when it sank in 1942 with all of its 45 man crew lost during the incident. It is also possible that the U-576's crew is still interned inside the hull as there was not bodies recovered and there has been no known disturbance of the site by divers to date. U-576 meets the National Register Criteria A and D and its archaeological

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U-576 and BLUEFIELDS (shipwrecks and remains)

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World War II Shipwrecks along the East Coast
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remains are significant to the nation. Ample archaeological information can be obtained from the shipwreck and research questions can be answered about its construction, weaponry, sinking and crew. U-576 is a rare example of a Type VII-C German U-boat and its location off North Carolina makes it only one of a handful of its kind near the United States available for study. Its recent discovery in 2014 makes it the most undisturbed U-boat located off the U.S. to date and the site's deep water depth has prevented anthropogenic impacts such as those that come from divers and fishermen.

BLUEFIELDS' archaeological description is based on a side scan sonar survey of the site conducted in 2013. BLUEFIELDS' remains rest in one contiguous section on the seafloor. The freighter retains the overall shape of the vessel as constructed. The shipwreck's hull is approximately 260 feet long and the width varies at around 35 feet with the masts and deck structures representing the wreck's highest points. The side scan sonar image shows that BLUEFIELDS lies upright on its keel (see Figure 003).

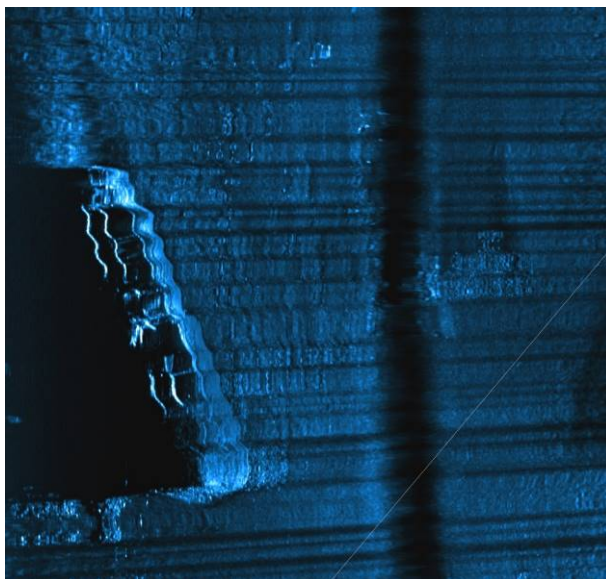


Figure 003. Side scan sonar image of BLUEFIELDS (NOAA Monitor National Marine Sanctuary).

BLUEFIELDS' steel hull appears intact from the keel up to the main deck level and there is evidence of the two cargo hold hatches, one at the bow, and one aft of the central deckhouse. The masts and cargo booms have fallen down and are laying on the main deck. The freighter would have had a mast and boom on the bow and stern and two additional smaller masts and

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booms on either side of the amidships deck house. These would have been used for loading and offloading its cargo and supplies. The side scan sonar image does show that the foredeck and parts of the amidships deck structure, containing the pilothouse and crew spaces, is still present with substantial relief. The image does not indicate the condition of the aft deckhouse, engineering spaces, or machinery. There is additional debris on the seafloor off the BLUEFIELDS starboard side that most likely is associated with the main wreck site. BLUEFIELDS meets the National Register Criteria A and D and its archaeological remains are significant to the nation. Ample archaeological information can be obtained from the shipwreck and research questions can be answered about its construction, operations during World War II, the sinking event and its crew.

SITE INVESTIGATIONS

BLUEFIELDS and U-576 were located in 2013 and 2014 respectively after several years of remote sensing surveys conducted by maritime archaeologists from the NOAA Monitor National Marine Sanctuary. The multi-year project's goal was to locate and confirm the identity of both shipwrecks to better analyze and interpret the Battle of Convoy KS-520 off Cape Hatteras, North Carolina. The survey utilized analysis methods more often employed on terrestrial battlefield sites. These techniques sought to understand the relationship of military theory and landscape features to the actions of opposing forces. The overall approach is known as a KOCO analysis (an abbreviation of Key terrain, Observation and fields of fire, Cover and concealment, Obstacles, and Avenues of approach/retreat) (Bright et al. 2012: 21).

Historical and archeological research on the events that unfolded around this convoy offer the potential to study adaptation and tactical behavior displayed by the American Navy in response to the German U-boat threat. This is integral to begin defining the Battle of the Atlantic from a strategic perspective. Additionally, this convoy may be considered a representative example of the interaction of combatants off the North Carolina coast with structures and debris from both sides believed to still lie on the seabed in immediate geospatial and temporal association. This expedition offered the opportunity to reassess history, as well as analyze the archeological record regarding the progression of events during the conflict, and the relationship of human interactions (tactics and responses) with natural parameters within the landscape (currents, water temperature, bottom topography, and water depth) (Bright et al. 2012: 22).

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The historically reported positions of several vessels associated with the engagement are well known, including the *Chilore* and *J.A. Mowinkel*, but it was not until BLUEFIELDS and U-576 were found that the actual site of the Battle of Convoy KS-520 and subsequent sinking locations of U-576 and BLUEFIELDS could be finally pinpointed and archaeologically documented.

U-576 was the last U-boat that had not been located off North Carolina prior to NOAA's work in 2014. During World War II there were 12 German U-boats lost off the United States' East Coast and Gulf of Mexico (see Table 1). To date, eight of them have been located and of those five have been archaeologically documented. U-576 was the fourth U-boat lost and one of three Type VIIC U-boats lost from the group. Archaeological work by NOAA on the U-boats off North Carolina, U-85, U-352, U-576, and U-701, is increasing our knowledge about U-boat design, construction and use as well as allowing a better interpreting the Battle of the Atlantic and its role in world history.

Name	Date Lost	Wreck Located	Archaeological Assessment	Type	Cause of Sinking	Survivors	Casualties	Wreck Location (State)
U-85	4/14/1942	Yes	Yes	VIIB	Gunfire From Ship	0	46	North Carolina
U-352	5/9/1942	Yes	Yes	VIIC	Depth Charge From Ship	32	16	North Carolina
U-701	7/7/1942	Yes	Yes	VIIC	Depth Charge From Plane	7	39	North Carolina
U-576	7/15/1942	Yes	Yes	VIIC	Depth Charge from Plane and Gunfire/Ramming From Ship	0	45	North Carolina (in deep water)
U-166	7/30/1942	Yes	Yes	IXC	Depth Charge From Ship	0	52	Louisiana (in deep water)
U-521	6/2/1943	No	No	IXC	Depth Charge From Ship	1	51	Virginia/Maryland
U-550	4/16/1944	Yes	No	IXC/40	Depth Charge and Gunfire From Ship	12	44	Massachusetts
U-869	2/11/1945	Yes	No	IXC/40	Depth Charge From Ship	0	56	New Jersey
U-548	4/19/1945	No	No	IXC/40	Depth Charge From Ship	0	58	Massachusetts
U-879	4/30/1945	No	No	IXC/40	Depth Charge From Ship	0	52	North Carolina/Virginia
U-857	4/x/1945	No	No	IXC/40	Unknown	0	59	
U-853	5/6/1945	Yes	No	IXC/40	Depth Charge From Ship	0	55	Rhode Island

Table 1: U-boats lost during World War II off the United States East Coast and Gulf of Mexico.

NOAA's expeditions were part of a larger multi-year project that began in 2008 to research and document a number of historically significant shipwrecks lost in the Battle of the Atlantic off North Carolina during World War II. The project's overall goal was to raise awareness of the war that was fought so close to the American coastline and to preserve our nation's maritime history. This effort was also undertaken to determine baseline preservation values, initiate and

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support ongoing historical and archaeological research in North Carolina and to evaluate the significance of this collection in consideration of expanding the Monitor National Marine Sanctuary off North Carolina. Work has included diver surveys and mapping to generate site-plans and photomosaics, as well as remote sensing surveys using multibeam and ROV/AUV technology. Project collaborators included the Bureau of Ocean Energy Management, National Park Service, East Carolina University, the University of North Carolina Coastal Studies Institute and the State of North Carolina (Richards and Hoyt 2014).

Planning is underway for NOAA archaeologists to return to both the BLUEFIELDS and U-576 sites to continue the archaeological assessment. Due to the water depth the documentation will need to be done with remotely operated vehicles (ROV), autonomous underwater vehicles (AUV), or submersibles. The research design for future projects identifies several goals and questions to be addressed including:

- 1) Assessment of the historical significance and archaeological integrity of each individual site;
- 2) Identify to what degree is site preservation influenced by environmental formation processes and anthropogenic impacts;
- 3) Determine whether or not the sites warrant further investigation;
- 4) Complete a thorough exterior survey of each site and artifact inventory;
- 5) Produce a site map of each site for interpretation and as a representation of baseline data for use in follow-up inquiry and future monitoring at the sites;
- 7) Complete detailed video and photographic surveys of the sites.

