

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 PropertyHistoric name: U-85 (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. LocationStreet & number: OffshoreCity or town: Offshore-Nags Head State: Offshore-NC County: Offshore-DareNot 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 GovernmentIn 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-85 (shipwreck 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-85 (shipwreck and remains)
Name of Property

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Number of Resources within Property

(Do not include previously listed resources in the count)

Contributing	Noncontributing	
_____	_____	buildings
<u>1</u>	_____	sites
_____	_____	structures
_____	_____	objects
<u>1</u>	_____	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-85 (shipwreck and remains)
Name of Property

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County and State

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-85 (shipwreck and remains)
Name of Property

Offshore Dare, NC
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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-85 (shipwreck and remains)

Name of Property

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Areas of Significance

(Enter categories from instructions.)

MARITIME HISTORY

MILITARY

ARCHAEOLOGY - HISTORIC

Period of Significance

1942

Significant Dates

28 January 1942 (first engagement with U.S. forces)

April 1942 (arrived in U.S. waters off North Carolina)

14 April 1942 (sinking)

Significant Person

(Complete only if Criterion B is marked above.)

Cultural Affiliation

N/A

Architect/Builder

Flender Werke AG, Lübeck, Germany

U-85 (shipwreck and remains)

Name of Property

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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-85 (shipwreck 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 61.77635

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates

Datum if other than WGS84: _____

U-85 (shipwreck 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: 473,860 Northing: 3,974,633

2. Zone: 18N Easting: 474,360 Northing: 3,974,633

3. Zone: 18N Easting: 473,860 Northing: 3,974,133

4. Zone: 18N Easting : 474,360 Northing: 3,974,133

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

U-85 rests 14.3 nautical miles northeast Oregon Inlet, North Carolina at a depth of 100 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-85 (shipwreck and remains) are 474,110 East 3,974,383 North. This location marks the property's center. The 61.77635-acre site (a square 500 meters per side with boundary coordinates: northwest 3,974,633 N x 473,860 E, northeast 3,974,633 N x 474,360 E, southwest 3,974,133 N x 473,860 E, southeast 3,974,133 N x 474,360 E) 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-85 shipwreck 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.

U-85 (shipwreck and remains)
Name of Property

Offshore Dare, NC
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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.)

U-85 (shipwreck and remains)

Offshore Dare, NC

Name of Property

County and State

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

Photo Log/Index of Photos

Name of Property: U-85 (shipwreck and remains)

City or Vicinity: Offshore – Nags Head

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-85's wreck site.
Photo 001. 1 of 5.

Name of Property: U-85 (shipwreck and remains)

City or Vicinity: Offshore – Nags Head

County: Offshore - Dare

State: Offshore - NC

Photographer: Brett Seymour, National Park Service

Date Photographed: 2009

Description of Photograph(s) and number: Photomosaic of U-85 wreck site in 2009. Photo
002. 2 of 5.

Name of Property: U-85 (shipwreck and remains)

City or Vicinity: Offshore – Nags Head

County: Offshore - Dare

State: Offshore - NC

Photographer: Joe Hoyt, NOAA Monitor National Marine Sanctuary

Date Photographed: July 2008

Description of Photograph(s) and number: A diver taking survey measurements on the U-85.
Photo 003. 3 of 5.

Name of Property: U-85 (shipwreck and remains)

City or Vicinity: Offshore – Nags Head

County: Offshore - Dare

State: Offshore - NC

Photographer: Advanced Underwater Surveys

Date Photographed: 2011

Description of Photograph(s) and number: Reason 8125 scaled multibeam survey of U-85
wreck site. Photo 004. 4 of 5.

Name of Property: U-85 (shipwreck and remains)

City or Vicinity: Offshore – Nags Head

County: Offshore - Dare

State: Offshore - NC

Photographer: Advanced Underwater Surveys

Date Photographed: circa 2011

Description of Photograph(s) and number: Isometric sonar visualization of U-85 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.

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U-85 (shipwreck and remains)
Name of Property
Offshore Dare, NC
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World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section 7 - Description

SUMMARY

U-85 is the shipwreck and remains of a Type VIIB German U-boat that was sunk by the U.S. Navy destroyer USS *Roper* on 14 April 1942 during World War II. U-85 is significant to American military, maritime history, and historic archaeology as it was the first U-boat sunk by United States Navy forces off the American East Coast during the Battle of the Atlantic. U-85 had an overall length of 218.18 feet with a width of 20.34 and a depth of 15.7 feet. Launched on 10 April 1941, U-85 completed three full war patrols before departing for and reaching United States' waters on 21 March 1942. During its fourth patrol off North Carolina U-85 was sunk by gunfire from the USS *Roper* with all hands lost during the incident. Forty-six men went down with U-85 and only 29 bodies were recovered. U-85's remains rest in 100 feet of water 14.3 nautical miles northeast of Oregon Inlet, North Carolina and consist of portions of its outer hull, its intact pressure hull, saddle tanks, bow and stern torpedo tubes, 88-mm deck gun, dive planes, and propulsion components. The submarine's longitudinal orientation runs nearly east to west. Its bow is located at the east end and is easily distinguished by the presence of the submarine's bow torpedo tubes, bow dive planes and the 88-mm deck gun.

SETTING

U-85 rests partially buried on a sandy bottom in 100 feet of water 14.3 nautical miles northeast of Oregon Inlet, 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. Depending on the current, visibility also varies, but commonly ranges around 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-85 rests in one contiguous section on the seafloor. The U-boat lies on its starboard side with 80° list and retains the overall shape of the submarine as constructed (see Figure 001 and 002). U-85's archaeological remains are 205 feet long and its width varies with an average of 15 feet depending on if the saddle tanks are exposed or not. At the bow, the thin outer-hull plating has deteriorated exposing the pressure hull and four forward torpedo tubes, some of which still have torpedoes visible inside. The port diving plane is dislodged and on the seafloor and the anchor

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Name of multiple listing (if applicable)

windlass, once hidden from view under the outer casing deck, is broken off and lies on the seafloor near the bow. The capstan, also originally mostly hidden under the decking, is exposed 10 feet aft of the bow. Moving aft, brackets for the forward reserve torpedo container are present as well as the forward torpedo loading hatch. The most prominent feature just forward of the conning tower is the 88mm deck gun (Farb 1985:45; Keatts and Farr 1994: 81; Bunch 2003:52; Richards and Hoyt 2014).

