NPS Form 10-900 OMB No. 1024-0018

United States Department of the Interior
National Park Service

806

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.

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Nat. Register of Historic Places
National Park Service

1. Name of Property

Historic name: U-701, shipwreck and remains
Other names/site number: _____
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-Buxton State: Offshore-NC County: Offshore-Dare
Not For Publication: [ ] Vicinity: [x]

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 X 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**

10/1/2015

Signature of certifying official/Title: **Date**

National Oceanic & Atmospheric Administration

State or Federal agency/bureau or Tribal Government

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

Signature of commenting official: **Date**

Kevin Cherry 9/22/2015

Title : Deputy Secretary/SHPO **State or Federal agency/bureau or Tribal Government**

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

1-12-2015
Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private: ☐

Public – Local ☐

Public – State ☐

Public – Federal X

Category of Property

(Check only **one** box.)

Building(s) ☐

District ☐

Site X

Structure ☐

Object ☐

Number of Resources within Property
(Do not include previously listed resources in the count)

Contributing	Noncontributing	
_____	_____	buildings
_____1_____	_____	sites
_____	_____	structures
_____	_____	objects
_____1_____	_____	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
_____
_____
_____
_____
_____

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

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.)

[X] 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.

[X] 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

Areas of Significance
(Enter categories from instructions.)
MARITIME HISTORY
MILITARY
ARCHAEOLOGY - HISTORIC

Period of Significance
1942

Significant Dates
June 1942 (arrived in U.S. waters)
7 July 1942 (sank)

Significant Person
(Complete only if Criterion B is marked above.)

Cultural Affiliation
N/A

Architect/Builder
H.C. Stülcken Sohn, Hamburg, Germany

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

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
__x_ Federal agency
____ Local government
__x_ 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 _61.77635_____

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates

Datum if other than WGS84:_____

(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 [X] NAD 1983

1. Zone: 18N	Easting:	489,574	Northing: 3,899,823
2. Zone: 18N	Easting:	490,074	Northing: 3,899,823
3. Zone: 18N	Easting:	490,074	Northing: 3,899,323
4. Zone: 18N	Easting :	489,574	Northing: 3,899,323

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

U-701 rests 20.1 nautical miles east of Cape Hatteras, North Carolina at a depth of 110 feet. The vessel's remains lie outside North Carolina state waters but still in United States' federal waters within the contiguous zone. North American Datum UTM coordinates for U-701, shipwreck and remains are 489,824 East 3,899,573 North. This location marks the center of the property. The 61.77635 acre site (a square 500 meters per side with boundary coordinates: northwest 489,5744 E x 3,899,823 N, northeast 490,074 E x 3,899,823 N, southwest 489,574 E x 3,899,323 N, southeast 490,074 E x 3,899,323 N) includes the main structure and debris field surrounding the U-boat. See Map 1 and 2 for locational details.

Boundary Justification (Explain why the boundaries were selected.)

The National Register boundaries of U-701 (shipwreck and remains) encompass the footprint of its articulated remains within a square (500 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.

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: 9/28/15

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 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.)

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-701 (shipwreck and remains)
City or Vicinity: Offshore – Buxton
County: Offshore – Dare State: Offshore - NC
Photographer: NOAA Monitor National Marine Sanctuary
Date Photographed: 2008
Description of Photograph(s) and number: Archaeological site map of U-701's wreck site. Photo 001. 1 of 5.

Name of Property: U-701 (shipwreck and remains)
City or Vicinity: Offshore – Buxton
County: Offshore – Dare State: Offshore - NC
Photographer: NOAA Monitor National Marine Sanctuary
Date Photographed: 2008
Description of Photograph(s) and number: U-701's hull and conning tower. Photo 002. 2 of 5.

Name of Property: U-701 (shipwreck and remains)
City or Vicinity: Offshore – Buxton
County: Offshore – Dare State: Offshore - NC
Photographer: Joseph Hoyt, NOAA Monitor National Marine Sanctuary
Date Photographed: July 2008
Description of Photograph(s) and number: U-701's deck gun and conning tower. Photo 003. 3 of 5.

Name of Property: U-701 (shipwreck and remains)
City or Vicinity: Offshore – Buxton
County: Offshore - Dare State: Offshore - NC
Photographer: Advanced Underwater Surveys
Date Photographed: 2011
Description of Photograph(s) and number: Multibeam sonar image of U-701 wreck site. Photo 004. 4 of 5.

Name of Property: U-701 (shipwreck and remains)
City or Vicinity: Offshore – Buxton
County: Offshore – Dare State: Offshore - NC
Photographer: Advanced Underwater Surveys
Date Photographed: 2011
Description of Photograph(s) and number: Isometric sonar visualization of U-701 wreck site. 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.

Section 7 - Description

SUMMARY

U-701 is the shipwreck and remains of a Type VIIC German U-boat that was sunk by a United States Army Air Force Hudson aircraft on 7 July 1942 during World War II. U-701 is significant to American military, maritime history, and historic archaeology as it was the first U-boat sunk by the United States Army Air Force off the American East Coast during the Battle of the Atlantic. U-701 had an overall length of 220.2 feet with a width of 20.4 feet and a depth of 15.7 feet. Launched on 16 April 1941, U-701 completed two full war patrols off Newfoundland and England before departing for the United States on 20 May 1942. During its third patrol off North Carolina U-701 was sunk with 39 of the 46 crewmembers lost during the incident. The remaining seven men became war prisoners until the end of World War II. U-701's wreck site rests in 110 feet of water 20.1 nautical miles east of Cape Hatteras, North Carolina. U-701's extant remains consist of portions of its outer hull, its pressure hull, saddle tanks, bow and stern torpedo tubes, dive planes, 88 mm deck gun and propulsion components. The vessel's longitudinal orientation runs nearly west to east. The submarine's bow is located at the west end and is easily distinguished by the presence of the bow torpedo tubes and bow dive planes.

SETTING

U-701 sits partially buried on a sandy bottom in 110 feet of water 20.1 nautical miles east of Cape Hatteras, North Carolina in an expanse of ocean often referred to as the Graveyard of the Atlantic due to the number of ships that have been lost in these waters. The strength of ocean currents on the site varies widely from nearly imperceptible to very swift. The strong currents along the sandy seabed typically result in scour around the wreck that leaves more of the port side of the submarine exposed than the starboard side. Depending on the current, visibility also varies, but commonly ranges around 10-40 feet. Summer water temperatures range between 70-80° F, and winter temperatures are typically in the low to mid-60°s F, making the site accessible to recreational SCUBA divers year round. The shipwreck's vertical relief is in stark contrast to the surrounding featureless sandy seafloor. Its structure serves as hard substrate for encrusting marine organisms and provides shelter for many species of marine life.

DESCRIPTION: ARCHAEOLOGICAL REMAINS

U-701 rests in one contiguous section on the seafloor (see Figure 001). The U-boat retains the overall shape of the submarine as constructed. U-701's remains are 221 feet long and the width varies at around 15 feet with the presence of the saddle tanks and remaining outer hull fairing. The site's vertical relief is dependent on sediment buildup around the wreckage, and although the

wreck rests with a slight list to starboard, the submarine's conning tower remains the highest point on the wreck (Richards and Hoyt 2014).

The majority of U-701's outer hull fairing is present and retains a remarkably high degree of preservation. Although some sections do show evidence of deterioration, it is possible that these areas coincide with damage incurred during the sinking event. The overall preservation of the wreck and its outer hull fairing is likely due to the shifting sands that have been known to cover large portions of the site (Richards and Hoyt 2014).