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U-576 and BLUEFIELD (shipwrecks and remains)

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Section 8 – Statement of Significance

SUMMARY

U-576 and BLUEFIELD is the shipwrecks and remains of two vessels, the U-576, a Type VIIC German U-boat, as well as one of its merchant vessel victims, the Nicaraguan freighter BLUEFIELD. U-576 sank the BLUEFIELD just before its ultimate loss at the hands of U.S. Navy planes and a gun crew onboard an armed merchant vessel on 15 July 1942. Their remains, sitting 1,030 feet apart, in 690 to 750 feet of water, 27 miles off Cape Hatteras, represent the results of the Battle of Convoy KS-520, part of the Battle of the Atlantic off the American coast during World War II. Both U-576 and BLUEFIELD are individually and collectively significant to Maritime History, Military and Archaeology – Historic as a result of their association with the Battle of the Atlantic off the United States East Coast and Gulf of Mexico. The overall shipwreck site containing the two vessels are together part of a larger battlefield that collectively tells a more complete story of this significant period in history. In order to make these broader connections to our maritime landscape individual properties like U-576 and BLUEFIELD are examined, characterized and weaved into the larger story that connects them to the underwater landscape. Once the United States entered World War II Germany extended its *handelskrieg* (“trade war”) to American shores by dispatching U-boats across the Atlantic Ocean to sink Allied merchant shipping. For a brief period in 1942 German U-boats attacks went unchallenged but by the spring of 1942 U.S. and Allied forces started to gain the upper hand and deter and even sink a number of U-boats including U-576. Overall, U-576 was the fourth U-boat sunk during World War II off the United States East Coast and Gulf of Mexico. BLUEFIELD in turn represents the hundreds of merchant vessels that skirted the American coast delivering war time supplies for the Allies. It operated within the convoy system which provided protection through sheer numbers along with armed escorts at sea and in the air. Unfortunately, the convoy system was not enough deterrence for U-576 as the German submarine sank BLUEFIELD and two more vessels during the Battle of Convoy KS-520. U-576 and BLUEFIELD’s remains sit on the seafloor in close proximity as an illustrative example of both sides of the Battle of the Atlantic, the hunter and the hunted. The archaeological remains of U-576 and BLUEFIELD are significant at the national level under National Register of Historic Places Criteria A and D for the year 1942.

For a more comprehensive synopsis of the Battle of the Atlantic’s significance reference the World War II Shipwrecks along the East Coast and Gulf of Mexico Multiple Property Submission (MPS) (NPS reference number 64501184). U- 576 and BLUEFIELD are included as one of the Axis military losses and Allied merchant losses associated with the Battle of the Atlantic in the document.

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U-576 and BLUEFIELDS qualifies for listing under National Register of Historic Places Criteria A and is significant in the area of Maritime History based upon their association with the Battle of the Atlantic off the United States' East Coast during 1942. The presence and success of submarines during World War II, exemplified by the German U-boat, changed the face of naval combat and history. The battlefield now extended not only from the air and water's surface but also to the underwater and seafloor landscape. Instead of the Axis powers targeting enemy military assets, they focused on non-military components, the merchant vessel from Allied and neutral countries. Until the escorted convoy system and adequate offensive and defensive forces were put into place the merchant mariners were vulnerable while transiting along the United States' coast. The sea-lanes, especially around North Carolina's Outer Banks, were the lifeline of maritime commerce during World War II and the area subsequently became the epicenter of conflict as German U-boats, like U-576, prowled the coast in search of targets. BLUEFIELDS represents one of those U-boat targets due to its role played as the carrier of supplies, within a larger convoy, in support of the Allied war effort. When the U-boat and merchant vessel's paths crossed it almost certainly resulted in shipping losses and innocent lives lost. Together U-576 and BLUEFIELDS qualify under Criteria A and represent the use of convoys up and down the American coast to more effectively deal with the U-boat threat. Convoys systems impacted the U-boat commanders' success rate and along with the Allied efforts to use convoy escorts and arm the merchant vessels with deck guns the U-boat sinking rate lessened ultimately leading to the end of the Battle of the Atlantic.

U-576 and BLUEFIELDS qualifies for listing under National Register of Historic Places Criteria A and is significant in the area of Military for the year 1942 based upon U-576 association with Axis military operations off the Outer Banks during World War II and the BLUEFIELD'S connection to the larger merchant shipping network along the United States East Coast during World War II. U-576 is significant because of the role it played as an enemy combatant of the United States during World War II and as a symbol of the German war machine that, for six months in 1942, nearly crippled America's ability to supply its allies in Europe with crucial war materials to defeat the Axis powers. The shipwreck of U-576, just miles from the North Carolina shore, serves as a poignant reminder of a time when victory during World War II was not certain and as a reminder of the sacrifices paid by the mariners of multiple nations and by friend and foe alike right off the shores of the American mainland. It is also significant to American history as it was the first U-boat sunk by U.S. Navy planes, with additional assistance from an armed merchant vessel, off the American East Coast during World War II. BLUEFIELDS exemplifies the importance placed on ordinary merchant vessels, such as freighters and tankers, to supply the world with commodities in times of war. BLUEFIELDS braved the waters off the United States to fulfill the need of Allied nations for military supplies. BLUEFIELDS, alongside other merchant vessels, connected and unified Allied countries that rallied together to pool resources to defeat the Axis powers during World War II.

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U-576 and BLUEFIELDS qualifies for listing under the National Register of Historic Places Criteria D and is significant in the areas of Archaeology – Historic based upon the site's likelihood to yield information important to history. Individually U-576 is significant based on the fact that it is only one of three Type VIIC U-boats off the United States' East Coast and Gulf of Mexico. Its recent discovery in deep water likely means that there has been little to no anthropogenic disturbance of the site's integrity. Archaeological investigations of the submarine's hull, machinery, armament and cultural artifacts may provide information that will confirm or contradict historical records and accounts of the wrecking event. U-576 provides a valuable opportunity to study a relatively intact World War II shipwreck in order to answer questions about the Battle of the Atlantic, German submarines, the German Navy or World War II in general. An examination of the BLUEFIELDS' remains will provide data on merchant vessel design, use and adaptation. Its long and varied career meant it was modified over the years to meet the demand of its new owners and shipping routes. The shipwreck will show the evolution of merchant vessels from non-wartime to wartime use. Lastly, BLUEFIELDS can reveal details about shipboard life from the material culture as well as the events surrounding its wrecking. Newspaper reports carried limited information about the events associated with BLUEFIELDS sinking off Cape Hatteras, North Carolina. Primary source documents from the U. S. Coast Guard and U. S. Navy housed at the National Archives also do not recall the incident in much detail. The limited materials about BLUEFIELDS' attack means its wreckage is the only source for further investigation of its sinking. Overall, the U-576 and BLUEFIELDS combined archaeological site will shed light on the tactics U-boat captains, convoy commanders, military planes and armed merchantmen used during the Battle of the Atlantic. U-576 and BLUEFIELDS remains will aid the forensic analysis of the Battle of Convoy KS-520's surface and underwater battlefield leading to a greater knowledge on the impact convoys had on U-boat operation during World War II.

U-576 HISTORICAL SIGNIFICANCE

The U-boat, such as U-576, was one of the most effective tools used by Germany during World War II. It inflicted severe damage on Allied shipping until convoy systems and anti-submarine patrols could gain the upper hand. Germany commanders believed that if they interrupted or even stopped merchant vessel traffic, especially in the North Atlantic and along the United States' East Coast and Gulf of Mexico, then it could remove the United Kingdom and United States participation in the war or at minimum reduce their war efforts. In turn, Germany invested vast amounts of money and manpower to support their U-boat campaigns that targeted the Allied flow of food, goods, and military supplies during the Battle of the Atlantic. It had been proven during World War I that U-boats were a valid weapon and their success during World War II laid the foundation for modern submarine warfare (Westwood 1984:7).

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The German Navy, under Admiral Karl Dönitz, built many different U-boat types with varying degree of numbers produced per type but the Type VII U-boats accounted for 61% of all German submarines built under Hitler's reign and were designed as submersible torpedo boats that relied on their ability to stay underwater for long periods of time as their greatest strength. It was the largest class of U-boat with 704 launched and sinking the majority of Allied and neutral shipping during World War II. Type VII U-boats trace their roots back to the UB III model built during World War I. U-576 was a Type VIIC, a subgroup of the larger Type VII class. The VII subtypes included VII (also called a Type VIIA), VIIB, VIIC and C-41, VIID, and VIIF. There were 660 Type VIIC U-boats built, the largest number of all the Type VII submarines constructed. The 660 included 572 Type VIIC and 88 VIIC/41 which were identical to the Type VIIC but a higher grade of steel was used making them capable of great operational depths and stronger hulls with greater resistance to depth charges.

. . . the Type VII was a specific compromise between tactical requirements, financial constraints and the terms of the 1935 London Naval Treaty. . . the Type VII was in all an outstanding design, meeting and in many cases exceeding the requirements of the U-boat command, thanks to careful planning, well-specified requirement, the basing of the design on a tried and tested predecessor from the previous war, at not the least the skills of its designers Schürer and Bröking (Krzyształowicz 2011:39).

In general all Type VII U-boats were constructed with a cylindrical pressure hull with a bow and stern section welded on as well as an outer hull casing to increase seaworthiness. A conning tower, also known as an attack center, sat amidships and served as the main entry and exit point and place for instruments and periscopes. Internally, the U-boats had the following seven compartments: forward torpedo and crews quarters, officers and chief rates quarters, control room, senior rates quarters, diesel engine room, electric motor room and aft torpedo compartment.