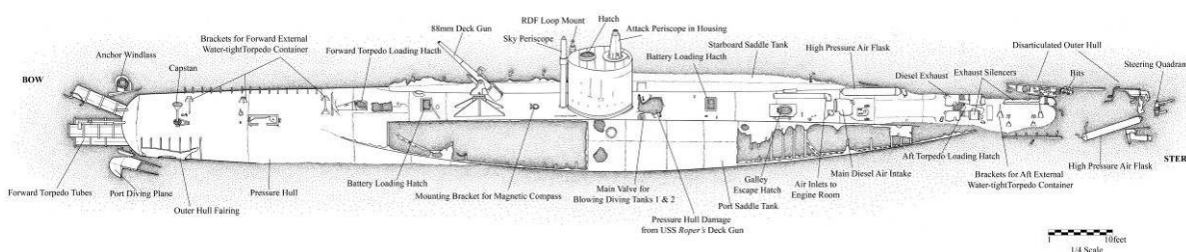


Figure 001: Plan view site map of U-85's archaeological remains. Bow is on the left and stern is on the right (courtesy of NOAA Monitor National Marine Sanctuary).



Figure 002: Profile view photomosaic of U-85's wreck site. Bow is on the right and stern is on the left (courtesy of Brett Seymour, National Park Service).

U-85's conning tower is partially intact with the bridge and casing gone revealing the attack periscope housing, hatch, radio direction finder mount and sky periscope. This was the main entrance and exit used by the crew and its connection to the above water world while submerged through the use of its periscopes. Aft of the conning tower, battle damage from the USS *Roper*'s 3-inch deck gun can be seen with portions of the pressure hull missing or damaged near the main valves for diving tanks 1 and 2. The port and starboard saddle tanks, which once served as fuel tanks, flank the coning tower and are now largely open to the ocean. Near the saddle tanks on the top of the submarine is the galley escape hatch, air inlet to the engine room, main diesel air intake and a high pressure air flask. Lastly, the diesel exhaust and exhaust silencers are positioned near the aft torpedo loading hatch and the brackets for the aft external torpedo

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container. U-85's aftermost outer hull section has deteriorated above the sediment line exposing its pressure hull. A high pressure air tank sits in the sand near the wreck as well as the steering quadrant and a set of bitts (Farb 1985:45; Keatts and Farr 1994:81; Bunch 2003:52; Richards and Hoyt 2014).

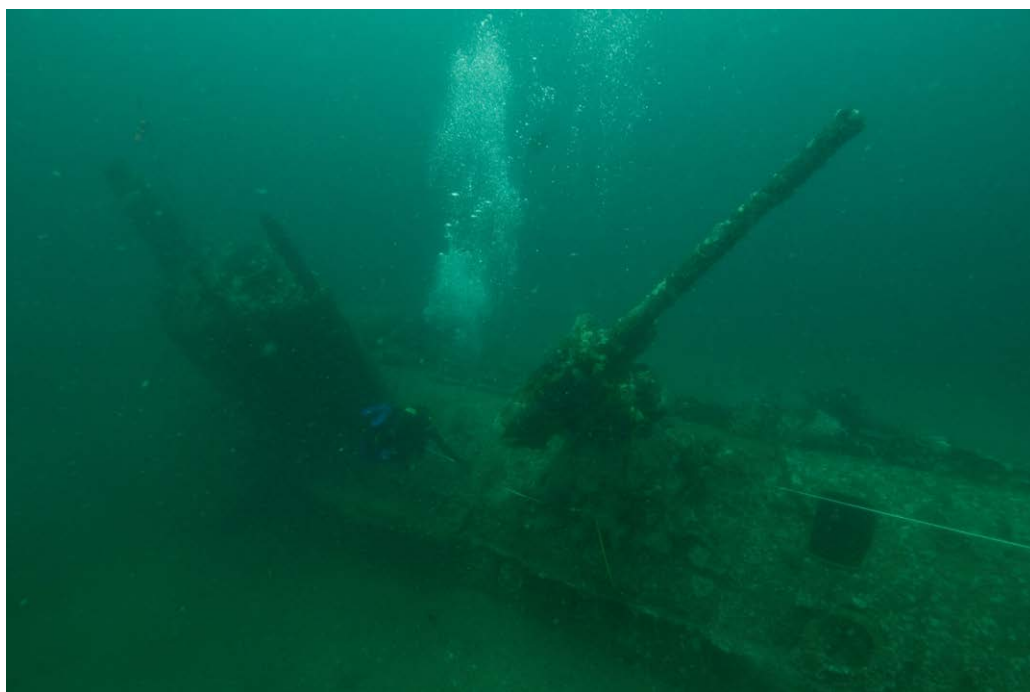


Figure 003: U-85's conning tower and 88 mm deck gun (courtesy of Joseph Hoyt, NOAA Monitor National Marine Sanctuary).

Although U-85's structural remains are largely intact, natural processes have deteriorated its outer hull and looters have significantly disturbed the site. For example, divers first visiting the site found numerous 88-mm deck gun shells. Recent investigations did not reveal a single shell. Divers who initially found U-85 and accessed its interior through the torpedo loading hatches and conning tower hatch reported that the submarine's interior was largely filled with silt (Gentile 1993:186-187). Since then, divers have removed the submarine's hatch covers and dredged out the wreck's inside (Keatts and Farr 1994:81; Bunch 2003:52). Site reports and photographic documentation confirms at least the following disturbances to the site (Richards and Hoyt 2014):

- Very little outer hull plating (fairing) remains. This is believed to be a result of natural processes, improper anchoring, and crude recovery attempts of larger artifacts by divers.

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- The forward spare torpedo and spare torpedo container are missing.
- The stern torpedo is missing.
- The fore and aft torpedo loading hatches, the fore and aft battery hatches, the galley escape hatch and the main conning tower hatch are all open. The hatch covers have also been removed.
- All easily accessible ammunition containers have been removed.
- A number of 88-mm shells, once known to be present on site, have been removed.
- The 88-mm deck gun has nearly been stripped of all components, including the harnesses, gun sights and control wheels.
- In 1942, U.S. Navy divers recovered the 20-mm antiaircraft gun.
- The radio direction finder loop, sky periscope and magnetic compass assembly have been removed.
- Hull damage aft of conning tower has been intentionally enlarged for diver access to the interior.
- Divers removed artifacts and hardware from the U-85's interior and damaged the internal compartment with dredging devices.
- The enigma encoding machine has been recovered.
- Divers have recovered some of the crew's personal effects.
- Human remains are still believed to be present on the site.