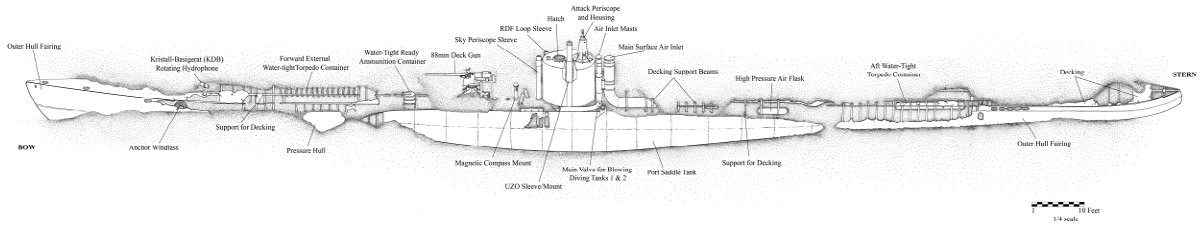

Figure 001. Archaeological site map of U-701's wreck site (courtesy of NOAA Monitor National Marine Sanctuary).

Due to the high amount of sand covering U-701 it is very well preserved. The protective outer hull plating, or fairing, is mostly intact for the length of the submarine but portions have deteriorated away exposing the inner pressure hull. At the bow the outer hull fairing is in good shape from the keel to the top of the deck where slots allowed water to drain off the U-boat while surfaced. It is unknown whether U-701 had wooden decking or metal decking as earlier U-boats were built with metal decks and as materials became scare during the war the yards switched to using wooden deck planks. The bow's distinctive shape and the stem's narrow thickness is visible due to the intact bow casing. Moving aft, the anchor windlass in still in place along with the Kristall-Basigerat (KDB) rotating hydrophone. This device allowed the U-boat crew to listen for the enemy, but due to its external location, it was very susceptible to depth charges. The deck framing and supports are visible from here back to the deck gun where the hull casing has eroded away. The forward external watertight torpedo container and water tight ammunition container both site just in front of the deck gun on the top of the deck (Richards and Hoyt 2014).

U-701's 88mm deck gun is still in place positioned in front of the conning tower. The sediment covers some of its base near the connection point with the hull but the rest of the structure is in excellent condition (see Figure 003). The bridge and conning tower make up the main components of the shipwreck and mark its center point. The saddle tanks, fitted on both sides of U-701, are at amidships, but due to the vessel's list to starboard, only the port one is visible. The bridge's outer casing is gone exposing the attack center or conning tower (see Figure 002). The

items associated with the bridge that are still in place are the magnetic compass mount, sky periscope sleeve, radio direction finder (RDF) sleeve, attack periscope and housing, as well as the U-boat targeting optics (UZO) sleeve and mount. The main escape watertight hatch, at the bridge's center, is open with the accompanying hatch cover gone allowing access into U-701. Just aft of the bridge is the air inlet mast and main surface air inlet for use while running the diesel engines and recharging batteries (Richards and Hoyt 2014).

Figure 002. U-701's conning tower (courtesy of NOAA Monitor National Marine Sanctuary).

As with U-701's bow section, aft of the bridge toward the stern is comprised of the outer hull fairing with portions of the pressure hull and deck supports. A high pressure air flask and aft water tight torpedo container are the main identifiable features towards the stern. Sediment covers most of the U-boat with only the very top of the hull exposed. There is likely a higher degree of preservation below the main top deck that is covered under the sand and currently not exposed. The shifting sand revels and then conceals portions of the site on a regular basis. Divers report observing other intact features of U-701 when the sand moves around, such as the port side rudder and propeller (Richards and Hoyt 2014).

Despite the high level of preservation and the fact that much of the site remains significantly intact, U-701 has nevertheless been impacted by anthropogenic and natural processes.

Figure 003. U-701's deck gun and conning tower (courtesy of Joseph Hoyt, NOAA Monitor National Marine Sanctuary).

Site reports and photographic documentation reveals the following impacts to U-701 (Richards and Hoyt 2014):

- The conning tower's main hatch has been removed. There is clear evidence this was the result of human impacts and occurred sometime after 2004.
- The radio direction finding loop has been removed. There is clear evidence this was the result of human impacts and occurred sometime after 2004.
- The main periscope or sky periscope and a section of its housing has been cut off and removed sometime after 2004.
- The 88mm deck gun's safety harnesses have been removed sometime after 2004.
- Various small components of the 88mm deck gun have been removed.
- The 88mm brass gun sight has been removed.
- The magnetic compass head is missing.
- The location of 20mm anti-aircraft gun is unknown. It is likely that this fell off as the conning tower fairing structure, which was made of the lighter material, corroded to the point where it could no longer support the gun. This means that the gun may still be present but completely covered by sand. Alternatively, it may have been recovered by divers, but early dive reports do not mention the presence of the gun. It is possible that natural forces have resulted in the gun being buried by sand, and it is likely still within close proximity of the wreck.

- If the U-boat was fitted with wooden decking, it is completely gone. This is undoubtedly would have been a natural process and the wood would have decayed in a submerged environment.
- The conning tower plating is completely gone. This portion would have had a higher likelihood of exposure to the elements and it is believed to have been natural processes that caused the feature's deterioration.

Even with the above natural and anthropogenic impacts to U-701, the property still retains enough integrity to meet the National Register Criteria A and D and be significant to the nation. Ample archaeological information can still be obtained from the shipwreck and research questions can be answered about its construction, weaponry, sinking and crew. U-701 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.

SITE INVESTIGATIONS

It took many years for the final resting place of U-701 to be found. The shipwreck was initially discovered with a magnetometer in 1989, by recreational scuba divers Uwe Lovas and his brother Ron and friend Alan Russell. When the first divers visited the site they remarked that it was nearly buried in the sand with very few parts besides the port saddle tank, deck gun and conning tower visible (Gentile 1993:204-208). In order to reduce site disturbances, these divers kept the wreck's location a secret from the larger diving community. As a result, only a few artifacts were recovered from the site before 2004 (Keatts and Farr 1994:115; Kozak, 2004). In 2004, additional scuba divers located the site and the geographical coordinates were distributed within the diving community. Despite numerous divers requesting that the site be protected and left unadulterated, the site was still subjected to illegal artifact salvage (Allegood 2004; Kozak 2004).

Although some artifacts have been illegally disturbed and/or salvaged, the site remained fairly intact when recently surveyed by the National Oceanic and Atmospheric Administration (NOAA). In 2008, maritime archaeologists and researchers from NOAA's Office of National Marine Sanctuaries Monitor National Marine Sanctuary, the National Park Service, the Minerals Management Service, East Carolina University and the University of North Carolina's Coastal Studies Institute conducted an archaeological investigation of U-701 using scuba diving equipment and standard underwater archaeology recording techniques. The project was conducted after being contacted by the Consul General at the German Embassy in Washington, D.C. who requested NOAA take the lead in carrying out a baseline archaeological investigation of the three U-boats located off North Carolina, U-*85*, U-*352*, and U-701, in response to reports that additional illegal salvage might occur in the near future. The research design identified

several goals and questions to be addressed during the investigation and assessment of U-701. The research goals included (Richards and Hoyt 2014):

1) Assess the historical significance and archaeological integrity of U-701;
2) Determining if U-701 is eligible for nomination to the National Register of Historic Places;
3) Identify the degree to which site preservation is influenced by environmental formation processes and anthropogenic impacts;
4) Determine whether or not U-701 warrants further investigation;
5) Complete a thorough exterior survey and artifact inventory;
6) Produce a site map for interpretation and as a representation of baseline data for future monitoring;
7) Complete a detailed video and photographic survey.

The investigation generated an accurate archaeological site plan, collected photographs and video footage and compared the levels of preservation between the three U-boat sites within recreational scuba diving depths off the coast of North Carolina. The information gathered during the survey will enable archaeologists to monitor U-701 for continued degradation and illegal artifact recovery.