Two four-stroke six cylinder diesel engines, either manufactured by MAN or Germaniawerft F 46, propelled the U-boats at the surface while electric motors, designed by AEG, BBC, or SSW, with battery banks were used underwater. Primary weaponry typically included 14 G7a or G7b torpedoes (four tubes in the bow and one in the stern) with auxiliary armament consisting of an 88mm SK C35 naval deck gun and 20mm FlaK 30 anti-aircraft gun. Lastly, the Type VII could carry 36 TMA or 39 TMB mines laid through its torpedo tubes (Westwood 1984:8-10).

Hence the specific mix of imagination (Dönitz), necessity (something was needed to win the war and to realize Dönitz's

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plans) and logic (using an old but tested model) resulted in what was arguably the most perfect and effective of all instruments of war used in the Second World War - the Type VII U-boat with all its variants (Krzyształowicz 2011:12).

U-576 was a Type VIIC U-boat, a refinement of the Type VIIA and Type VIIB design. The Type VIIC represented the majority of the U-boats built and used during World War II. "For the first time the changes introduced in the new version were aimed not at eliminating any observed shortcomings in the boat but to create space for mounting new electronics equipment" (Krzyształowicz 2011:20). The Type VIIC was the workhorse of the German submarine fleet and as an effective fighting machine, it served in almost all the areas where U-boats operated around the world. It proved to be a successful model and the first type to use active sonar to detect mines and targets. The Type VIIB could not accommodate the active sonar equipment so that was one of the main reasons for the development of a new variant, the Type VIIC.

Between 1938 and 1944, 660 Type VIIC U-boats were built with the first one, U-69, launched on 19 September 1939 and the last one, U-1210, launched on 9 February 1944. The Type VIIC were commissioned toward the end of the "First Happy Time" near the beginning of World War II and were still in service when Allied anti-submarine efforts ultimately defeated the U-boat campaign in late 1943 and 1944. Fifteen shipyards built the Type VIIC U-boats in the German cities of Vegesack, Lubeck, Emden, Kiel, Danzig, Hamburg, Wilhelmshaven, Stettin and Rostock. The model became the standard U-boat of the German Navy and the main player in the Battle of the Atlantic.

Overall, the Type VIIC were two feet larger at 220 feet in length overall with the same width as Type VIIB at 20 feet 4 inches. They displayed 769 tons at the surface and 871 tons submerged. Their surface range was 8,500 nautical miles at 10 knots with a maximum surface speed of as 17.7 knots and their maximum submerged speed of 7.6 knots. This was slightly less than the Type VIIB because of the Type VIIC's increased length and tonnage making it heavier. The saddle tanks were also slightly longer and fitted with quick dive tanks inside to facilitate emergency maneuvers. The slight enlargement of the submarine allowed a larger conning tower that sat above the control room. A more efficient ventilation system was also installed on the Type VIIC, that used less lubricating oil, and a new Junkers air compressor ran off the diesel engine instead of electric motors, as in earlier types (Krzyształowicz 2011:20).

Due to the large number of Type VIIC U-boats launched it is thought that they were "mass produced" with little variation between individual submarines. In actuality they were not

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identical because of the number of shipyards who built them. Each shipyard had its own variation based on individual styles.

Differences between individual submarines, often unnoticeable by an unskilled observer, were obvious to an expert. Series built submarines were by no means clones of each other. This was because, although they were based on a set of blueprints, they were constructed in different shipyards, each of varying capabilities and experience, which immediately adapted those plans to their capabilities (Krzyształowicz 2011:34).

To familiarize a U-boats crew with an individual submarine's finer details, Dönitz created the Baubelehrung program. This program required U-boat crewmembers to be involved in the submarine's construction for those they would soon serve on. They would learn about the U-boat even before it was in the water and be intimately acquainted with its operation well before heading to battle.

U-576 CAREER (1941 to 1942)

U-576, ordered on 8 January 1940, was the 25th U-boat built by Blohm & Voss shipyard in Hamburg, Germany. The keel was laid on 1 August 1940 and launched on 30 April 1941 (Westwood 1984:12). The shipyard built (and were later commissioned into the Kriegsmarine) 144 Type VIIC (U-551 through U-650, U-951, and U-994) and 28 Type VIIC/41 U-boats (U-995, U-997 through U-1010 and U-1013 through U-1025). In total, the yard built 224 U-boats between 1939 and 1945 that went on to be later commissioned.

With so many Type VIIC U-boats constructed, one manufacturer could not supply all the diesel engines needed, so there were options for the engine model available for U-576. The builders equipped it with Germaniawerft F46 supercharged diesel engines which generated 1,400 horsepower at 470 to 490 rpm. Its two AEG GU 460/8-276 375 hp 295 rpm electric motors were used only while submerged. The electric motor's power was stored in two battery banks made up of 62 AFA 33 MAL 800 E cells. Battery life was around 20 hours before needing to be recharged from the diesel engines (Krzyształowicz 2011:21; Wynn 1997:232).

U-576 was commissioned on 26 June 1941 and put under the command of Kapitänleutnant Hans-Dieter Heinicke. Heinicke was born in Thüringen, Germany on 18 May 1913 and became an officer candidate on 1 April 1933. He worked his way up the ranks and finally became a lieutenant commander (Kapitänleutnant) on 1 April 1941, just prior to U-576's launch. His only naval experience prior to U-576 was serving as a watch officer of the U-boat tender *Wiechsel* in

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1939 and 1940 as well as a senior lieutenant during two war patrols on the U-73 in February through April 1941. U-576 was the only U-boat he commanded and he earned no decorations during his career. U-576's conning tower was decorated with the coat of arms of Redevormwald, Germany. Sea trials were done next under the scrutiny of the U-Bootsabnahmekommission (U-boat Acceptance Commission). Training took place between 26 June and 1 September 1941 where U-576's crew became familiar with their submarine and made sure it was ready for sea (Bush and Roll 1999).



Figure 004. Historic image of U-576 (Courtesy of Ed Caram).

U-576 was attached to the seventh U-boat Flotilla based at St. Nazaire, France. Between 27 September and 5 October 1941 U-576 moved from Kiel, Germany to Bergen, Norway and then from Bergen to Kirkenes, Norway. During that period it loaded supplies and fuel for its first mission. Heinicke and his 45 man crew embarked from Kirkenes on their first war cruise aboard U-576 on 6 October 1941. For the 31 day mission the U-boat patrolled in the Barents Sea off Musmansk Russia without sinking any ships. U-576 returned to Kirkenes on 5 November. After moving to Bergen for re-supplying, the U-boat departed Bergen on 11 December for its second war patrol off Ireland and the United Kingdom. Over a period of 13 days again Heinicke was unsuccessful and sailed home to St. Nazaire.

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Despite U-576's disappointing first and second war patrols, Dönitz felt Heinicke was a capable captain and would send his U-boat across the Atlantic a few months later as the strategy changed after the bombing of Pearl Harbor. Germany now joined Japan in declaring war on the United States and America was immediately drawn into World War II and forced to fight on two fronts. Since most large U.S. naval vessels were quickly allocated to fighting the war in the Pacific Theater or escorting convoys on the high seas off the coast of Europe, the American Eastern Seaboard and Gulf Coast were virtually left unprotected. This lack of protection was quickly recognized and capitalized upon by the German Navy and U-boats began making the voyage across the Atlantic to prey upon merchant freighters and tankers off the American Coast as early as January 1942. The first wave dispatched to American waters consisted of 16 U-boats (6 Type IXs and 10 Type VIIs), including U-576, under Operation Paukenschlag. U-576 left St. Nazaire on 20 January 1942 to start the German push across the Atlantic to attack merchant shipping near the Canadian and United States' shores (Blair 1996:704-732).

Heinicke sailed U-576 west and operated off Nova Scotia where there was a confluence of traffic heading back and forth from Europe. On 14 February 1942, U-576 sunk its first ship 50 miles from Sable Island, the 6,900 ton unescorted British armed freighter *Empire Spring*. U-576 turned for home and arrived back in St. Nazaire on 28 February. While U-576 never reached American waters during its third patrol, its 40 day mission was a success and U-576's crew enjoyed a month of rest before its next trip.

U-576 ARRIVES IN U.S. WATERS ON ITS FOURTH PATROL (APRIL-MAY 1942)

On 29 March 1942, U-576 departed St. Nazaire on its fourth patrol and its second patrol out west but this time it headed on a more southerly track and arrived off Virginia where it sank the unescorted 5,000 ton American merchant vessel *Pipestone County* on 21 April 1942. U-576 now turned north and while off New York fired a single torpedo at the Norwegian *Tropic Star* but missed. A few days later Heinicke reached Cape Cod and spotted a north-bound convoy. He fired broadside on four merchant vessels that had been steaming close together and hit one, the 1,300 ton Norwegian freighter *Taborfell*. It sank making a third kill for U-576. As the submarine headed home it spotted and followed a large convoy but lost contact on 3 May before ultimately reaching its home port, St. Nazaire, on 16 May after a long 49 day patrol (Blair 1996: 546-729).