Despite the natural and anthropogenic impacts to U-85, 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-85 is a rare example of a Type VII-B German U-boat and its location off North Carolina makes it the only one of its kind off the United States available for study.

SITE INVESTIGATIONS

Since U-85 sank in shallow water, the U.S. government had high hopes for salvaging the submarine and acquiring valuable intelligence. U.S. Navy hard-hat divers were on site almost immediately after its sinking in 1942 and were hoping to recover the U-boat's four-rotor enigma machine. Germany had recently added a fourth rotor to this encryption device, which completely prevented Allied forces from breaking the German naval code. Had the Navy divers been able to locate this device, it could have drastically changed the Battle of the Atlantic. The Navy divers did not locate the enigma machine and only recovered several items from U-85. The 88-mm deck gun was partially dismantled and the 20-mm bridge gun, the IZO torpedo aimer, the gyro-compass and an unexploded depth charge were removed (USONI 1942a:9; Blair 1996:543). The U.S. Navy divers' inspection of U-85 concluded that (Richards and Hoyt 2014):

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- The submarine listed to starboard at about 80°.
- Several stanchions on the port side near the bow were torn away.
- The clearing lines were torn away.
- The forward gun was slightly elevated, swung forward and to port with its tompion in place.
- The 20 mm gun was in place but fouled with wires.
- The conning tower was undamaged with the upper conning tower hatch and lower hatch closed but not latched.
- The wooden deck was intact.
- All tank vents were open, the salvage air lines collapsed and all compartments flooded.

On 29 April 1942, the salvage tug USS *Falcon* arrived on scene and began operations to raise U-85. Navy divers closed the conning tower hatches, traced salvage air lines, manufactured fittings and pumped air into the hull. Air poured out of the battered hull making the salvage attempt unsuccessful. Navy operations ended on 4 May 1942 and the team concluded U-85 had been scuttled by its crew and left the U-boat in place (Gentile 1993:185-186).

After the navy salvage operations were complete, U-85 was left alone for nearly 20 years. In the late 1960s an avid sport-fisherman, Ray Wingate, located the wreck site and had diver Rod Wagner visit the wreck. Wagner recovered a brass flare gun with U-85 inscribed on the barrel. Wingate and Wagner had exclusive access to the site until 1975, when salvage diver Art LePage learned of its location and began contracting Wingate to run a regular dive charter service to the site. From that point on, the submarine has been regularly visited by recreational scuba divers. Despite the site's degradation from anthropogenic and natural forces, U-85 has integrity and is still an important historical and archaeological resource as well as being a key economic attraction for North Carolina's diving community (Keatts and Farr 1994:81; Bunch 2003:52).

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-85 using scuba diving equipment and standard underwater archaeology recording techniques. The project was initiated by the German Embassy's Consul General in Washington, D.C. who requested that NOAA take the lead in carrying out a baseline archaeological investigation of the three sunken U-boats located off North Carolina, U-85, U-352, and U-701, in light of reports that divers planned further illegal salvage. The project's research design identified several goals and questions to be addressed during the investigation and assessment of U-85. The project's goals included:

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- 1) Assess U-85's historical significance and archaeological integrity;
- 2) Determining if U-85 is eligible for nomination to the National Register of Historic Places;
- 3) Identify to what degree is site preservation is influenced by environmental formation processes and anthropogenic impacts;
- 4) Determine whether or not U-85 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 use in follow-up inquiry and future monitoring;
- 7) Complete a detailed video and photographic survey.

During July 2008, NOAA led the survey to investigate U-85. Project team members generated an accurate archaeological site plan, collected photographs and video footage of the wreckage and compared the levels of preservation between the three U-boat sites within recreational scuba diving depths off the coast of North Carolina. The archaeological data will enable archaeologists to monitor the site for continued degradation and looting (Richards and Hoyt 2014).

Documentation of the level of degradation to U-85 was a high priority for the 2008 NOAA survey. Data collected during the expedition was used to compare to earlier representations of the site. It was important to note what degradation was caused by natural sources, due to the site formation processes and what was caused by interference with the site by sport divers and looters. The assessment of impacts will help make educated recommendations for future mitigation efforts. Overall, the project identified the following features of U-85 that are believed to be threatened due to anthropogenic processes (Richards and Hoyt 2014):

- Very few outer hull features remain, but there are still features that could be threatened including the 88-mm deck gun, hull plates and other structural elements.
- The anchor windlass is intact, but it shows evidence of recent salvage attempts. The windlass is dislodged from its mount and is lying disarticulated on the seafloor. Natural fiber ropes are tied around it possibly indicating salvage attempts by dives.
- U-85's interior has been impacted and salvaged by divers, however there is still a great deal of threatened cultural material inside including personal effects, human remains, dials, gauges, placards and hull fittings.

During NOAA's Monitor National Marine Sanctuary 2011 Battle of the Atlantic Expedition, archaeologists revisited U-85 and surveyed the submarine using high resolution multibeam sonar. This survey provided NOAA with a detailed, geographically accurate image of the submarine and 3D point cloud model of the shipwreck that can be used for advanced three dimensional computer visualization (see Figure 004 and 005).

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U-85 (shipwreck and remains)

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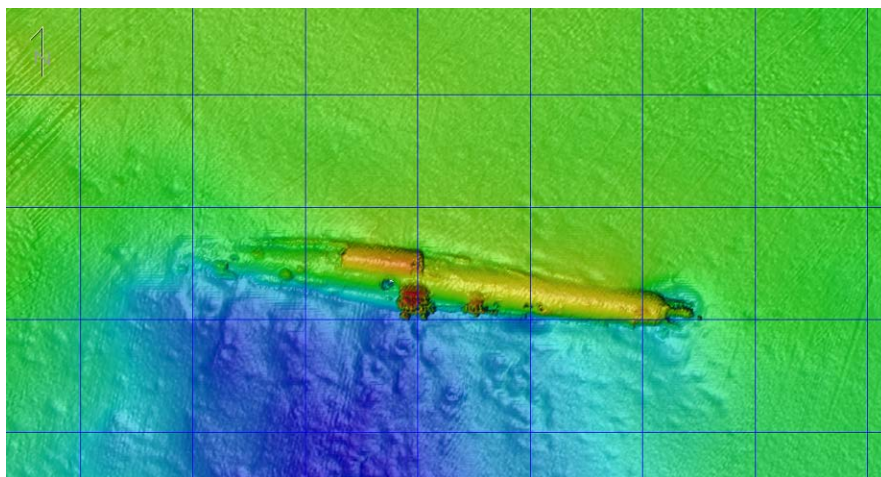


Figure 004: Multibeam survey image of U-85 (courtesy of Advanced Underwater Surveys).