Documentation of degradation to U-701 was a high priority for this survey. Data collected during this expedition can be used to compare to earlier site representations. It is important to note what is natural degradation, due to formation processes, and what anthropogenic threats caused by divers. This will hopefully allow for an assessment of impacts that will allow for educated recommendations for future mitigation. The 2008 investigation identified the following features of U-701 that are believed to be threatened due to anthropogenic processes (Richards and Hoyt 2014):

- During the 2008 survey, the attack periscope was present and in good condition with the glass lens still intact. It protrudes approximately one foot out of the housing sleeve.
- The KDB rotating hydrophone is exposed and accessible. This feature is significant as U-701 is the only U-boat site off North Carolina where this feature still exists.
- U-701's internal components are in jeopardy if divers penetrate the submarine including smaller artifacts, personal effects and human remains that are still believed to be present on the site.

During the NOAA Monitor National Marine Sanctuary's 2011 Battle of the Atlantic Expedition, U-701 was revisited and surveyed using high resolution multibeam sonar. This survey generated a detailed geographically accurate image of the site as well as a 3D point cloud model of the

submarine that can be used for advanced three dimensional visualization using computer software (see Figure 004 and 005). During this same expedition, divers from Woods Hole Oceanographic Institute's (WHOI) Advanced Imaging and Visualization Laboratory (AIVL) documented the site using high-resolution 3D video cameras, which will enable researchers to view the site in three dimensions and will allow people that do not dive to experience this unique historical and cultural resource (Richards and Hoyt 2014).

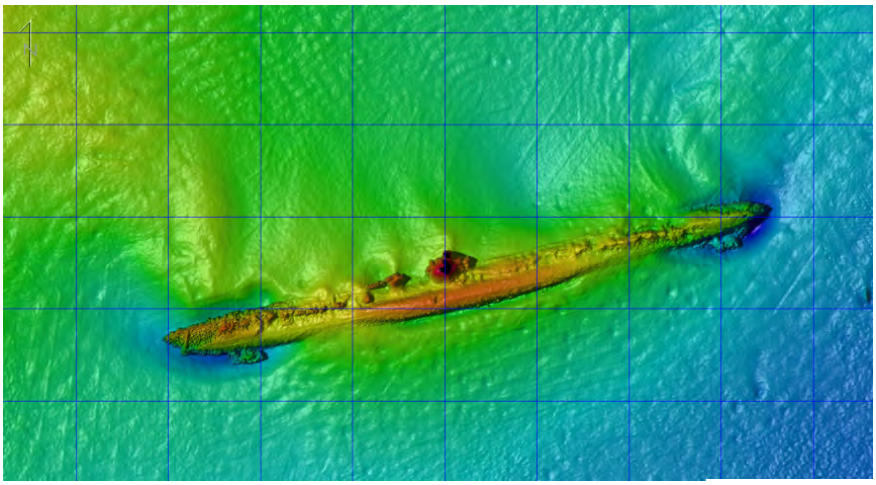

Figure 004. Multibeam sonar image of U-701 wreck site (courtesy of Advanced Underwater Surveys).

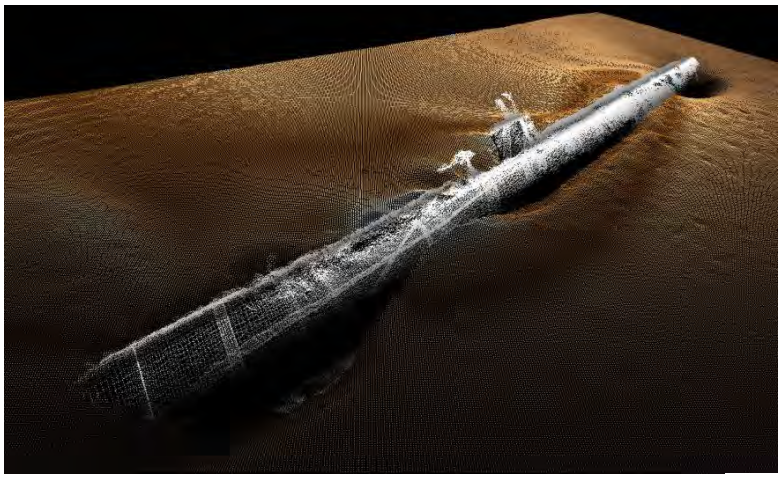

Figure 005. Isometric sonar visualization of U-701 wreck site (courtesy of Advanced Underwater Surveys).

NOAA's expeditions to U-701 were part of a larger multi-year project 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 is to raise awareness of a 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 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 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).

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 document. U-701 was the third 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.

Section 8 – Statement of Significance

SUMMARY

The Type VIIC German submarine U-701 is significant to American maritime history, military, and historic archaeology as it was the first U-boat sunk during World War II by the United States Army Air Forces off the American East Coast. U-701 is one of a number of shipwrecks associated with the Battle of the Atlantic off the United States East Coast and Gulf of Mexico that together become an assemblage of historic properties that collectively tells a more complete story of this significant period in American history. In order to make these broader connections to our maritime landscape individual properties like U-701 are examined and characterized and weaved into the larger story. 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-701. Overall, U-701 was the third U-boat sunk during World War II off the United States East Coast and Gulf of Mexico. On 7 July 1942, an Army Air Force aircraft depth charged and sank U-701 while it was on its third war patrol. Thirty-nine of U-701's 46 crewmembers perished while the remaining seven men became war prisoners until the end of World War II. U-701's archaeological remains are significant at the national level under National Register of Historic Places Criteria A and D with the period of significance being 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-701 is included as one of the Axis military losses associated with the Battle of the Atlantic in the document.

U-701 qualifies for listing under National Register of Historic Places Criteria A and is significant in the area of Maritime History based upon U-701's 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. The battlefield 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 highly vulnerable to attack 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 became the epicenter of conflict as German U-boats, like U-

701, prowled the coast in search of targets. Merchant vessels were also targeted coming in and out of harbors through the use of U-boat laid mine fields such as those deployed at the mouth of the Chesapeake Bay by U-701. Even when vessels were near port and anchorages they were not safe and many fell victim to German mines. Merchant mariners faced new challenges during the Battle of the Atlantic and U-701 represents the use of both passive (underwater mines) and active (torpedoes) means to disrupt the flow of commerce.

U-701 qualifies for listing under National Register of Historic Places Criteria A and is significant in the area of Military based U-352's association with Allied and Axis military operations off the Outer Banks during World War II in 1942. The shipwreck is nominated for the significant 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-701, just miles outside of Oregon Inlet, North Carolina, 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 off the shores of the American mainland. U-701 is also significant to military history as it was the first U-boat sunk by U.S. Army Air Forces off the American East Coast during World War II. The successful air attack demonstrated that planes were a viable and useful means to sink U-boats. Prior to U-701's demise it was also engage in a special mission laying mines at the beginning of the patrol off the United States. The submarine deployed mines at the mouth of Chesapeake Bay in June 1942 that resulted in two ships sinking and three more severely damaged. U-701's mining operation ended up being the only one carried out by German U-boats in U.S. waters with verifiable success during the entire war.

U-701 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 import to history. The property is significant in that the wreck is a Type VIIC German U-boat, of which 660 were built but not many have been located and archaeologically assessed. While a large number of Type VIIC U-boats were built, U-701 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 and only one of two within recreational scuba diving depths off the American coast making long term site investigations feasible. Of the know Type VIIC sites, U-701 has been protected by obscurity until it was rediscovered a little over ten years ago by recreational divers. Since the site remained undiscovered for such a long period, only minimal alteration and disturbance of the site's integrity has occurred. Archaeological investigations of the submarine's hull, machinery, armament and cultural artifacts may provide information that will confirm or contradict historical records. Due to the excellent level of site preservation and the ease of access, U-701 provides a valuable opportunity to study a relatively intact World War II U-boat in

order to answer questions about the Battle of the Atlantic, German submarines, the German Navy, or World War II in general. Technical questions relating to variations in submarine design and variability can also be asked and studied at U-701. Additionally, site impacts from human visitation and natural processes can be assessed and compared to other similar sites off North Carolina and suggestions for mitigation can be raised, which will enable this important historic and economic resource to be successfully managed and protected.