U-576 IS BACK IN U.S. WATERS ON ITS FIFTH PATROL (JUNE-JULY 1942)

A month later, on 16 June 1942, U-576 departed St. Nazaire for its fifth and final war patrol. This time Heinicke set his course for the rich hunting groups near Cape Hatteras. As the battle along the American East Coast progressed, the waters off North Carolina, particularly near Cape

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Hatteras, were acknowledged by the Germans as the best geographical location in which to intercept unprotected merchant vessels. These waters were also recognized by America and America's allies as some of the deadliest waters for merchant mariners to traverse in every theater of war. In seven short months, from January 1942 to July 1942, the waters off North Carolina would become some of the most contested waters in the world and German submarines would sink dozens of merchant freighters and tankers in this location while losing very few of their U-boats in return. Due to the large expanse of area the U-boats had to patrol, the German wolf-pack tactics were not as practical and many submarines, though still in loose groups, were operating individually. Despite this decision to send U-boats on their own, U-576 did initially sail from St. Nazaire alongside U-402. While they were underway German command ordered both submarines to stay in the central North Atlantic for two days based on sightings reports from U-406. U-576 remained there for six days and spotting a large vessel on 26 July but it was traveling too fast and slipped away. By 29 June, both U-402 and U-576 were re-routed back to Cape Hatteras (Befehlshaber der Unterseeboote [B.d.U.] 1942a:30308b).

After taking on additional supplies from U-460, U-576 arrived off Cape Hatteras on 10 July 1942. The next day Heinicke sighted a northbound convoy and followed it instead of immediately attacking in hopes of gaining time to allow U-402 to get to the area to assist him. During that period U-576's crew lost contact with the convoy. U-576 and U-402 then split and took up independent positions off Cape Hatteras. The German U-boat supreme command received limited reports back from U-576 but on 19 July it noted that,

In the sea area off Hatteras successes have dropped considerably. This is due to a drop in the traffic (formation of convoys) and increased defense measures. Of the boats stationed there in the recent period only two, U-754 and U-701 have had successes. On the other hand U-701 and U-215 have apparently been lost, and U-402 and [U-]576 badly damaged by depth charges or bombs. This state of things is not justified by the amount of success achieved (B.d.U. 1942b:30309a).

U-576 reported home on 13 July that it had sustained irreparable damages to its main ballast tank and was operating with ballast tank number five flooded and possibly a ruptured saddle fuel tank. It is unclear how the submarine was damaged as there are no military reports of an engagement with a German U-boat. While limping home, U-576 came across convoy KS-520. Its crew could not turn away an opportunity right at its doorstep. Several days later U-576 failed to check in.

CONVOY KS-520

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Twenty-one merchant ships and five Navy and Coast Guard escorts prepared for a mid-July 1942 departure from an anchorage at Lynnhaven [Hampton] Roads, Virginia. They would unite under convoy KS-520 and steam together south to Key West, Florida. The convoy code KS designated that the convoy sailed between Hampton Roads, VA and Key West, FL. It was the second in the KS series; the first KS series denoted a route between Casablanca, Morocco and several French ports operating until June 1940. The second KS started with KS-500 and operated along the eastern seaboard between May and September 1942. In total, there were 73 KS convoys encompassing 1,139 individual ships during World War II (Hague 2000a:12; Hague: 2015a).

Of the twenty-one merchant vessels schedules for convoy KS-520, only 19 sailed from Virginia on 14 July. They included U.S. freighters *Unicoi* and *Chilore*, and U.S. tankers *Rhode Island*, *Toteco*, *American Fisher*, *Tustem*, *Gulf Prince* and *Robert H. Colley*; British freighters *Egton* and *Zouave* and British tankers *Clam* and *Nicania*; Norwegian registered freighters *Para* and *Hardanger*; Panamanian registered tanker *J.A. Mowinckel*; Dutch registered freighter *Jupiter*; Greek registered freighters *Mount Helmos* and *Mount Pera*; and Nicaraguan registered freighter BLUEFIELDS (USN 1942b). The five support vessels that made up Escort Group Easy were Navy destroyers USS *Ellis* (DD-154) and USS *McCormick* (DD-223), Navy corvette USS *Spry* (PG-64) and Coast Guard cutters USCG *Triton* (WPC-116) and USCG *Icarus* (WPC-110). Many vessels including the American ships in the convoy were outfitted with light armament to help defend the convoy. They in turn carried armed guard crews aboard them in charge of manning the equipment such as deck guns mounted on the stern (*Monitor National Marine Sanctuary* 2015). Out of the 19 vessels, nine sailed in ballast and the others carried a large variety of unspecified cargo (Bright et al. 2012:136).

Over the previous week the convoy ships and escorts received sailing orders from the Routing Officer stationed at Lynnhaven Roads, H.C. Fengar. They included information on signal numbers, convoy positions, departure time, navigation instructions and directions for assembly and movement. KS-520's Convoy Commander was Captain N.L. Nichols (U.S. Navy retired), stationed onboard *J.A. Mowinckel* and the Escort Commander was U.S. Navy Lieutenant Commander Leland R. Lampman, stationed onboard the USS *Ellis* (Commandant Fifth Naval District [COM5] 1942a, 1942b; USN 1942b). Once past the minefield at the Chesapeake Bay approaches, the convoy would convene and sail at 8 knots to Key West; a seven day transit with estimated arrival of 21 July. The merchant vessels were positioned in four rows with seven columns with *Chilore* in the first row alone followed six vessels in each of the next three rows. The escort group maintained anti-submarine patrol stations around the convoy and for some of the route there was additional cover provides by blimps or airplanes. During the trip convoy KS-520 would be under constant threat from U-boats and its passage would not go uncontested.

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During the two previous days, four airplanes reported U-boat attacks east of Cape Hatteras (Blair 1996:626-627).

Convoy KS-520 rounded Cape Hatteras on 15 July 1942 and proceeded at 8 knots (a speed based on the slowest vessel, freighter BLUEFIELDS) within the 100 fathom curve. By mid-day the convoy was 20 miles from Ocracoke Inlet and would soon cross paths with U-576 later that day (Freeman 1987:411). U-576 was damaged and on its way home but once Heinicke saw convoy KS-520 he faced a tough decision, would he stay and fight and risk losing his submarine or would he run. He was probably aware of the loss of U-85, U-352, and U-701 just a short time ago and he was also at a disadvantage with an injured vessel. Heinicke's decision to engage sealed his crew's fate but not before inflicting damage to several vessels in the convoy.

At 4 o'clock pm the USCG *Triton* picked up a sonar contact and then quickly dropped three depth charges followed by five more depth charges ten minutes later. Sometime around 4:15pm U-576 launched two torpedoes that directly hit *Chilore* at the port bow and port quarter. A minute later a third torpedo struck the *J.A. Mowinckel*'s port stern. Again, a minute later, a fourth torpedo slammed into the BLUEFIELDS at amidships on the port side. In less than five minutes U-576 fired four torpedoes, all of which hit their mark. Convoy KS-520's vessels were now in a state of chaos and they all scattered out of the tight formation. BLUEFIELDS began to rapidly sink and ten minutes later would be on the bottom while the *Chilore* and *J.A. Mowinckel* stayed afloat long enough to head for the closest port. Unfortunately, *Chilore* and *J.A. Mowinckel* strayed into the Hatteras minefield and both struck mines. *J.A. Mowinckel* survived the incident and made it to Baltimore but the *Chilore*, while being towed by a rescue tug, sank at the entrance of Chesapeake Bay. Additionally, the *Keshena*, one of the tugs that came to the aide of *Chilore* and *J.A. Mowinckel*, hit a mine and also sank (Commander Scouting Squadron Nine [ComScorn Nine] 1942; USCG 1942a, 1942b; USS *Ellis* 1942; USS *McCormick* 1942; USS *Spry* 1942).

BLUEFIELDS CAREER (1917-1942)

The Nicaraguan freighter BLUEFIELDS met its end and sank at the hands of U-576 on 15 July 1942. The merchant vessel represents the typical German U-boat target off Cape Hatteras. BLUEFIELDS had a long career spanning World War I and most of World War II and embodies the bravery of merchant mariners who never knew if and when they might be in the sights of U-boat periscopes.

The Manitowoc Shipbuilding Company of Manitowoc, Wisconsin built BLUEFIELDS, originally named MOTOR I, for K. Salvesen of Norway. It was yard hull number 81 and the sister ship to hull number 80, *Ada*, built for the corporation D/S A/S *Ada*, also affiliated with K.

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Salvesen. Due to the British shipyards being so busy with orders to meet the shipping demands during World War I, foreign companies such as those from Norway, looked to American yards to fulfill their needs; this was the case with K. Salvesen and MOTOR I. This decision would ultimately not be the best for K. Salvesen as his vessel would soon be requisitioned by the U.S. government for wartime use (Fenton 2013:75).

Prior to their launch, the U.S. Shipping Board Emergency Fleet Corporation requisitioned cargo vessels for use during World War I. In total, four vessels under construction by the Manitowoc Shipbuilding Corporation were requisitioned and purchased; hull 80 (MOTOR I), 81 (*Ada*), 82 (*War Castle*), and 83 (*War Victor*) (United States Shipping Board Emergency Fleet Corporation 1918:128). Thirty-eight lakers were built by the Manitowoc Shipbuilding Corporation to transport military supplies and support materials for World War I. Lakers were a regional type of vessel built for bulk transport of cargo specifically in the Great Lakes. Types of cargo they carried included rock, ore, salt or grain in large contiguous holds and not packed in containers. Manitowoc Shipbuilding Company was established in 1902, by Charles C. West and Elias Gunnell, as the Manitowoc Dry Dock Company. In 1910, it became the Manitowoc Shipbuilding and Dry Dock Company and in 1916 changed its name to the Manitowoc Shipbuilding Company. The yard was known for well-constructed and reliable vessels and built at least 40 vessels for the U.S. Shipping Board between 1916 and 1920 (Wenstadt 2007:93).