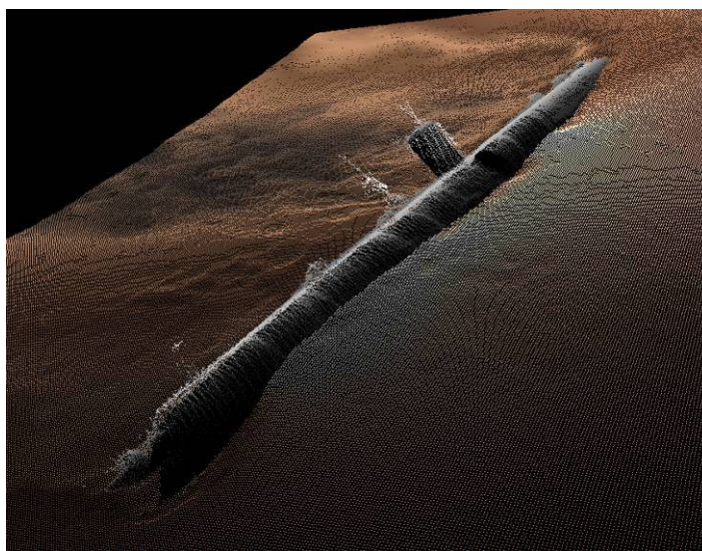


Figure 005: Isometric sonar visualization of U-85 wreck site (courtesy of Advanced Underwater Surveys).

NOAA's expeditions to U-85, in 2008 and 2011, were part of a larger multi-year project to research and document 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

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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 include 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 twelve 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-85 was the first U-boat lost and the only Type VIIB U-boat lost from the group. Archaeological work by NOAA on the U-boats off North Carolina, U-85, U-352, U-576, and U-701, has developed information about U-boat design, construction, and use as well as more complete interpreting the Battle of the Atlantic and its role in American 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	33	15	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
U-166	7/30/1942	Yes	Yes	IXC	Depth Charge From Ship	0	52	Louisiana
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.

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Section 8 – Statement of Significance

SUMMARY

The Type VIIB German submarine U-85 is significant to American maritime history, military, and historic archaeology as the first U-boat sunk during World War II by United States Naval forces off the American East Coast. U-85 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-85 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 early 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-85. On 14 April 1942 the U.S. Navy destroyer USS *Roper* fired on U-85 and sank it off North Carolina while the submarine was on its fourth war patrol. All 46 of U-85 crewmembers perished. U-85’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-85 is included as one of the Axis military losses associated with the Battle of the Atlantic in the document.

U-85 qualifies for listing under National Register of Historic Places Criteria A and is significant in the area of Maritime History based upon the vessel’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 vessels 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-85, prowled the coast in search of targets.

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U-85 qualifies for listing under National Register of Historic Places Criteria A and is significant in the area of Military based upon U-85's association with Allied and Axis military operations off the Outer Banks during World War II in 1942. The U-boat played a significant role as an enemy combatant of the United States 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. U-85's shipwreck, 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. It is also significant to American Maritime History as it was the first U-boat sunk by U.S. Navy forces on 14 April 1942 off the U.S. East Coast during World War II. While the U-85 was on its fourth war patrol when it sank, during its previous patrol it was attacked on 28 January 1942 by depth charges dropped from a U.S. Navy plane marking its first confrontation with U.S. forces. The plane was on an anti-submarine patrol off Newfoundland when U.S. Navy pilot Aviation Machinist Mate First Class Donald L. Mason, believing that he sank U-85, sent a radio message stating, "Sighted sub, sank same." This short phrase became one of the most repeated victory messages in naval history. For his actions, Mason was promoted to Aviation Chief Machinist's Mate and awarded the Distinguished Flying Cross (Higdon 1995:36). U-85 was damaged but survived the incident only to be lost several months later by gunfire from USS *Roper*.

U-85 qualifies for listing under the National Register of Historic Places Criteria D and is significant in the areas of Archaeology – Historic based upon the archaeological site's likelihood to yield information import to history. U-85 is significant in that the wreck is a rare Type VIIB German U-boat, of which only 24 were built. The rarity of vessel type alone makes the wreck of U-85 noteworthy, but it also has archaeological significance based on the fact that it is the only Type VIIB U-boat within recreational scuba diving depths off the United States' East Coast, making long term site investigations feasible. Archaeological investigations of the submarine's hull, machinery, armament and cultural artifacts may provide information that will confirm or contradict historical records. Archaeological data will also provide details about the sinking at the hands of the USS *Roper*'s crew. U-85's remains are an important physical reminder of World War II off North Carolina and future study of the site will continue to record the site's overall characteristics, its extents, anthropogenic impacts and material culture. None of U-85's 46 man crew survived its loss off North Carolina. As a result, there are no accounts of the wrecking events other than those from the USS *Roper*. The American story of the event only presents one side of the events and does not fully explain the chain of events. The submarine's archaeological documentation is the only way to uncover details about both sides of the *Roper*'s attack and subsequent sinking of U-85.

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HISTORICAL SIGNIFICANCE

The U-boat was one of the most effective weapons 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-85 was a Type VIIB, 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. Only 24 Type VIIB U-boats were built compared to 600 Type VIIC.

. . . 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 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

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six cylinder diesel engines propelled the U-boats at the surface while electric motors with battery banks were used underwater. Primary weaponry typically included 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 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 (Krzyształowicz 2011:12).

U-85 was a Type VIIB U-boat, a refinement of the Type VIIA design. The Type VIIB U-boats were based on the first Type VII but they were seven feet longer at 218 feet, to accommodate additional stores, and had an additional 40 tons of fuel storage in larger and rounder saddle tanks that went all the way down to the keel. Type VIIB's were also 120 tons greater with more powerful diesel engines. This extended their surface range at 10 knots to 8,700 nautical miles as compared to a range of 6,200 nautical miles with the Type VIIA. Submerged range remained the same at around 90 nautical miles at 4 knots. Ballast tank size increased and allowed for faster diving times too. The Type VII dove to 660 feet in 50 seconds while the new Type VIIB reached that depth in 30 seconds (Krzyształowicz 2011:18).