HISTORICAL SIGNIFICANCE

The U-boat 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).

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-701 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 (Krzysztalowicz 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 fourteen G7a or G7b torpedoes (4 tubes in the bow and 1 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 thirty-six TMA or thirty-nine 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 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 (Krzysztalowicz 2011:12).

U-701 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" (Krzysztalowicz 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 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 (Krzysztalowicz 2011:20).

Due to the large number of Type VIIC U-boats it is thought that they were "mass produced" with little variation between individual submarines. In actuality they were not 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 observed, 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 (Krzysztalowicz 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 their U-boat even before it was in the water and be intimately acquainted with its operation well before heading to battle.

U-701 CAREER (1941 to 1942)

U-701 was the first U-boat built by Stülcken Sohn shipyard in Hamburg, Germany. The keel was laid on 3 May 1940. The shipyard built (and were later commissioned into the Kriegsmarine) twenty-four Type VIIC (U-701 through U-*722*, U-*905*, and U-*907*). The conning tower of U-701 was decorated with a sea robin. It was unusual for a U-boat's construction to take nearly a year, but in the case of U-701, the duration of construction was attributed to the fact that the yard had not produced a U-boat before and was still inefficient at constructing one. Since the shipyard had never built a U-boat, there were several significant issues encountered during the construction of the U-701 that required substantial refitting and reworking (USONI 1942:5**;** Wynn 1997:125).

With so many Type VIIC U-boats created one manufacturer could not supply all the diesel engines needed, so there were options for the engine model available for U-701. The builders equipped it with Germaniawerft F46 supercharged diesel engines which generated 1,400 horsepower at 470 to 490 rpm. Its two GL RP 137/c electric motors were used only while submerged. The electric motor's power was stored in two battery banks made up of sixty-two AFA 33 MAL 800 E cells. Battery life was around twenty hours before needing to be recharged from the diesel engines (Krzysztalowicz 2011:21; Wynn 1997:232).

As U-701 neared the end of its construction, the crew was ordered to Hamburg to oversee the completion of their vessel. U-701's crew consisted of four officers, a midshipman and 38 men. This activity, known as Baubelehrung, was done to familiarize the entire crew with the intricate details of the entire vessel and was required of every crew that took command of a new U-boat. Baubelehrung for the crew of U-701 began in May 1941, a month after the submarine's launch on 16 April 1941(Busch and Röll 1999:53).

On 16 July 1941, the Kriegsmarine commissioned U-701 with the Feld Post number 44 322. Sea trials were next in the Baltic Sea under the scrutiny of the U-Bootsabnahmekommission (U-boat Acceptance Commission). During these trials the inadequacies and deficiencies in U-701's construction were exposed, and the vessel was sent to the Danzigwerft in Danzing for repairs. It was found that U-701 was incorrectly wired electrically and that the air and oil line systems were not properly fitted and connected. This might have been the result of U-701 being the first Type VIIC built by at Stülcken Sohn as well as its blueprints coming from two different shipyards, Blohm and Voss Yards and Germania Werft. After the yard in Danzing proved incapable of carrying out the necessary repairs, U-701 was ordered to report back to Stülcken Sohn for an overhaul of the faulty systems (USONI 1942:5).

A second series sea trials in the Baltic occurred in October 1941 and U-701 was then finally ready for artillery and torpedo firing practice. It joined nine other U-boats during the tactical exercises that lasted about a month before its final overhaul and outfitting of fuel and torpedoes for the first war patrol. U-701's compliment during this period was five officers and forty men. In all U-701 experienced a five month delay before its first war patrol commenced (USONI 1942:6).

Command of U-701 was given to Kapitänleutnant Horst Degen of the Naval Class of 1933. Degen was born in Münster, Westphalia on 19 July 1913 and had served as the Second Watch Officer and the Torpedo and Radio Technical Officer on the destroyer *Z 10 Hans Lody* from September 1939 until June 1940. He transferred to the U-boat arm in July 1940 and by March 1941 had completed the U-boat commander's course. Upon completion, Degen was assigned to *U-552*, commanded by Erich Topp, for commanders training (Busch and Röll 1999:53). Topp, who would become one of the most famous U-boat skippers of the war, ranking fourth in overall tonnage sunk, was an aggressive U-boat tactician and would greatly influence Degen. Degen held Topp in high regard and would claim that Topp, "taught me all I know" (USONI 1942:5).

Almost immediately upon his return from commanders training, Degen traveled to Hamburg to begin Baubelehrung and take command of U-701. Degen's U-boat was then attached to the third U-boat Flotilla based at La Pallice, France and he and his crew embarked from Kiel on their first war cruise aboard on 27 December 1941. Its first operational area was the northwest approaches to England. Degen took U-701 southward between Iceland and the Faeroes and skirted an area known by Germans as the "Rose Garden" because of the large amount of drifting mines (USONI 1942:7). He then continued west toward Newfoundland, the intended patrol zone.

U-701's first war patrol was very difficult. On 31 December, while en route to Newfoundland, First Watch Officer Lieutenant Weinitschke was swept overboard and lost after going on deck in heavy weather without a safety belt (USONI 1942:7). Between 2 January and 7 January, Degen found and attacked several ships. Even though Degen fired 11 torpedoes, only two of these found their target which was the 3,657 ton British freighter *Baron Erskine*. Two of U-701's electric torpedoes sunk *Baron Erskine* south of Iceland near Rockall. After *Baron Erskine* sank, Degen approached the lifeboat with survivors to find out the name of the vessel that he had fired upon, but the survivors refused to provide him with this information. Due to the severe weather at the time, Degen later expressed his suspicion that the lifeboats would not make it to shore. Sadly, Degen was correct in his prediction; no crewmembers of *Baron Erskine* ever made it to shore (Gannon 1990:144).

The weather encountered during the rest of U-701's Atlantic crossing was atrocious. Degen's crew could not maintain an appropriate topside watch and after heavy seas caused a bridge gun

to come loose, injuring the Second Watch Officers, Degen decided to run submerged. This meant that Degen was unable to replenish his torpedo supply until calm weather would allow him to access the reserve torpedoes stored outside the pressure hull. After a nearly five week patrol, U-701 was ordered back to port. The submarine returned to St. Nazaire on 9 February 1942 having sunk only one vessel. Degen received harsh criticism from Admiral Dönitz for this rather unimpressive patrol. His expenditure of 11 torpedoes was thought to be excessive and rash. Dönitz believed Degen did not conduct an adequate search for the First Watch Officer that was washed overboard and he was also dissatisfied that U-701 only sank one vessel that was outside of the intended operational area (Blair 1996:143, 543).

Despite U-701's disappointing first war patrol, Dönitz felt Degen 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 a war 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 German 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). U-701 would eventually leave in May 1942 and continue the German push across the Atlantic to attack merchant shipping near the United States' shores (Blair 1996:453, 727).

As the battle along the American East Coast progressed, the waters off North Carolina, particularly near Cape Hatteras, were recognized by the Germans as the best geographical location in which to intercept unprotected merchant vessels. This area was also recognized by America and America's allies as some of the deadliest sea lanes for merchant mariners to traverse in every theater of the 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 U-boats had to patrol, the German wolf-pack tactics were not as practical and many vessels, though still in loose groups, were operating individually.