The steel hulled twin screw cargo freighter MOTOR I was launched in October 1917 and renamed LAKE MOHONK. It measured 250.5 feet long, 43.5 feet wide and 20.4 feet depth with a gross tonnage of 2,124 and a net tonnage of 1,667 with an official number of 215702. LAKE MOHONK I's dimensions and design was chosen to allow transiting through the St. Lawrence Canal and locks. The freighter had two four cylinder two stroke diesel engines, supplied from Sweden by J & C G Bolinders Co Ltd, position at the very aft end, a feature common to Great Lakes built vessels to maximize cargo carrying capacity (American Bureau of Shipping 1919: LAK; Fenton 2013:83). It was also referred to as a motorship throughout its career since it was driven by diesel engines. LAKE MOHONK was equipped with a small Scotch type oil fired donkey boiler to supply steam for its pumps, steering gear, deck winches, capstan and anchor windlass. An electrically driven ventilation blower in the engine room circulated cool air through numerous deflecting cones positioned throughout the space. An Engberg seven and a half kilowatt Sturtevant steam driven generator produced current for the blower along with the wireless alternator and lights (Stockmann 1921:396). The freighter had a deck house at the stern sitting over the engines to accommodate the machinery space as well as a second deckhouse at amidships for crew's quarters and the pilothouse. In between the bow and center deckhouse and between the center deckhouse and stern deckhouse were cargo hatches allowing access to the cargo holds. The freighter carried bulk cargo shipments and used its masts and booms for loading and offloading.

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While owned by the U.S. Shipping Board, LAKE MOHONK's operational management was overseen by a private company, the Clyde Mallory Steamship Company. They also managed its sister-ship, *Ada*, now called the *Lake Oneida*. In addition to managing government owned vessels the company also supplied and operated 13 of its own steamers for government use. They serviced routes between New York and South and East Africa along with routes in the North Atlantic, French Mediterranean, Italy and North Africa (United States Congress 1925:2968).

Soon after the acquisition for World War I, it was found that LAKE MOHONK and *Lake Oneida*'s engines were inadequate and too small making their speed slow at 8 knots. The sluggish speed was also combined with high consumption of fuel and lubricating oil. The economical operation of the freighters was doubtful so LAKE MOHONK and *Lake Oneida* were tied up. Historical documents do not indicate how much or if the two freighters were used to support World War I Allied activities. LAKE MOHONK was home-ported in New York, New York and served under the ownership of the U.S. Shipping Board through 1919 when its wartime service ended and it returned to private interests (Stockmann 1921:396).

In 1919, the Astmahco Navigation Company of New York purchased LAKE MOHONK and renamed it ASTMAHCO III. The also purchased *Lake Oneida* and renamed it *Astmahco IV* so both sister-ships continued to run alongside each other under the same company. Astmahco Navigation Company was a subsidiary of the Astoria Mahogany Company. The Astoria Mahogany Company imported and exported mahogany and cedar and then manufactured and distributed the lumber and veneers. An ad in the *Good Furniture Magazine* from June 1920 boasted that the Astoria Mahogany Company was the country's largest organization devoted to that business. Other of its subsidiaries included the Astoria Veneer Mills and Dock Company and the Huddleston Marsh Mahogany Company. ASTMAHCO III transported mahogany logs from ports in South America, Central America, Africa and the Caribbean back to the United States. During one trip, the *Boston Post* reported that, it transported 300,000 feet of mahogany from Puerto, Mexico to Boston in May 1921(*Wall Street Journal* 5 January 1923; *The Sun and New York Herald* 21 April 1920; *Boston Post* 16 May 1921).

Shortly after Astmahco Navigation Company purchased both ASTMAHCO III and *Astmahco IV* they repowered them and replaced the motor ships Norwegian built diesel engines with American ones. The expensive of installing new power plants was to reduce costs to make them more economical to run. When both vessels were requisitioned prior to their launch, the engines had not been installed yet. The engines originally chosen were not used. Instead smaller ones were chosen, two 320 B.H.P. engines, of the two cycle hot bulb type. ASTMAHCO III's new engines were two 500 B.H.P. 6 cylinder 16 inch diameter McIntosh and Seymour diesel engines.

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During the upgrade at the Vulcan Iron Works the motorship's internal hull structure underwent modifications to accommodate the larger and longer engines along with larger eight foot in diameter propellers. First, the forward engine room bulkhead was moved forward eight feet and second, the distance between the centerline of the engines was increased. Each engine was outfitted with an air compressor and an auxiliary steam driven compressor was included as a backup. Many of the original steam driven machinery was replaced with electric driven ones so the generator was upgraded to run items such as the Hyde steering gear and various pumps. An important last addition in the engine room was a hinged skylight over the forward end to increase light and ventilation. Around March 1921 the overhaul of ASTMAHCO III and *Astmahco IV* was complete including sea trials which concluded these advantages: increased propulsion, lower fuel oil consumption, independence from steam at sea, decreased engine room crew, maneuvering flexibility and a compact power space. Overall, the speed increased only slightly from 8 to 9.5 knots (Stockmann 1921:396-398; *New York Times* 25 April 1922).

In mid-1922 it appears the Astmahco Navigation Company was bankrupt and put the ASTMAHCO III and *Astmahco IV* up for sale. On 22 April 1922, the *New York Times* ran a for sale advertisement for the "Two Motor Cargo Ships" to be sold separately at public auction run by the U.S. Marshall on 28 April in Brooklyn, New York. The Ormidale Steamship Corp., owned by C.D. Mallory and Company of New York, purchased ASTMAHCO III and renamed it ORMIDALE (Wedge and Bowen 1923:381). It was registered in Wilmington, Delaware and records indicate it was the only vessel owned by the Ormidale Steamship Corp. (Merchant Vessels 1923-24:36,103). Between 1922 and 1927, ORMIDALE sailed between the Pacific Northwest, California and Gulf of Mexico ports. It serviced Seattle, Washington, San Pedro and San Francisco, California, New Orleans, Louisiana and Houston, Texas. The only details about the motorship's cargo comes from the *Marine Journal* in 1923 that states it was loading lumber and shingles in Seattle for Houston as well as the *Oakland Tribune* on 23 May 1924 that wrote ORMIDALE carried the first shipment of paper from British Columbia to New Orleans (*Marine Journal* 1923:123). It deviated from its routine route by making a transit from Houston to Charleston, South Carolina with a cargo of sulfur (*Houston Post* 9 July 1924).

In 1927, the Gravel Motorship Corp. of Buffalo, New York purchased ORMIDALE, registered it in Buffalo and operated it in the Great Lakes for approximately ten years. This was the corporation's only vessel and little documentation exists on what ORMIDALE did during that time period. The Gravel Motorship Corporation, a subsidiary of Seneca Washed Gravel Corporation, used ORMIDALE for the transport of sand and gravel for processing at their plant in Buffalo. In 1934, John Roan, of the Roan Transportation Company at Sturgeon Bay, Wisconsin chartered ORMIDALE and converted it to a crane vessel at the Sturgeon Bay Shipbuilding & Dry Dock Company. Work included adding two large clams, one forward and one aft, of the center cabin, for loading and offloading. On 27 May 1934, the *Escanaba Daily*

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Press (Eacabana, Michigan) wrote, "After being equipped the Ormidale will be used for freighting rock between Sturgeon Bay and Indiana City" (Van Der Linden 1994:160). The only notable incident in ORMIDALE's career in the Great Lakes was a collision with the Norwegian freighter *Viator* while in Lake Huron. While ORMIDALE was bound from Duluth to Buffalo with a pig iron cargo it rammed and sunk *Viator* on 31 October 1935 while steaming in dense fog ten miles south of Thunder Bay Island. The *Viator*'s 18 man crew was all rescued and taken aboard ORMIDALE (*Ironwood Daily Globe* 1 November 1935).

In late 1937, Old Ben Coal Corporation of New York, New York purchased ORMIDALE and moved the freighter off the Great Lakes. It was then used for coal transport along the Atlantic states. The Old Ben Coal Corporation owned several coal mines in West Frankfort and Christopher, Illinois and was a major supplier of coal in that region. A year later Lisardo Garcia, of Havana Cuba, acquired ORMIDALE, renamed the vessel JUPITER and registered it in Honduras. Garcia was president of L. and A. Garcia and Company as well as owner and operator of several steamships out of Puerto Cortes, Honduras and Port Arthur, Texas servicing the Gulf of Mexico and West Indies with additional stops in New York, New York. JUPITER sailed along with Garcia's other large freighter, *Neptuno* (*Brooklyn Daily Eagle* 19 June 1939; Jordan 2006:394). *Pacific Motor Boat* volume 32 from 1939 and the *Waterways Journal* volume 52 from 1939 indicates that around 1938 or early 1939 JUPITER was repowered in New Orleans with two 525 HP Atlas diesel engines and a 60 H.P. Atlas-Imperial auxiliary diesel (Lloyds 1938-39:ORL-ORO; Lloyds 1940-41:JUN-JUR).