"One of the most important [ways the Type VIIB differed] was the adoption of a double rudder. This not only improved maneuverability, but allowed the previously external after torpedo tube to be lowered so that its inner end was now internal to the pressure hull. It now fired out from between the rudders" (Stern 1991:16). The stern torpedo could now be reloaded from inside unlike the VIIA that required the U-boat to be at the surface for reloading. The last improvement was that the Type VIIB could carry 14 torpedoes as opposed to the 11 onboard the Type VII. All of these modifications allowed the Type VIIB to remain at sea longer and have more chances to hit its merchant vessel targets. The first of the 24 Type VIIB's launched was U-45 on 25 June 1938 and the last VIIB was launched was U-102 on 21 March 1940. Three shipyards built the Type VIIB U-boats, Krupp Germaniawerft in Kiel, Vulkan in Bremen, and Fleder-Werft in Lübeck (Krzyształowicz 2011:17).

The Type VII design was improved significantly with the Type VIIB model but one faulty aspect of operations had not changed, the ventilation system. The air ducts remained inefficient on the Type VII and the only solution was to add additional rectangular ducts on the sides of the

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conning tower that funneled air down into the U-boat's interior. The next variant, Type VIIC, solved the problem by installing better internal ventilation systems. "Those rectangular (not round) pipes were bent in several places and were a visual differentiation of variants 'A' and 'B' from their successor, the VIIC, as the 'C' version was the first with the improved ventilation system" (Krzyształowicz 2011:19).

U-85 CAREER (1941 to 1942)

U-85 was the third Type VIIB U-boat built at Fleder-Werft in Lübeck, Germany. The keel was laid on 18 December 1939 and while under construction the submarine's dockyard number was "Flender 281" (United States Navy Office of the Chief of Naval Operations 1942). It was launched on 10 April 1941 and commissioning on 7 June 1941, with the Feld Post number 40 935. The Type VIIB U-boats commissioned were U-45 through U-55 and U-73 through U-76 built at Bremer Vulkan, U-83 through U-87 built by Flender-Werke and U-99 through U-102 built by Krupp Germaniawerft for a total of twenty-four. The specifications for U-85 as well as most Type VIIB U-boats are as follows. Its external hull was 218.18 feet long and 20.34 feet wide with the pressure hull measuring 160.10 feet long by 15.42 feet wide. On the surface it displaced 753 tons while submerged it displaced 857 tons. The Type VIIB U-boats either had two Germaniawerft F46 four-stroke, six-cylinder supercharged diesel engines or, as with the case of U-85, two MAN M6V40/46 four-stroke six-cylinder supercharged diesel engines. U-85's engines produced 1160 horse power and 470 to 485 rpm. As with the engine there were two options for the electric motors. Some U-boats had two BBC GGUB 720/8 electric motors with an output of 375 horsepower and 295 rpm while the others, like U-85, had AEG GU 460/8-276 electric motors with the same output. Top speed was 17 knots at the surface and 8 knots submerged (Krzyształowicz 2011:19).

The armament onboard the Type VIIB was similar to its predecessor with four bow torpedo tubes, one stern torpedo tube and an onboard capacity for fourteen torpedoes. The early Type VIIB boats, like U-85, had a single 88 mm SK C/35 deck gun and one 20 mm C/30 cannon while later versions had either two 20mm cannons or a single 37 mm cannon. It could also carry thirty-nine mines deployed through the torpedo tubes (Krzyształowicz 2011:19).

U-85 was adorned with the emblem of a wild boar on the conning tower and was attached the Third Flotilla based at Kiel and La Palice from 7 June 1941 until the time of its loss on 14 April 1942 (Högel 1999:52; Wynn 1997:64). Command of U-85 was given to Oberleutnant zur See Eberhard Greger of the naval class of 1935. Greger was born on 15 September 1915 in Lieberose, Netherlands and first served in the surface fleet from February through October 1939 as Second Watch Officer aboard the destroyer *Wolfgang Zenker*.

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In October 1939, Greger began attending the U-boat training school and was assigned to U-30 as First Watch Officer by January 1940. U-30 was a Type VIIA U-boat commanded by Fritz Julius Lemp, who was one of the most famous U-boat commanders of World War II. In October 1940, when Lemp was given command of U-110, a Type IXB U-boat, Greger joined him to oversee the completion U-110 in an activity known as Baubelehrung. This activity 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. After the Baubelehrung phase of construction had been completed, Greger resumed his position as First Watch Officer aboard U-110. Greger remained in this position until April 1941, at which point, he began the U-boat commander's course. During this time, Greger and the men that would soon make up his crew on U-85 participated in Baubelehrung during the final phases of construction. After training was completed, Greger was given command of U-85 (Busch and Röhl 1999:86).

On 26 July 1941, U-85 departed Lübeck, Germany and got underway for Norway. Upon arrival the next day the submarine tied up alongside the Blücher bridge at Horten, Oslofjord. Between 27 July and 6 August, U-85 remained in port to give her crew liberty. On 6 August, the submarine left Horten in a convoy for Trondheim via Kristiansand, Stavanger, Moldøyne and Aalesund. It arrived in Loford on 10 August and tied up alongside the *Hertha*, a submarine depot ship. For the next two and a half weeks, U-85's crew participated in firing practice in Trondheimfjord. The crew was now ready for its first patrol after the extensive involvement in its construction as well as training exercises off Norway (United States Navy Office of the Chief of Naval Operations 1942).

Greger's first war patrol with U-85 began on 28 August 1941. U-85 was assigned to Group Markgraf along with 13 other U-boats dispatched to patrol for convoys southwest of Iceland. Setting out from Trondheim, U-85 was immediately subjected to harassment by patrolling Allied aircraft. The first and second days of the patrol were not fruitful due to the steady air cover and the necessity to conduct evasive crash dives. Over the next two days, U-85 encountered one freighter that managed to escape and another which Greger determined was too small to be of consequence. On 2 September, an Allied airplane again spotted U-85 and dropped three depth charges that all missed (United States Office of Naval Intelligence (USONI) 1942a:4). Multiple days went by without U-85's crew having any luck since Dönitz and the Oberkommando der Kriegsmarine (the high command of the German Navy) were completely unaware that British code-breakers were successfully reading the German Navy's enigma encoded messages. In an effort to maintain this secret, the British decided to reroute convoys around known U-boats rather than take offensive actions against them.