After a little over two weeks in St. Nazaire, U-701 embarked on its second war patrol on 26 February 1941. Dönitz had planned to send U-701 to American waters, but at the last minute he diverted Degen to maintain a strong presence in England's Northwest Approaches. In contrast to the previous patrol, Degen enjoyed great success on his second patrol. From 6 March to 11

March, Degen confirmed that he sank three ships and possibly sank a fourth ship, while only expending seven torpedoes. The three ships Degen confirmed he destroyed were the 213 ton fishing trawler *Faroese Nyggjaberg*, which sank within two minutes with all hands lost, the 541 ton British antisubmarine trawler HMS *Notts County*, and another armed trawler of the same class, HMS *Stella Cappella*. The remainder of the patrol was unrewarding due to heavy weather that prevented more attacks from being carried out. By 1 April, U-701 had made its way back to Brest, France, wrapping up a successful second patrol (USONI 1942:8; Blair 1996:552; Wynn 1997:126). This patrol evidently redeemed Degen in the eyes of Dönitz, whom subsequently referred to him as the 'Gallant Degen' (Taylor 1958:178).

U-701's crew enjoyed more than a month of liberty while in Brest and did not embark again until 19 May 1942 for a short trip to Lorient for refueling. The U-boat embarked on its third war patrol on 20 May 1942 (Wynn 1997:126). This would not only be the most successful patrol of the U-701, but it would also be its last. This patrol was launched in unison with seven other boats in a group dubbed group Hecht. Five of the Hecht boats, including U-701, were diverted on special missions. The special operations of these five U-boats represent possibly the most aggressive and coordinated U-boat assault on the United States during the entire war.

U-701 ARRIVES OFF THE U.S. (1942)

Three of the U-boats were assigned to lay mines in the approaches to the busy shipping lanes leading in and out of Delaware Bay, Boston Harbor and the Chesapeake Bay. Meanwhile, the other two U-boats landed Abwehr agents (the German equivalent of a CIA operative) on Long Island and in North Florida. These two groups of agents intended to meet in Cincinnati, Ohio and sabotage aircraft and tank building factories as well as shipyards. The five boats tasked with these special missions were supposed to converge off Cape Hatteras after completing their special tasks and resume hunting merchant freighters and tankers (Blair 1996:602).

U-701, which was assigned the task of laying mines across the mouth of the Chesapeake Bay, arrived at the entrance to the Chesapeake Bay off Virginia on 12 June 1942 and proceeded to strategically deploy 15 delayed action TMB mines. Lights on Cape Henry and Cape Charles were still burning bright despite the many U-boat attacks in American waters, which allowed Degen to accurately judge his location. Within 30 minutes, U-701 had deposited all of its mines in 36 feet of water and directly in the main shipping channel (Hickam 1989:246; Blair 1996:602; Wynn 1997:126). It was a difficult and dangerous task for U-701 to navigate in the Chesapeake Bay approaches. The Allied minefield, used to prevent the U-boats from entering the area, extended out 30 miles to sea and a small winding channel was the only way in and out. Intelligence gained from neutral ships vising Baltimore allowed Degen to complete his mission and lay his own mines.

> While it seems suicidal that the enemy would send a valuable warship [U-701] and its crew on such a daring and deadly exploit, consider this exposé. Neutral ships who papers were inspected after docking in Baltimore were found to have routing instructions different from those issued by the Allies. They were quite specific as to which routes to follow and which to avoid upon entering the Chesapeake Bay. That area to be avoided was exactly where German mines had been swept up. The implication is obvious: German intelligence was trading information with neutral nations to the benefit of both (Gentile 1993:188).

The minefield laid by U-701 was very productive, sinking two ships and severely damaging three others. On 15 June 1942, convoy KN-109 bound from Key West to Norfolk came into contact with the active mine field. The first two ships hit were American, the 11,237 ton *Esso Augusta* and the 11,615 ton *Robert C. Tuttle*. Although these ships were severely damaged, they were able to be repaired and returned to service. On the same day, the 448 ton British anti-submarine trawler, HMS *Kingston Ceylonite* struck another of Degen's mines and was destroyed. Additionally, the 1,190 ton, 165-foot Coast Guard cutter USS *Bainbridge* was slightly damaged when one of its own depth charges detonated a nearby mine. Following this destruction, the channel was closed until it could be swept for mines. After extensive mine sweeping operations, the shipping channel was believed to be clear of mines and was reopened. Unfortunately, this was not the case and a remaining mine struck and sank the 7,117 ton American freighter *Santore* on 17 June 1942 (Hickam 1989:256; Chewning 1994:95; Blair 1996:602; Wynn 1997:126).

U-701's mining operation in the Chesapeake was a success in the eyes of Dönitz, who sent Degen a congratulatory radio message. U-701 ended up being the only U-boat from group Hecht that succeeded in its special mission. Additionally, this was the only mining operation in United States waters that Germany carried out with palpable success during the entire war. Following the mining operation, Degen took U-701 to Cape Hatteras to seek out and destroy merchant vessels. For about a week, however, U-701's crew had poor luck. Their ventilation system was functioning poorly, the boat was extremely hot in the warm Gulf Stream waters off North Carolina and seasickness was becoming a big problem. Degen had also spotted several convoys and fired off two torpedoes which did not find targets. On another occasion the U-boat was aerially bombed by aircraft, which caused damage to multiple gauges and to his main periscope.

On 19 June 1942, U-701 came into contact with the small 170-ton armed U.S. Navy patrol boat, USS YP-*389*. Degen had possibly encountered and avoided this same vessel a number of times over the preceding days and finally decided to destroy the small patrol craft so that he could

resume his operations unhampered. Not wishing to waste a torpedo on such an insignificant vessel, Degen decided to sink the vessel with his own deck guns. After a brutal exchange of fire between the two vessels lasting nearly an hour and a half, YP-*389* succumbed despite an impressive resilience for such a small craft and ultimately sank near the Diamond Shoals Light Buoy (USONI 1942:12; Hickam 1989:262; Blair 1996:606; Wynn 1997:126).

After sinking YP-*389,* another uneventful week would pass for U-701. U-701's crew spent most days on the bottom conserving fuel and only surfacing long enough to flush the heat and stench out of the boat. During this time strict watch was kept for patrolling aircraft, which were spotted on a continuous basis. On 26 June, Degen torpedoed but only slightly damaged the unescorted 7,256 ton Norwegian freighter *Tamesis* off Cape Hatteras. The next day he spotted the southbound convoy, KS-514, with 31 ships positioned in nine columns moving slowly at six knots. U-701 launched two torpedoes at the 6,985 ton British tanker *British Freedom*. Only one torpedo hit the tanker in its side but did not fatally wound it and eventually the tanker headed back for Norfolk for repairs (Gentile 1993:191-192).

The converted yacht USS *St. Augustine* (PG-54), operating in the same area of U-701's activities on 26 and 27 June, heard the submarine on its sonar and dropped five depth charges causing damage to the conning tower's gauges. USS *St. Augustine* continued the hunt and relocated the target and deployed another four depth charges. This hit knocked out U-701's air-circulators. For a third time the converted yacht pursued U-701 and laid a pattern of four depth charges, again further damaging to the conning tower but not ultimately sinking it (Gentile 1993:192).

For Degen and U-701's crew, this had already been an exceptional patrol despite the constant hazard of Allied aircraft and naval patrols, but on 28 June, luck was still on their side and they encountered the American tanker SS *William Rockefeller*. Degen spotted the tanker while coming up to the surface at periscope depth to vent the submarine as a result of its air-circulators being disabled. This was one of the largest tankers in the world at the time of its construction in 1921 and was classified as 14,054 tons. Sinking *William Rockefeller* would be a perfect ending to Degen's highly productive patrol. Degen fired one well-aimed torpedo at the tanker, which hit on the port side and caused severe damage to *William Rockefeller*.