With the outbreak of World War II in 1939, merchant shipping now faced challenges they had never contended with before, German U-boats. It was not until 1942 that the threat finally reached America's East Coast, Gulf of Mexico and Caribbean. While many Allied merchant vessels were retrofitted with defensive measures, such as stern deck guns, no records show that JUPITER became armed in any way. The war also limited the information published about ship movements to prevent this knowledge from falling in enemy hands. Records on foreign ship arrivals and clearances from the port of New York, located in the National Archives, chronicle some of JUPITER's activities. Between 1939 and 1941 JUPITER arrived in New York eight times and departed nine times (Mozolak 2015). In 1941 JUPITER again changed hands for a final time. A. Garcia & Cia. Ltda. acquired JUPITER along with *Neptuno* and two other freighters from Lisardo and Alfredo Garcia and transferred them to a Nicaraguan flag. All four of the vessels had been on operating between Cuba and East Coast ports in the United States at the time of their sale. JUPITER's name was changed to BLUEFIELDS, after the port city Bluefields at the mouth of the Escondido River in eastern Nicaragua (*New York Times* 16 November 1941).

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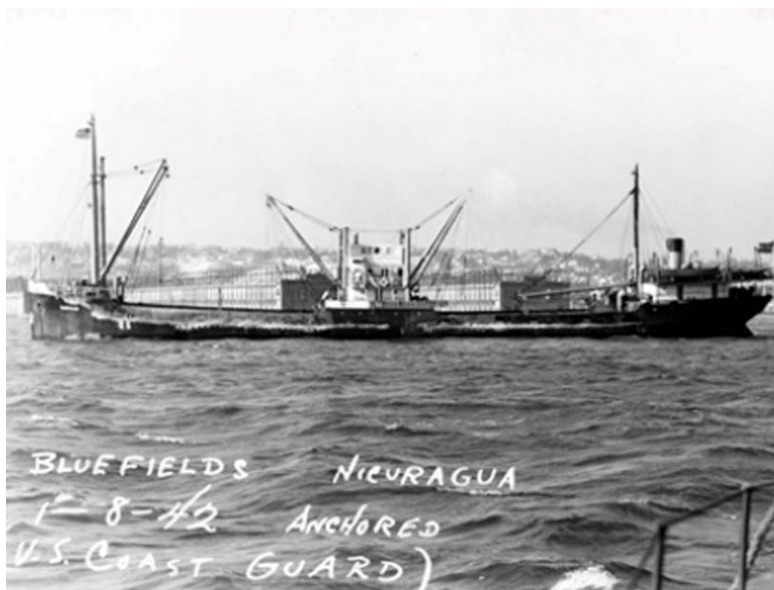


Figure 005. Historic image of BLUEFIELDS taken in 1942 (U.S. Coast Guard).

Merchant ship movements were not widely publicized during World War II so German U-boat commanders had a harder time locating targets. As a result little is known about how often and where BLUEFIELDS traveled prior to its loss in July 1942. Records from the port of New York do document BLUEFIELDS clearing for a foreign port seven times in 1941 and 1942 (Mozolak 2015). Databases of convoy movements did also record that BLUEFIELDS was part of convoy KS-502 that departed from Hampton Roads, Virginia on 20 May 1942 and arrived at Key West, Florida on 25 May 1942. Convoy KS-502 had 11 merchant vessels and no escorts. A month later BLUEFIELDS joined convoy KN-111 that departed Key West, Florida on 18 June 1942 and arrived in New York, New York on 24 June 1942. Convoy KS-111 included 35 merchant vessels and no escorts (Hauge:2015a; Hauge:2015b). The next known movement of BLUEFIELDS was during its trip with convoy KS-520 which would end in its total loss off Cape Hatteras, North Carolina.

BLUEFIELDS' DEMISE (15 JULY 1942)

BLUEFIELDS' association with convoy KS-520 was part of a longer voyage beginning in New York on 7 July 1942 with a final destination of Havana, Cuba. Onboard in its cargo hold was two cars, empty burlap bags, drums of carbide and oil (Mozolak 2015). In Hampton Roads, Virginia the freighter met up with convoy KS-520 for the continuation of its trip south, leading to its demise by U-576. After BLUEFIELDS was hit by the U-boat's torpedo its crew remained generally unharmed. The freighter quickly began to list to port, a result of the torpedo's impact

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amidships on the port side. Within ten minutes the BLUEFIELDS sank stern first and its 24 man crew abandoned ship. By 4:42pm, USS *Spry* picked up two boatloads of survivors, 20 in all. This included the Master, Captain, Officers, and other crew. Four minutes later, USCG *Icarus* rescued the remaining four survivors. Many of the survivors sustained minor wounds, cuts, abrasions and suffered from exhaustion. Suddenly after recovering survivors, *Spry* picked up an underwater contact. After dropping a single depth charge, the contact was lost (USCG 1942a; USS *Spry* 1942; USN 1942b). Of the 19 ships in convoy KS-520, three were hit, BLUEFIELDS *Chilore* and *J.A. Mowinckel*, and two ended up sinking directly from the attack, BLUEFIELDS and *Chilore*. The other sixteen vessels in the convoy ended up making safe passage to Key West, Florida and then onto their final destination.

U-576's DEMISE (15 JULY 1942)

Convoy KS-520 sailed right into the path of the damaged U-576.

Reasonably, his [Heinicke's] decision to attack must have rested upon a sober assessment of the limitations of his boat and crew, the terrain and potential geometry of his attacks, his tactical advantages and disadvantages, and administrative pressure upon him to carry out his orders. However, were Heinicke a cavalier and reckless Captain bent on success at all costs, then perhaps the fate of his boat and crew was sealed the moment KS-520 appeared upon the horizon (Bright et al. 2012:29).

Around 4:30pm U-576 fired two torpedoes at *Chilore*, then a single torpedo at *J.A. Mowinckel* and another single torpedo at BLUEFIELDS. All of U-576's torpedoes hit their targets and convoy KS-520 immediately scattered in confusion. After the explosion of the torpedo that hit *Chilore*, U-576 partially surfaced bow first. Over the next hour convoy KS-520's escort group, along with patrol aircraft, hunted U-576 and dropped depth charges on all their sonar contacts. The *Unicoi*'s gun crew also fired at the U-boat and scored a hit on the conning tower. The depth charge attacks combined with U-576's weakened buoyancy control system along with the gunfire damage fatally injured the submarine. Based on eye witness accounts the two U.S. Navy Kingfisher planes from Cherry Point Marine Corps Air Station, North Carolina most likely dropped the fatal depth charges that sank U-576 (Freeman 1987:412). It is unclear if and for how long U-576 survived the attack but it never returned home and likely sank during the Battle of Convoy KS-525. *J.A. Mowinckel*'s captain observed wreckage and oil on the surface near the battle site and had no doubt the submarine was destroyed (SOC 1946:365). A few days later Germany reported U-576's lost with all hands, 45 men, during its fifth war patrol.

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One unique factor in the confrontation between U-576 and convoy KS-520 is that U-576 was attacked by an armed merchant vessel and that action was a factor in the submarine's demise. None of the other German U-boats off the East Coast or Gulf of Mexico have a sinking attributed to being fired on by an armed merchant vessel. The U.S. freighter *Unicoi*'s Naval Armed Guard crew earned a Battle Star for their participation in the Battle of Convoy KS-520 and their efforts in sinking U-576 (Horodysky 2015).

CONCLUSIONS

BLUEFIELDS and U-576 represent the two sides of the Battle of the Atlantic and are a rare archaeological example of a surface and undersea ocean battlefield off the American coast.

The convoy battle between KS-520 and U-576 resulted in the loss of four Allied lives; one Naval Gunner, one merchant sailor, and two crewmen from tug *Keshena*. All forty-five hands aboard U-576 went down with their vessel. Nearly twenty sailors from *J.A. Mowinckel* sustained injuries, half of which were serious enough for medical evacuation to Norfolk. A crewman about *Chilore* had also been injured. Many of the 24 sailors rescued from BLUEFIELDS were also treated for minor injuries. Three Allied ships, BLUEFIELDS, *Chilore*, and *Keshena* were lost as a result of the attack, as well as U-576 itself (Bright et al. 2012:40).

The result of the Battle of Convoy KS-520 was felt throughout the Atlantic and influenced the future decisions made by both the Allies and German U-boat command. A report on the archaeological investigation to document the battle's submerged remains sums how the end stages of the Battle of the Atlantic would play out.

As KS-520 steamed closer to Key West stiff Allied defenses in the area prompted Admiral Dönitz to order withdrawal of his remaining U-boats from the eastern seaboard. Effectively, the Battle of the Atlantic off North Carolina followed a similar chronology as it had in late 1940 and early 1941 off Great Britain. Early U-boat success devastated Allied shipping. The learning curve of anti-submarine warfare, however, rapidly brought effective force to bear against the German Navy, and U-boats were driven from the waters they previously dominated. Perhaps one difference was the lumbering pace at which the

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USN [U.S. Navy] implemented these means. Indeed, in the Interim of USN establishing effective means of protecting merchant shipping, U-boats enjoyed their most fruitful operational phase. Once anti-submarine measures came online in full force in the Eastern Atlantic, however, German U-boats would never again enjoy operational supremacy during the BOA [Battle of the Atlantic]. Once driven from Great Britain in 1941, American waters in 1942, and from far-a-field station in the South Atlantic and Caribbean by 1943, the Battle of the Atlantic was all but lost for the Germans (Bright et al. 2012:40).