As contact with convoys became increasingly rare, Greger had no way of knowing that his former Kommandant, Fritz Julius Lemp, was partially responsible for the code breaking as a

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result of allowing *U-110* with its secret materials and code books to fall into British hands (Wynn 1997:64). In an effort to increase the chances of intercepting a convoy, Group Markgraf was ordered to spread out over a larger area. Finally, on 9 September, U-85 and *U-81* came across convoy 42 (SC-42). *U-81* was able to sink one ship, but U-85 missed its target. Greger was able to radio a contact report, stating that he had come across a massive convoy of as many as 65 ships. As a result of this report, Dönitz was able to activate the wolf-pack tactics and called for all of Group Markgraf U-boats to report to Greger's position (Blair 1996:361; Wynn 1997:64). During the attack on SC-42, Greger fired five torpedoes but all failed to hit their target. Eventually, U-85 did manage to sink one ship a day later on September 10 while off Greenland, the 4,748 ton British freighter *Thistleglen* (USONI 1942a:4).

Greger's successful attack resulted in a devastating counterattack as the Canadian escorts HMCS *Skeena* and HMCS *Alberni* delivered a very accurate depth charge assault that Greger narrowly escaped. The following day, Greger surfaced U-85 intending on conducting repairs and resuming his patrol. During a test dive, however, he discovered that U-85 was not able to dive effectively. The depth charge damage was so great that he had no other alternative but to abort the mission and return to St. Nazaire. Although Greger was forced to return home, the wolf-pack actions that he helped orchestrate continued for six more days. In the end, several U-boats joined the hunt and sank 19 ships totaling 74,574 tons lost. At the time, this was the second most successful convoy attack since war's beginning. Greger in the meantime arrived in St. Nazaire on September 18, after 22 days at sea (USONI 1942a:4; Blair 1996:361).

Following repairs, U-85 transferred from St. Nazaire to Lorient on 11 October 1941. After taking on fuel and fresh provisions, Greger was ready to take U-85 on a second war patrol by 16 October. It was a frustrating and disappointing patrol for U-85 as British intelligence on U-boat locations was so accurate that convoys were easily evading U-85. Rough weather and heavy antisubmarine patrols also plagued U-85 and after spending 43 days in the North Atlantic, and being occasionally depth charged by airplanes, U-85 had encountered few merchant ships and had not attacked any. On 27 November, Greger and his unsuccessful crew returned to Lorient where they were able to enjoy an extended stay in port (USONI 1942a:4; Wynn 1997:64). They did not embark on their third war patrol until 8 January 1942.

Shortly after the bombing of Pearl Harbor, Germany 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 U-boats began making the

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voyage across the Atlantic to prey upon merchant freighters and tankers off the American Coast as early as January 1942.

As the battle along the American East Coast progressed, the waters off North Carolina, particularly off the Cape Hatteras, were recognized 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 in the Graveyard of the Atlantic 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.

U-85'S FIRST ENCOUNTER WITH U.S. FORCES (JANUARY 1942)

U-85 was among the second wave of Type VII U-boats to be deployed to American waters. Due to the large expanse of area the U-boats had to patrol off the U.S. coast, the German wolf-pack tactics were not as practical and many vessels, though still in loose groups, were operating individually. U-85 departed Lorient on 8 January 1942 and took its position between Newfoundland and Nova Scotia, where the vessel's crew had no luck until 21 January (Wynn 1997:64). On this date, Greger fired four torpedoes at what he judged to be a 10,000 ton steamer. U-85's crew claimed to have scored at least one hit, but the vessel evidently did not sink and no known Allied report confirms that this incident occurred (USONI 1942a:7). On 28 January, while operating off Newfoundland, U-85 was pummeled by depth charges by a U.S. Navy plane in what the crew described as a "baptism of fire" (USONI 1942a:7).

U-85 was rocked by the plane's depth charges but not seriously damaged. This attack is credited to U.S. Navy Aviation Machinist Mate First Class Donald L. Mason. Mason attacked a sub on the surface in the same reported position on 28 January, and believing that he had been successful, sent a radio message stating, "Sighted sub, sank same"(USONI 1942b). This short phrase is a famous quote in American naval history and is the most famous American naval quotes in reference to the U-boats of World War II. "... Donald Mason's brief four-word report was destined to join phrases like 'Don't give up the ship, and 'Damn the Torpedoes, full speed ahead' as one of those rare and memorable battle cries that inspired a nation and gave hope when it was most needed"(Stern 2014). This event marks the first encounter U-85 had with U.S. forces during World War II despite it not being in U.S. waters.

On 8 February, U-85, in conjunction with *U-654*, found and attacked the southwest bound Convoy ONS 61 while still on patrol off Newfoundland. *U-654* was able to sink one vessel in the convoy, while Greger fired at least three torpedoes with no hits. On the following day,

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Greger came across the 5,408 ton British freighter *Empire Fusilier* sailing alone and unprotected. Greger quickly sank this vessel with torpedoes, racking up the only successful attack of his patrol. Shortly after this, U-85 headed for St. Nazaire and arrived back in port on 23 February 1942 (USONI 1942a:7; Wynn 1997:64).

U-85 ARRIVES IN U.S. WATERS (APRIL 1942)

On 21 March 1942, U-85 was fully provisioned and set sail out of St. Nazaire for what would be its fourth and final patrol. On this patrol, U-85 return to North American waters, but this time it was assigned to the U.S. coastal waters. Greger and his crew made their way across the Atlantic and enjoyed a reasonably uneventful crossing (USONI 1942a:8; Blair 1996:729; Wynn 1997:64). They found their first target off New Jersey on 10 April. This was the 4,904 ton Swedish freighter *Christina Knudsen* outbound from New York for Cape Town. Greger sank the ship with two torpedoes and then proceeded directly for his station off Cape Hatteras (USONI 1942a:8; Wynn 1997:64).

U-85's DEMISE (14 APRIL 1942)

On 13 April 1942, U-85 was sitting in shallow water offshore of Bodie Island Lighthouse waiting for targets. Unbeknownst to U-85's 46 man crew, the four-stack destroyer USS *Roper* had set out from Norfolk on its way to Cape Hatteras for antisubmarine patrol earlier that day. Just after midnight the crew of USS *Roper* was approaching the area where U-85 was lurking when the detected a weak radar contact on the surface. The *Roper*'s crew did not suspect that it was an enemy submarine, but decided to investigate the contact (USONI 1942a:8; Wynn 1997:64).