The tanker was being escorted by Coast Guard aircraft, which dutifully dropped two depth charges and called up the 83 foot Coast Guard Cutter Number *470* to assist. The cutter arrived on site and conducted a depth charge attack that was ineffectual aside from it keeping Degen away. *William Rockefeller* was severely damaged and burning so the crew abandoned the vessel and left it adrift hoping it could be salvaged after the flames had subsided. After dark, Degen returned to the drifting *Rockefeller* and fired one more torpedo into the burning hull, which sent

the tanker to the ocean bottom (USONI 1942:12; Hickam 1989:262; Blair 1996:606; Wynn 1997:126).

William Rockefeller's sinking meant that Degen had attacked nine vessels, sunk 21,789 tons and damaged an additional 38,283. Totaled 60,072 tons, this was the best patrol of any Type VII U-boat to date during World War II (Blair 1996:608). Three of these nine vessels were warships and one was the largest tanker sunk by a U-boat up to that point. The success of the mining operation was also highly regarded by Dönitz and earned Degen much praise. Unfortunately, for Degen and the rest of U-701's crew, however, the patrol was not yet over.

U-701's DEMISE (7 JULY 1942)

U-701 continued to patrol off Cape Hatteras for over week after the sinking of *William Rockefeller*. During the day, they sat on the bottom, occasionally coming to the surface to charge batteries and flush the boat with fresh air. On 7 July 1942, while on the surface at approximately 1:00 p.m., first watch officer, Konrad Junker, failed to spot a patrolling Army Air Force A-29 Hudson airplane. By the time Junker noticed the plane, it was too late. The Hudson, piloted by Lieutenant Harry Kane out of Cherry Point, North Carolina, accurately dropped a spread of three 325-pound depth charges along the length of the U-boat (USONI 1942:12; Hickam 1989:262; Blair 1996:606; Wynn 1997:126).

As U-701 attempted to crash dive, the U-boat was already underwater when the charges detonated and fatally damaged the submarine. The first one missed, the second one hit aft of the conning tower and the third detonated between the bow and the conning tower. U-701 was only about 20 feet underwater but the damage was so extensive that Degen could not blow the ballast tanks to surface. U-701's crew had to bail-out as U-701 sank. Two separate groups of survivors reached the surface 30 minutes apart, which accounted for all but seven of the U-boat crew. The first group of men came from the conning tower hatch and the second group came from the bow. Most crewmen abandoned the submerged submarine without the aid of life preservers or escape lungs. Kane was not able to offer immediate assistance in his airplane however, except to radio in the position of the attack and drop a smoke flare and some limited supplies (Gentile 1993: 194-195).

U-701's remaining 36 crewmembers were left adrift in the Gulf Stream for 49 hours. During that time, all but seven of the crew became exhausted and drowned. On 10 July, the U.S. Navy blimp K-*8* spotted the survivors and called in a Coast Guard sea plane, which landed and recovered the seven men including Kapitänleutnant Horst Degen. When they were rescued, 90 miles from the original sinking location, they were suffering heavily from exposure to the elements and were covered in large amounts of bunker oil. After a short recovery period, Harry

Kane and the crew went and met with Degen to apologize for not being able to render more assistance. Degen, a gracious prisoner, looked at Lieutenant Kane and offered the pilot his congratulations with the short phrase "Nice Shot."

Lieutenant Kane and his Hudson bomber crew were hailed as heroes as this successful attack was the first time American forces had been able to defeat a U-boat from the air. U-701's crew became prisoners of war (POWs) and, within three hours of landing on shore, were undergoing interrogation at the Norfolk Navy Yard. On 12 July, the POWs were transferred to various prison camps in Florida and Arizona until the end of the war. In June 1946, all seven men were repatriated (USONI 1942:12; Hoyt 1978:184; Hickam 1989:262; Blair 1996:606; Wynn 1997: 126).

CONCLUSIONS

U-701 was a U-boat that enjoyed great success along the American East Coast but failed to return home. This submarine is a historically significant U-boat lost off the United States' coast during World War II. It was by far the most operationally successful of any of the U-boats sunk off North Carolina's coast and participated in one of the most aggressive U-boat assaults on the American East Coast through is mine laying and torpedo attacks. During its assault in U.S. waters during 1942, U-701 carried out the most fruitful patrols of any U-boat of its class in American waters during the entire war and was the only German U-boat to carry out a successful mining operation of any domestic port. From an American military history perspective, this site is also significant. U-701 was the first enemy submarine sunk by an aircraft without the assistance of surface vessels. This important undertaking was carried out by members of the United States Army Air Force operating out of Cherry Point, North Carolina. The successful attack on U-701 by the Army Air Force was a great victory for the U.S. coastal patrol forces and demonstrated that servicemen from all branches of the U.S. military were beginning to learn how to defeat the German U-boats.

U-701's captain, Kapitänleutnant Horst Degen's, "brief record of accomplishment as commander of U-701, while not particularly outstanding in terms of tonnage accounted for, is characterized, nevertheless, by the boldness of his attacks, carried out for the most part in broad daylight and in the face of vigorous opposition from escort vessels and protecting aircraft" (United States Office of Naval Intelligence 1942:3).

Although the successful removal of U-boats from American Waters would take several more months, U-701's sinking proved coastal patrols were a viable strategy and helped signal the end of the German U-boat's ability to attack merchant vessels with impunity. U-701's wreckage stands as a testament of this historic engagement and as a sign of the dedication of U.S. Naval

forces in eliminating a foreign threat during World War II. Today, the wreck site is a frequently visited U-boat shipwreck off the coast of North Carolina and, as such, it an important economic driver for cultural resource tourism of the Outer Banks and helps support the local recreational diving community.

There are 22 submarines listed on the National Register of Historic Places or listed as a National Historic Landmark (see Table 2). 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) 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 2. 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 several years before being donated in 1954 to the Museum of Science and Industry in Chicago, Illinois. In order to gain intelligence materials on U-boats, after the surrender of U-*1105* and capture of U-*505* they were stripped of most of their interior components. Unlike the previous two U-boats, U-701 was sunk during active duty during World War II. Its shipwreck and remains are significant and represent a Type VIIC U-boat in in an operational state with a majority of its original features intact and available for study.

WRECKSITE MANAGEMENT

As a sunken foreign military vessel, not otherwise abandoned, disposed of or had its title transferred, U-701 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, 39 crewmembers perished during its loss and human remains have been located 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-701, 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 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-701. 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-701’s story. The German Navy and ONMS have common interests in the

protection and preservation of significant underwater cultural heritage such as the U-701. The agencies recognize the historical and archaeological significance of the submarine its associated artifacts. Coordination and collaboration between the agencies will improve the ability to protect, preserve, and manage U-701 for the enjoyment of present and future generations. As the Monitor National Marine Sanctuary is 20 nautical miles northeast from the U-701 shipwreck, ONMS staff and resources, also provided by its Maritime Heritage Program, have an increased capacity for responsible research and stewardship activities.