BLUEFIELDS is an example of one of the Allied merchant vessels who fell prey to German U-boats off the American coast. Due to the water depth, its shipwreck will be most likely more intact as compared to other similar vessels which have been located but are in shallower waters subject to great effects from weather, fishing and diver impacts.

There are five other merchant vessels shipwrecks on the National Register of Historic Places associated with the Battle of the Atlantic off the East Coast but none of them are so closely tied to their aggressor in association and integrity of location. All five shipwrecks were nominated and listed under the World War II Shipwrecks along the East Coast and Gulf of Mexico Multiple Property Submission (MPS) (see Table 2).

National Register Number	Name	National Register (NR) or National Historic Landmark (NHL)	State	Nationality	Type	Sank	Property
13000779	COIMBRA	NR	NEW YORK	British	Tanker	1/15/1942	Shipwreck
13000781	DIXIE ARROW	NR	NORTH CAROLINA	USA	Tanker	3/26/1942	Shipwreck
13000782	EMPIRE GEM	NR	NORTH CAROLINA	British	Tanker	1/23/1942	Shipwreck
13000780	E.M. CLARK	NR	NORTH CAROLINA	USA	Tanker	3/18/1942	Shipwreck
13000451	LANCING	NR	NORTH CAROLINA	Norwegian	Tanker	4/7/1942	Shipwreck

Table 2. Merchant vessels listed on the National Register of Historic Places or listed as a National Historic Landmark (<http://www.nps.gov/nr/research/index.htm>).

There are 22 submarines listed on the National Register of Historic Places or listed as a National Historic Landmark (see Table 3). The H.L. *Hunley*, I-169, and U-1105 are the only three shipwrecks included in that list. The majority of the submarines are from the United States (17)

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with additional properties from Japan (3) and Germany (2). The two German U-boats, U-1105 and U-505, date from World War II and are a Type VIIC and IXC respectively.

National Register Number	Name	National Register (NR) or National Historic Landmark (NHL)	State	Nationality	Type	Service Period	Property
78003412	H. L. HUNLEY	NR	SOUTH CAROLINA	USA		1863-1864	Shipwreck
89001428	HA. 19 (Midget Submarine)	NHL	FLORIDA	Japan	A Kō-hyōteki-class	1938-1941	Vessel
99001706	HA. 62-76 (Midget Attack Submarine)	NR	GUAM	Japan	C Kō-hyōteki-class	1944	Vessel
76002267	I-169 (part of Truk Lagoon Underwater Fleet, Truk Atoll)	NHL	FED. STATES	Japan	KD6a / I-168 class	1935-1944	Shipwreck
00001602	U-1105 (aka Black Panther)	NR	MARYLAND	Germany	VIIC / 41	1944-1949	Shipwreck
89001231	U-505	NHL	ILLINOIS	Germany	IXC	1940-1944	Vessel
89001077	USS ALBACORE (AGSS-569)	NHL	NEW HAMPSHIRE	USA		1953-1980	Vessel
78002458	USS BECUNA (SS-319)	NHL	PENNSYLVANIA	USA	Blao class	1944-1969	Vessel
08000947	USS BLUEBACK (SS-581)	NR	OREGON	USA	Barbel class	1957-1990	Vessel
82000149	USS BOWFIN (SS-287)	NHL	HAWAII	USA	Blao class	1942-1971	Vessel
08000477	USS CAVALLA (SS-244)	NR	TEXAS	USA	Gato class	1943-1969	Vessel
89001229	USS CLAMAGORE (SS-343)	NHL	SOUTH CAROLINA	USA	Blao class	1945-1975	Vessel
86000087	USS COBIA (SS-245)	NHL	WISCONSIN	USA	Gato class	1943-1970	Vessel
86000088	USS COD (SS-224)	NHL	OHIO	USA	Gato class	1942-1971	Vessel
08000863	USS CROAKER (SS-246)	NR	NEW YORK	USA	Gato class	1943-1968	Vessel
86000086	USS DRUM (SS-228)	NHL	ALABAMA	USA	Gato class	1940-1968	Vessel
76002270	USS LIONFISH (SS-298)	NHL	MASSACHUSETTS	USA	Balao class	1943-1971	Vessel
79002653	USS NAUTILUS (SSN-571)	NHL	CONNECTICUT	USA		1954-1980	Vessel
86000089	USS PAMPANITO (SS-383)	NHL	CALIFORNIA	USA	Blao class	1943-1971	Vessel
04001502	USS RAZORBACK (SS-394)	NR	ARKANSAS	USA	Balao class	1944-2001	Vessel
72001566	USS SILVERSIDES (SS-236)	NHL	ILLINOIS	USA	Gato class	1941-1969	Vessel
86000090	USS TORSK (SS-423)	NHL	MARYLAND	USA	Tench class	1944-1968	Vessel

Table 3. Submarines listed on the National Register of Historic Places or listed as a National Historic Landmark (<http://www.nps.gov/nr/research/index.htm>).

The U-1105, also known as the *Black Panther*, was surrendered at the end of World War II on 10 May 1945. It was turned over to the United States and eventually made its way to New Hampshire where it was the focus of salvage and towing tests where it was intentionally sunk and raised several times. Eventually, during a test on 19 September 1949 a depth charge cracked its pressure hull and sank the vessel. It now lies near Piney Point, Maryland in the U-1105 Black Panther Historic Shipwreck Preserve and is a popular dive site. The U-505 was captured by American forces on 4 June 1944 off West Africa and taken to Bermuda after gathering valuable intelligence materials. It too made its way to New Hampshire where it was abandoned for

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several years before being donated in 1954 to the Museum of Science and Industry in Chicago, Illinois. In order to gain intelligence about U-boats, after the surrender of U-1105 and capture of U-505 they were stripped of a lot of their components.

Unlike the other World War II merchant vessels and submarines already listed on the National Register of Historic Places, the U-576 and BLUEFIELDS shipwrecks are closely connected in historical significance and location on the seafloor. They sit just over 1,000 feet from each other and symbolize the results of the surface/undersea battlefield off the American East Coast. The only other known site of similar nature to U-576 and BLUEFIELDS is that of the U-166 and steamship *Robert E. Lee* which lie two miles apart in the Gulf of Mexico. The U-166 sank the *Robert E. Lee* on 30 July 1942, 45 miles off Louisiana before being depth charged and eventually also sunk by a patrol craft, PC-566, who was escorting the steamship when it came under attack. Both shipwrecks lie in 5,000 feet of water and were discovered in 2001 during a survey for an oil and gas pipeline by Shell and BP. The U-166 and *Robert E. Lee* have been the subject of several archaeological surveys to document the sites but are not yet listed on the National Register of Historic Places.

U-576 and BLUEFIELDS, shipwrecks and remains are a rare window into a historic military battle and the underwater battlefield landscape of World War II. Their association, historically and archaeologically, with the Battle of Convoy KS-520 make them unique and significant as compared to other U-boat and merchant vessel shipwrecks associated with the Battle of the Atlantic off the United States East Coast and Gulf of Mexico.

WRECKSITE MANAGEMENT

As a sunken foreign military vessel, not otherwise abandoned, disposed of or had its title transferred, U-576 is still owned by the Federal Republic of Germany. In legal succession to the former German Reich, the Federal Republic of Germany, as a rule, sees itself as the owner of formerly Reich-owned military assets, such as ship or aircraft wreckages. Furthermore, 45 crewmembers perished during its loss and human remains are suspected to be present on the shipwreck site, therefore the wreck is considered a military war grave. Those who would engage in unauthorized activities directed at sunken state craft, like U-576, are advised that disturbance or recovery of such craft should not occur without the express permission of the sovereign government retaining ownership. On 2 February 2004 the U.S. State Department published a notice in the Federal Register (Public Notice 4614) stating that, "The U.S. will use its authority to protect and preserve sunken State craft of the United States and other nations, whether located in the waters of the United States, a foreign nation, or in international waters." For more information about the U.S. Policy on Sunken Warships see Federal Register Volume 69, Number

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24 from 5 February 2004 pages 5647-5648 (<http://www.gpo.gov/fdsys/pkg/FR-2004-02-05/html/04-2488.htm>).

NOAA's Office of National Marine Sanctuaries (ONMS) and the Federal Republic of Germany, through the German Embassy in Washington D.C., are in consultation on how to manage U-576. Discussion have taken place to better coordinate efforts to document the wreck's physical remains, develop a long term management plan, assist with nominating the site to the National Register of Historic Places and partner with the local community for education and outreach initiatives to share U-576's story. The German Navy and ONMS have common interests in the protection and preservation of significant underwater cultural heritage such as the U-576. The agencies recognize the historical and archaeological significance of the submarine and its associated artifacts. Coordination and collaboration between the agencies will improve the ability to protect, preserve, and manage U-576 for the enjoyment of present and future generations. As the Monitor National Marine Sanctuary is 15 nautical miles southwest from the U-576 shipwreck, ONMS staff and resources, also provided by its Maritime Heritage Program, have an increased capacity for responsible research and stewardship activities.