Greger, who was patrolling in very shallow water, evidently decided to try and evade the U.S. Navy destroyer on the surface. His U-boat could travel at greater speeds while surfaced, which would increase his chances of getting to deeper water faster where he could crash dive. USS *Roper*, however, was quickly closing in on the submarine and its crew was beginning to suspect that they may actually be pursuing a submarine. These suspicions were confirmed moments later when one of the crewmembers spotted the track of a torpedo running past *Roper*'s port side, narrowly missing the destroyer. Greger had fired one torpedo from his stern tube in an attempt to shake his pursuant, but the shot missed and only served to verify that the U.S. Navy sailors were in pursuit of a U-boat. As the gap between the vessels closed, a surface engagement ensued. The *Roper*'s crew quickly manned their machine guns and 3-inch deck guns and trained them on the enemy submarine. When the German sailors attempted to exit U-85's conning tower to man their guns, they were greeted by heavy gunfire. Since *Roper* had the advantage of more weaponry and its crew was able to man their guns sooner, U-85's crew were prevented from

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even reaching their deck guns. As the fight continued, a well-aimed 3-inch shell breached the U-boat's pressure hull just aft of the conning tower (USONI 1942a:8; Wynn 1997:64).

Although the damage to U-85's pressure hull meant that it could no longer dive, it would likely not have been significant enough to sink the submarine immediately. It therefore seems probable that Greger made the decision to scuttle and abandon U-85. The *Roper*'s crew observed the U-boat sinking by the stern and watched as the German crew jumped into the water, begging for rescue. About 40 of U-85's crew were observed in the water but as the *Roper* began preparing to drop life rafts, its sonar team believed they acquired another contact. Although this contact was likely the sinking U-85, *Roper*'s captain, believing that U-boats were operating in packs like they did in other regions, did not want to take the chance of being sunk by another U-boat. This meant that instead of rescuing the German sailors, *Roper* passed through them in the water and dropped 11 depth charges on the sonar contact. The depth charges' concussive force killed U-85's entire crew. *Roper* proceeded to leave the area out of fear that another U-boat may be in the vicinity. All of the U-boat's 46 man crew were killed during the event. The *Roper* returned after daylight and its crew recovered the bodies of 29 sailors. Amongst the dead, six escape lungs were found. Two bodies had tubing in their mouths; indicating escape after the submarine sank. While picking up the bodies, a number of empty life jackets were also noted. Two additional bodies were permitted to sink after their clothing was searched by a Navy officer. The 29 bodies were later interred at night in relative secrecy at a cemetery in Hampton Roads, Virginia (USONI 1942a:8; Wynn 1997:64).

The United States military made no mention of their victory to the press until three weeks later when a story filled with inaccurate accounts was released. False statements included, "With the action over as suddenly as it had begun, the destroyer circled around the crew, who minutes before had been manning the guns, went to the rails to help lift the surviving members of the submarine crew out of the water"(Gentile 1993:184). Eventually on 23 July 1942, the Navy announced the burial of U-85's crew with no additional details about which U-boat was sunk or the names of the deceased. Although a tragic loss of life for the German crew, the successful attack of U-85 was a triumph for U.S. forces, as it signaled the first U-boat sunk by the United States in American Waters and proved that America's increased efforts to eradicate the German submarines from coastal waters were beginning to have an effect.

CONCLUSIONS

In total, U-85 conducted four war patrols with 137 days at sea. During those patrols its crew sank three vessels totaling 15,060 tons. Although U-85 was certainly not one of the more successful German U-boats during the war and did not sink any vessels off the North Carolina coast, nevertheless it played an important part in World War II. This is in part because U-85 was

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a German U-boat and it represents the submarines that nearly crippled Allied shipping throughout the world, but also because it was the first U-boat sunk off the East Coast and Gulf of Mexico. The Navy destroyer USS *Roper*'s successful attack on U-85 signified a turning point in the coastal battle against the U-boats. From this point on, U.S. forces were optimistic that the German submarines could be located, destroyed and eradicated from American Waters.

Although the successful removal of U-boats would take several more months, the sinking of U-85 signaled the end of the German U-boat's ability to attack merchant vessels with impunity. U-85'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.

Out of the 24 Type VIIB U-boats built, 17 were sunk, three scuttled, two went missing and two were broken up. U-85 was the only one sunk off the United States; the other 16 were lost off Ireland, France, Spain, the Azores, France, Norway and in the Mediterranean [eastern] North Atlantic, North Sea and English Channel. The Type VIIB life span lasted from 1938 through 1947 with the last one remaining, U-52, broken up after being initially scuttled off Kiel, Germany.

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.

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 it. 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 about U-boats, after the surrender of U-1105 and capture of U-505 they were stripped of many components. Unlike the previous two U-boats, U-85 was sunk during active duty during World War II. Its shipwreck and remains are significant and represent a Type VIIB U-boat in an operational state with a majority of its original features intact and available for study.

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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>).

WRECKSITE MANAGEMENT

As a sunken foreign military vessel, not otherwise abandoned, disposed of or had its title transferred, U-85 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 wreckage. Furthermore, 46 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-85 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