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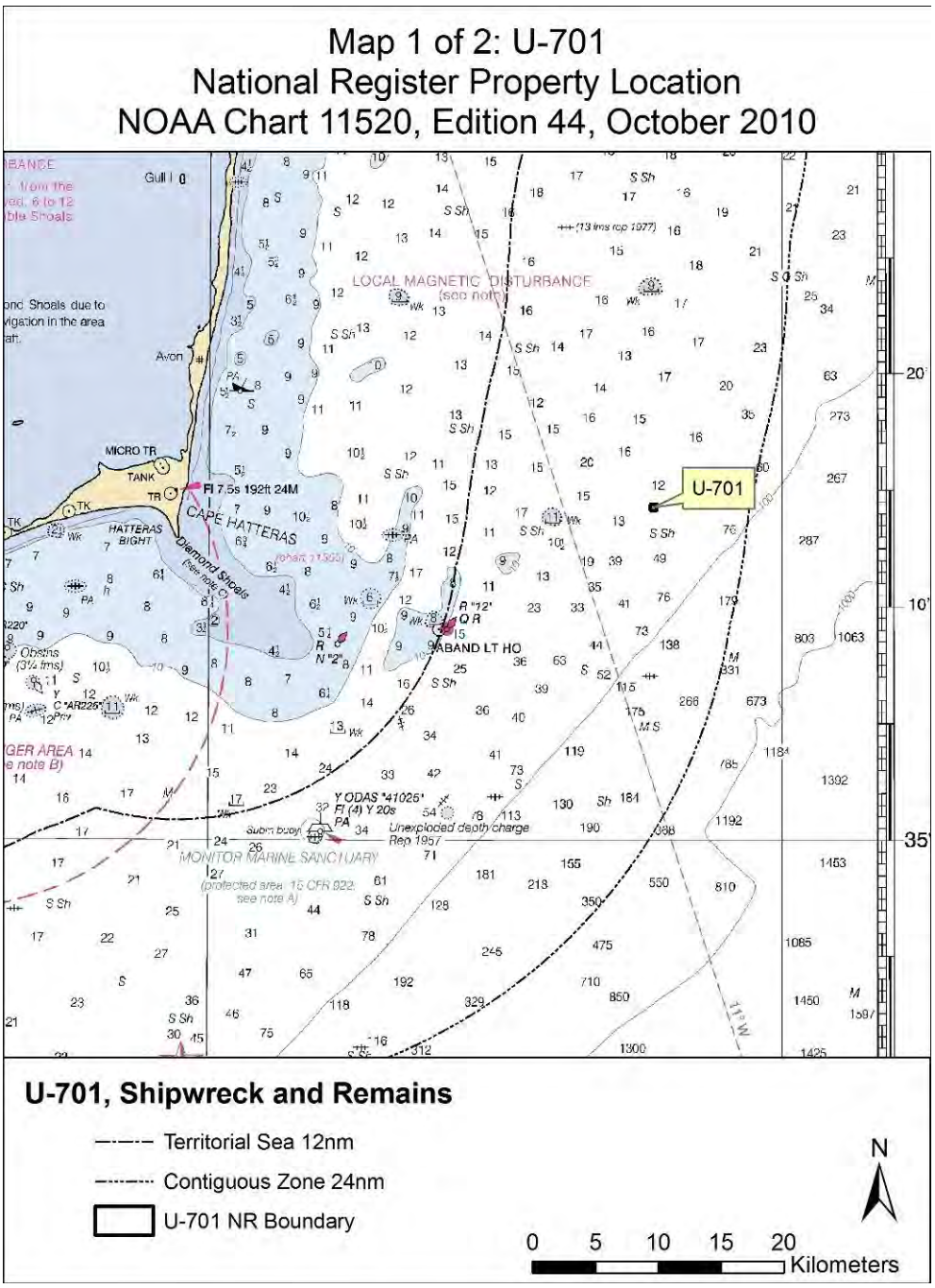
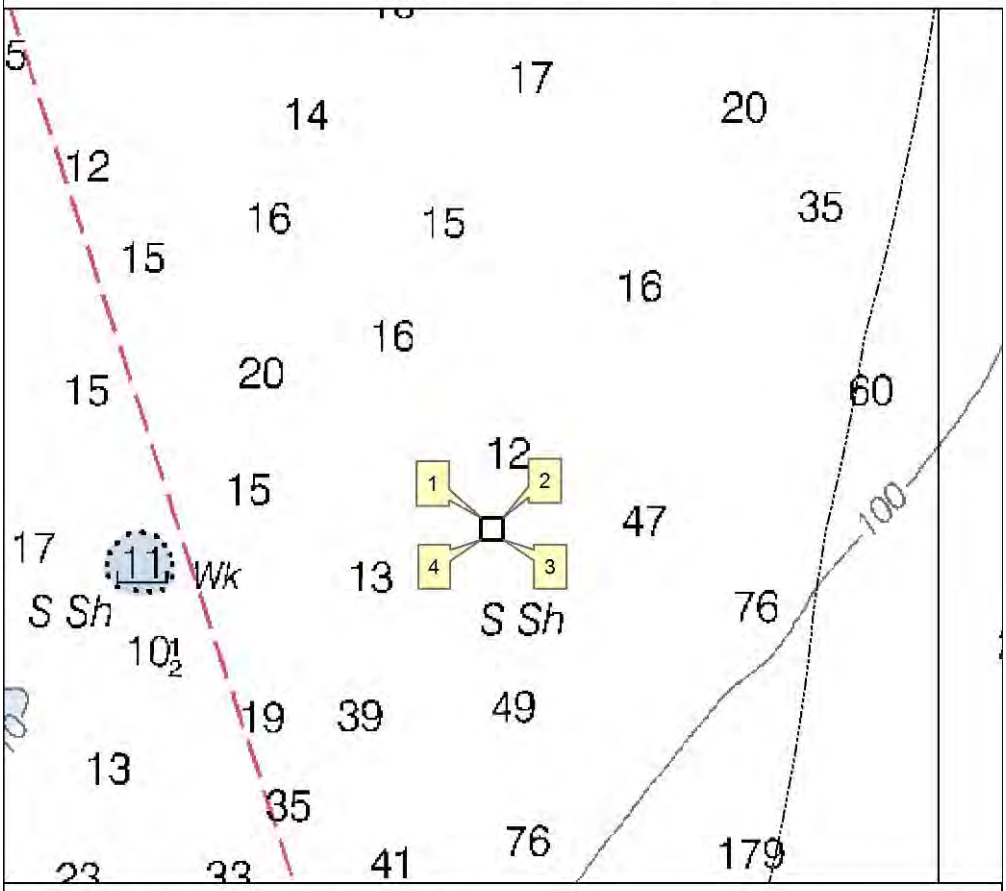

Map 1 of 2: U-701
National Register Property Location
NOAA Chart 11520, Edition 44, October 2010
U-701
LOCAL MAGNETIC DISTURBANCE
CAPE HATTERAS
Diamond Shoals
MICRO TR
Fl 7.5s 192ft 24M
ABAND LT HO
MONITOR MARINE SANCTUARY
U-701, Shipwreck and Remains
Territorial Sea 12nm
Contiguous Zone 24nm
U-701 NR Boundary
N
0 5 10 15 20
Kilometers

Map 01.

Map 2 of 2: U-701
National Register Property Location Detail
NOAA Chart 11520, Edition 44, October 2010



U-701, Shipwreck and Remains

U-701 NR Boundary

WGS 1984 Datum, UTM Zone 18 North
1. 3,899,823 N / 489,574 E; 35.241427 N / 75.114593 W
2. 3,899,823 N / 490,074 E; 35.241433 N / 75.109098 W
3. 3,899,323 N / 490,074 E; 35.236924 N / 75.109091 W
4. 3,899,323 N / 489,574 E; 35.236919 N / 75.114587 W

N

0 1 2 3 4 Kilometers

Map 02.