BLUEFIELDS has been abandoned and as a merchant/commercial vessel is not subject to the laws regarding perpetuity of ownership as with the case of military or sunken state craft. Research has not identified any insurance claims associated with BLUEFIELD loss in 1942. Searches on online archives and through newspapers, focused on the freighter's last owner, A. Garcia & Cia. Ltda., and shows that the company went out of business in the 1950s. While there is no legal owner for the BLUEFIELDS, NOAA, through the Monitor National Marine Sanctuary, located 15 nautical miles southwest from the BLUEFIELDS shipwreck, will continue to study and document the site and interpret it for the public through non-intrusive methods.

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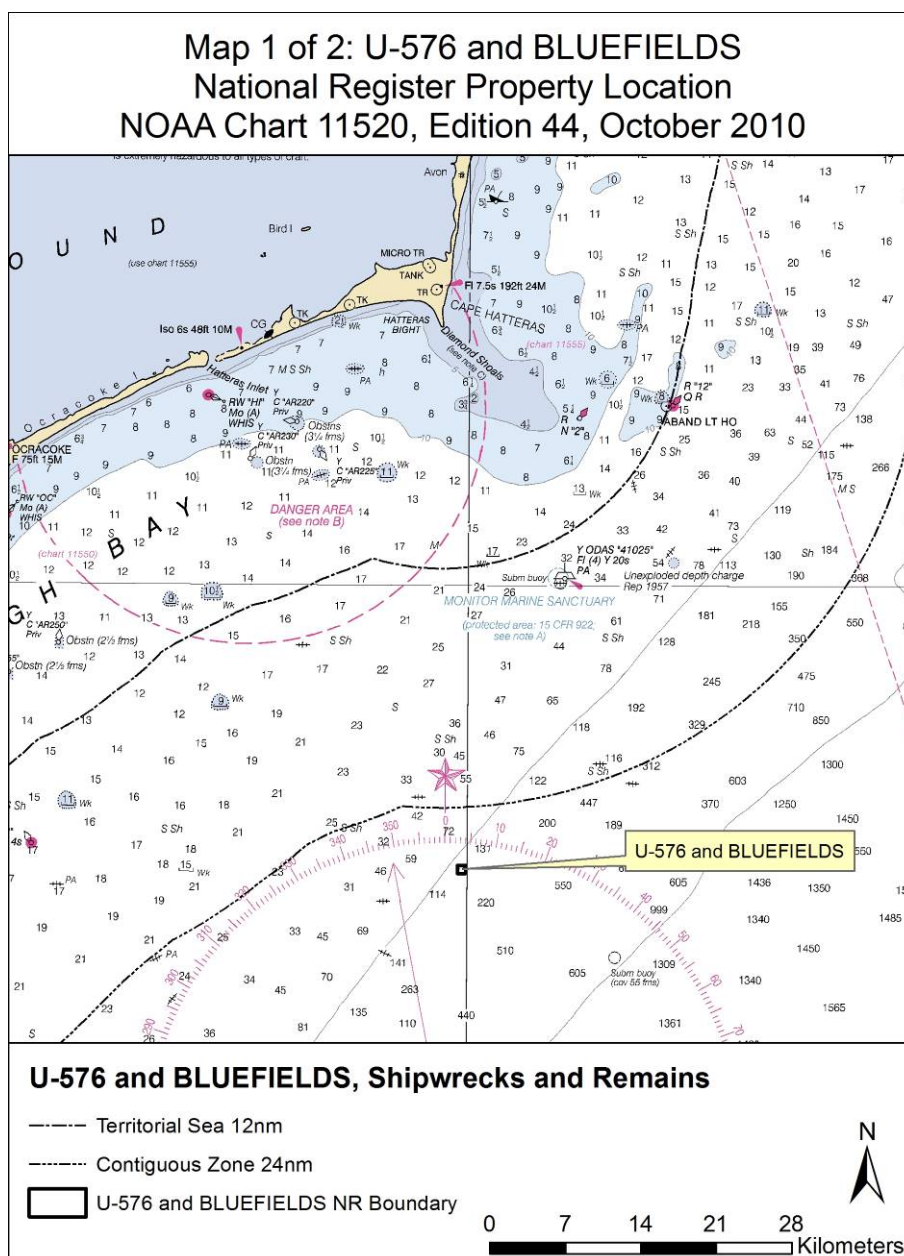
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Map 01.

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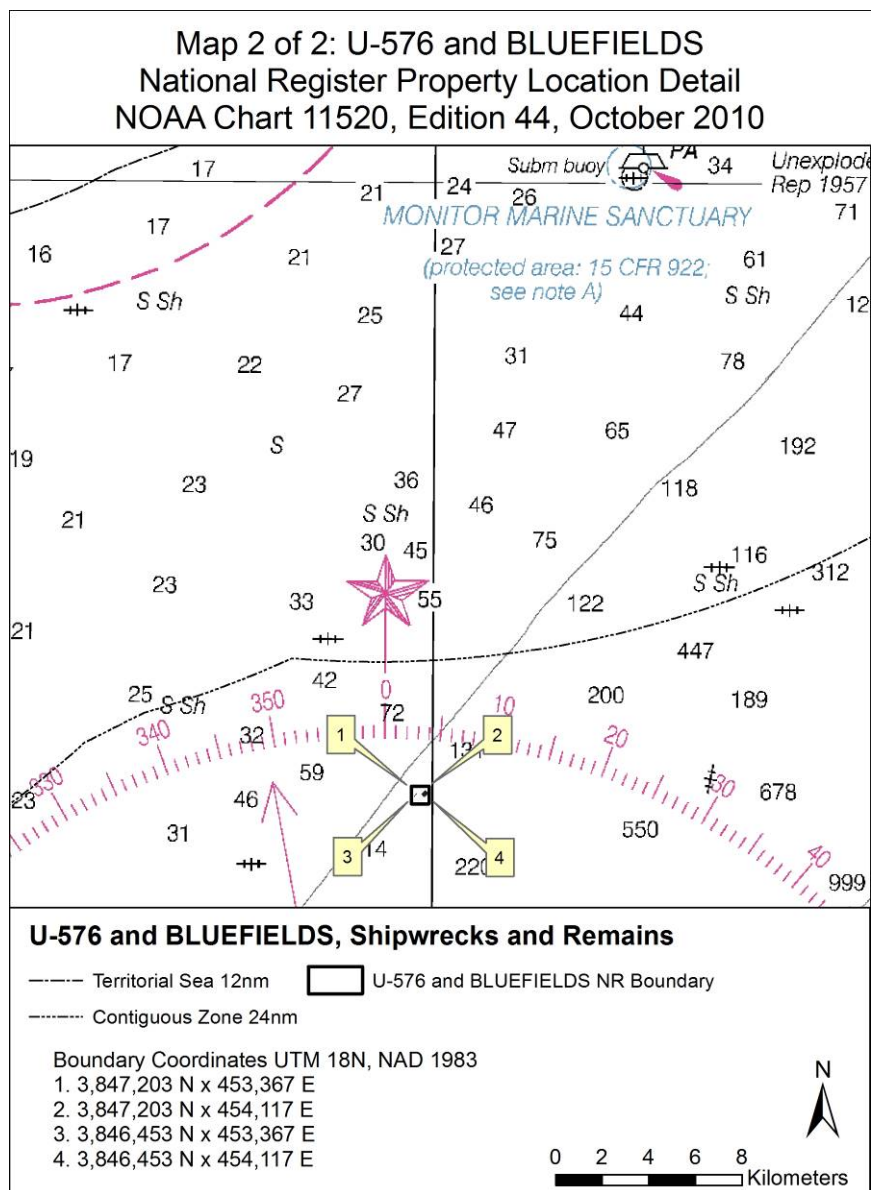
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Map 02.

Information on correspondence PDFs included on the CDs

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Correspondence 001. Letter on behalf of the German government that states they have no objections to the National Register nominations (page 1) as well as a copy of the email that was sent to notify them of the nominations for U-85, U-352, U-701 and U-576 as well as requesting a letter of support (page 2-5). NOAA was in the process of sending a hard copy letter signed by James Delgado (page 6) when they sent us their reply (page 1).

Correspondence 002. Correspondence between the German Embassy in Washington D.C. and the U.S. State Department from 2006-2009. The German Embassy was concerned about illegal disturbance of U-boats and requested on page 1 that the, “. . .State Department to look into how the sunken German submarines lying off the coast of Cape Hatteras and possibly other sites, which are undoubtedly war graves according to international law, could be protected from further disturbances and pillaging.”

Correspondence 003. NOAA press release announcing the discovery and identification of the U-576 and BLUEFIELDS dated 21 October 2014.

Correspondence 004. Cover letter addressed to the NC SHPO dated 1 September 2015 that accompanied the U-576 and BLUEFIELDS nomination's submission to the NC SHPO for review and comment.

Correspondence 005. Letter from North Carolina SHPO, dated 2 October 2015, stating the U-576 and BLUEFIELDS, in their opinion, meets the NRHP criteria and the nomination has been approved and signed.