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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-85. 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-85's story. The German Navy and ONMS have common interests in the protection and preservation of significant underwater cultural heritage such as the U-85. 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-85 for the enjoyment of present and future generations. As the Monitor National Marine Sanctuary is 55 nautical miles north from the U-85 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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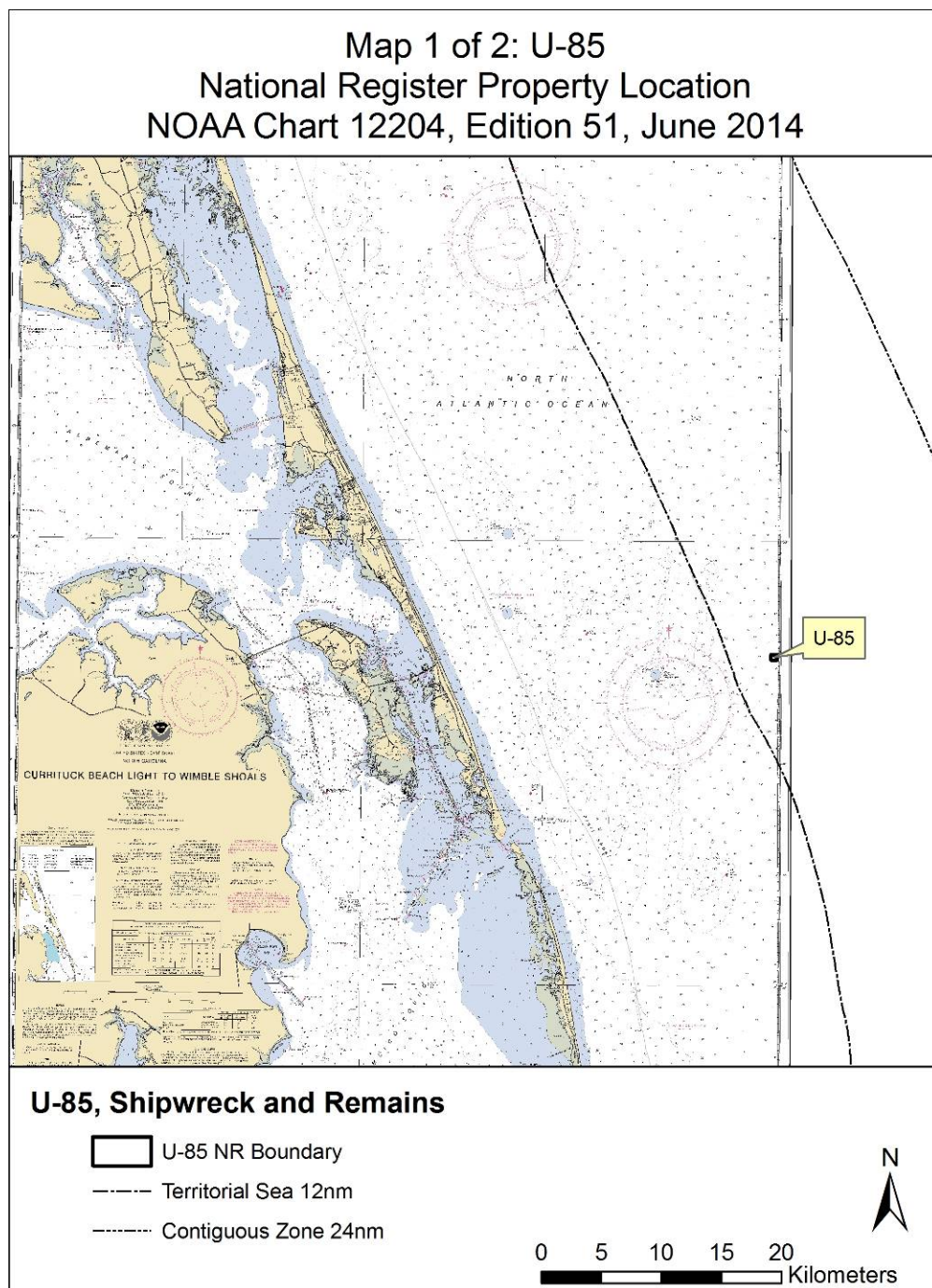
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Map 01.

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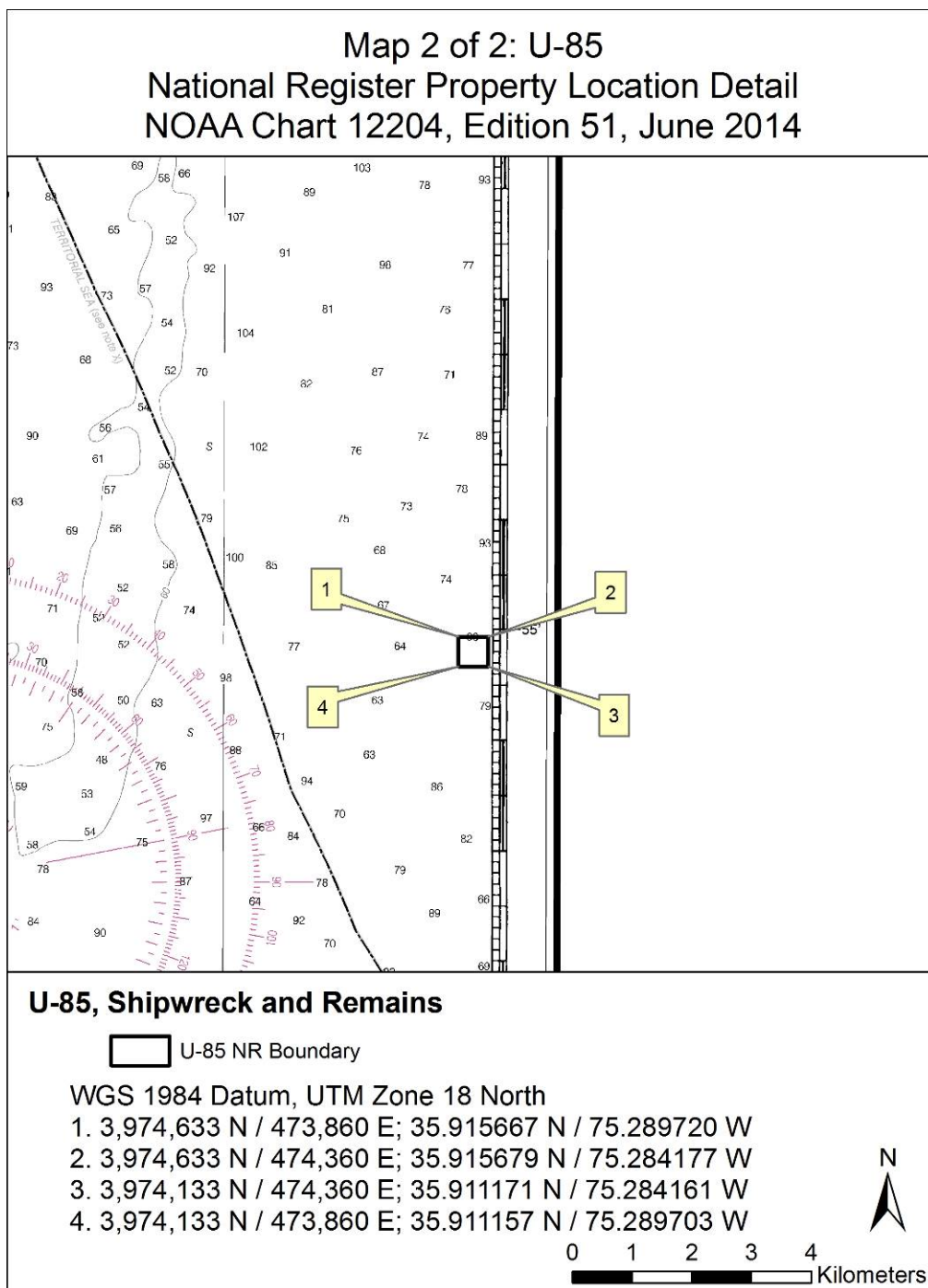
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Map 02.

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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-85 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-85, in their opinion, meets the NRHP criteria and the nomination has been approved and signed.