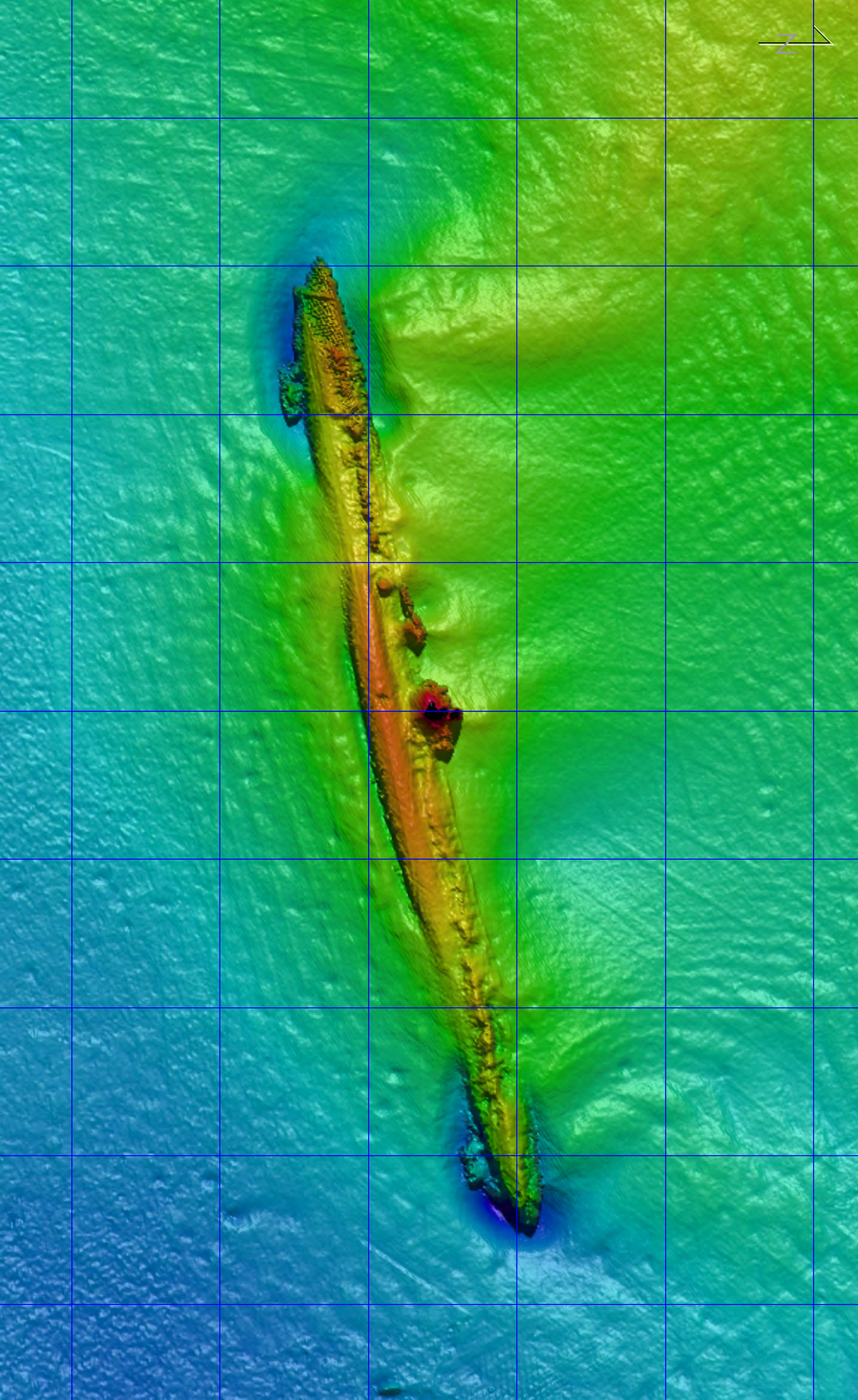
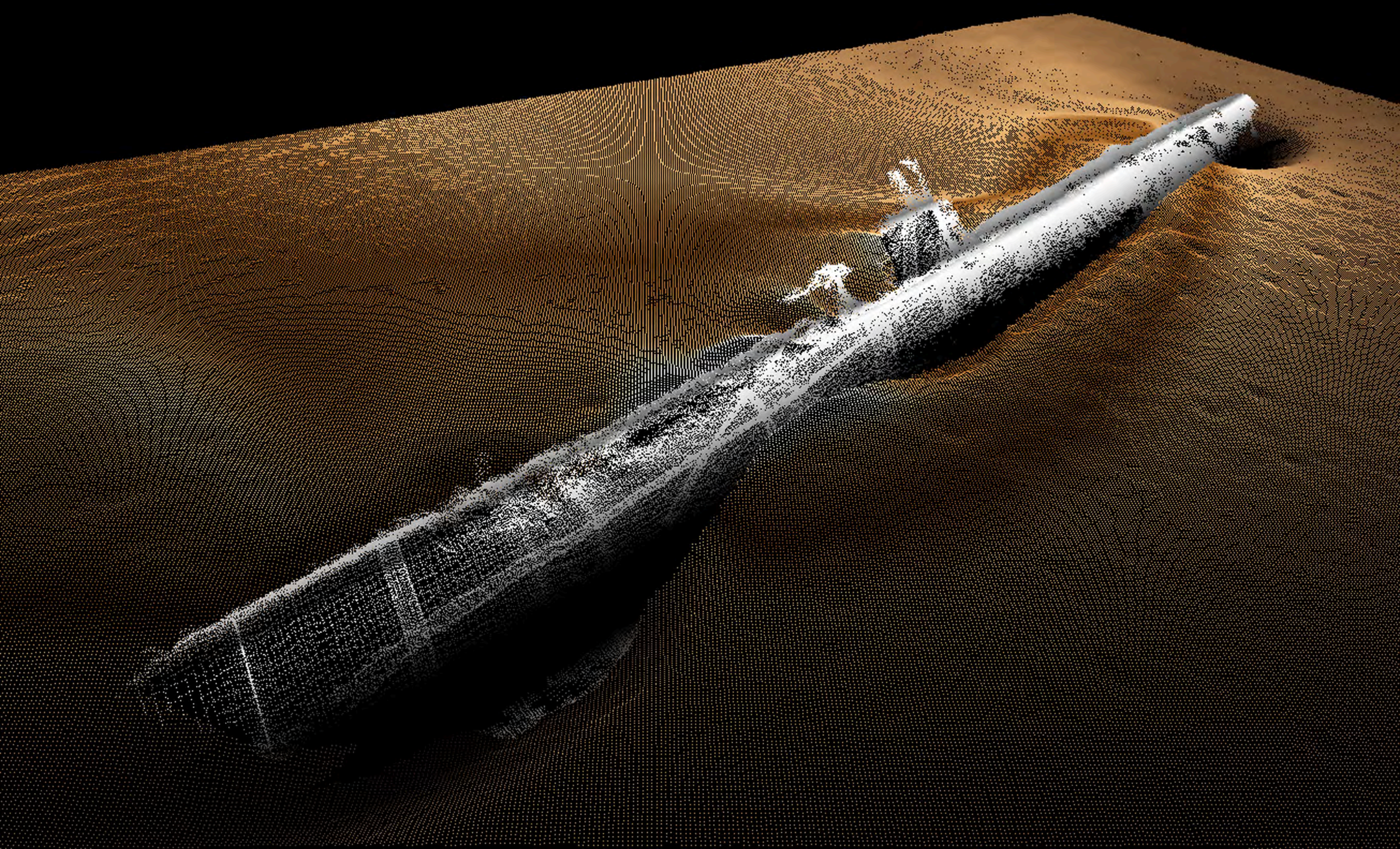
Information on the correspondence PDFs included on the CDs

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. Cover letter addressed to the NC SHPO dated 15 June 2015 that accompanied the U-701 nomination's submission to the NC SHPO for review and comment.

Correspondence 004. Letter from North Carolina SHPO, dated 22 September 2015, stating the U-701, in their opinion, meets the NRHP criteria and the nomination has been approved and signed.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