

**United States Department of the Interior
National Park Service**

National Register of Historic Places Registration Form

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

1. Name of Property

Historic name: E.M. CLARK, 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: Not Applicable

City or town: Not Applicable State: Offshore: NY County: Offshore: Suffolk

Not For Publication: Vicinity:

3. State/Federal Agency Certification

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

I hereby certify that this ___ 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

<p>_____ Signature of certifying official/Title:</p> <p>_____ State or Federal agency/bureau or Tribal Government</p>	<p>_____ Date</p>
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E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
County and State

In my opinion, the property ___ meets ___ does not meet the National Register criteria.	
<hr/>	
Signature of commenting official:	Date
<hr/>	
Title :	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	Date of Action
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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

E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
County and State

Object



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 1

6. Function or Use

Historic Functions

(Enter categories from instructions.)

TRANSPORTATION-WATER RELATED

Current Functions

(Enter categories from instructions.)

VACANT/NOT IN USE

E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
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

E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
County and State

Narrative Description

See Continuation Sheets

E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
County and State

8. Statement of Significance

Applicable National Register Criteria

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

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

Criteria Considerations

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

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

E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
County and State

Areas of Significance

(Enter categories from instructions.)

DEFENSE-battle site

COMMMERCE

MARITIME HISTORY

ENGINEERING

ARCHITECTURE

ARCHAEOLOGY-HISTORIC

Period of Significance

1937-1942

Significant Dates

6/14/1921 (launch) _____

3/18/1942 (sinking) _____

Significant Person

(Complete only if Criterion B is marked above.)

Cultural Affiliation

N/A _____

Architect/Builder

Federal Shipbuilding Company, New Jersey (builder) _____

E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
County and State

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
- Federal agency
- Local government
- University
- Other

Name of repository: NOAA/Office of National Marine Sanctuaries

Historic Resources Survey Number (if assigned): _____

E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
County and State

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 NAD 1983

- 1. Zone: 18 Easting: 450570 Northing: 3855980
- 2. Zone: 18 Easting: 450570 Northing: 3855480
- 3. Zone: 18 Easting: 451070 Northing: 3855980
- 4. Zone: 18 Easting : 451070 Northing: 3855480

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

The E.M. CLARK rests offshore of Cape Hatteras, North Carolina at a depth of 240 feet. The vessel's remains lie in United States' federal waters off the coast of North Carolina near NOAA's Monitor National Marine Sanctuary. UTM coordinates for the E.M. CLARK, shipwreck and remains are 450820 East 3855730 North. This location marks the center of the property. The 61.77635 acre site (a square 500 meters per side with boundary coordinates: northwest 450570 E x 3855980 N, northeast 451070 E x 3855980 N, southwest 450570 E x 3855480 N, southeast 451070 E x 3855480 N) includes the main hull structure and debris field surrounding the tanker.

Boundary Justification (Explain why the boundaries were selected.)

The National Register boundaries of the E.M. CLARK shipwreck encompass the footprint of its articulated remains within a square (500 meters per side) to capture debris and artifacts that are separated from the main structure. Surveys conducted by NOAA's Office of National Marine Sanctuaries revealed the extents of the centralized structure surrounded by scattered debris set apart from the main structure.



E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
County and State

11. Form Prepared By

name/title: Deborah Marx, Maritime Archaeologist and James Delgado, Ph.D., Director of Maritime Heritage
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: 7/15/13

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.
- **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.)

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log.

Photo Log

Name of Property: E.M. CLARK, shipwreck and remains

City or Vicinity: not applicable

County: Offshore-Dare State: NC

Photographer: United States Coast Guard

Date Photographed: 19 September 1941

Description of Photograph(s) and number: Photo Number: E.M. CLARK_0001

E.M. CLARK in 1941, port side profile view.

Image Source: Records of the United States Coast Guard, Photographs of WWII Merchant Vessel Casualties, 1944. ABSARORA to JAVA ARROW. RG 26. Box 1. National Archives. Washington, DC.

1 of _6_.

Name of Property: E.M. CLARK, shipwreck and remains

City or Vicinity: not applicable

County: Offshore-Dare State: NC

Photographer: Standard Oil Company of New Jersey

Date Photographed: unknown

E.M. CLARK, shipwreck and remains
Name of Property

Offshore: Dare County, NC
County and State

Description of Photograph(s) and number: Photo Number: E.M. CLARK_0002
E.M. CLARK, starboard side profile view.
Image Source: Standard Oil Company (New Jersey). *Ships of the Esso Fleet in World War II*.
Standard Oil Company (New Jersey), 1942.

2 of _6_.

Name of Property: E.M. CLARK, shipwreck and remains
City or Vicinity: not applicable
County: Offshore-Dare State: NC
Photographer: National Oceanic and Atmospheric Administration (NOAA)
Date Photographed: 2010
Description of Photograph(s) and number: Photo Number: E.M. CLARK_0003

Underwater photo of E.M. CLARK's bow.
3 of _6_.

Name of Property: E.M. CLARK, shipwreck and remains
City or Vicinity: not applicable
County: Offshore-Dare State: NC
Photographer: National Oceanic and Atmospheric Administration (NOAA)
Date Photographed: 2010
Description of Photograph(s) and number: Photo Number: E.M. CLARK_0004

Underwater photo of E.M. CLARK's stern
4 of _6_.

Name of Property: E.M. CLARK, shipwreck and remains
City or Vicinity: not applicable
County: Offshore-Dare State: NC
Photographer: National Oceanic and Atmospheric Administration (NOAA)
Date Photographed: 2010
Description of Photograph(s) and number: Photo Number: E.M. CLARK_0005

Underwater photo of E.M. CLARK's stern including its propellers and rudder.
5 of _6_.

Name of Property: E.M. CLARK, shipwreck and remains
City or Vicinity: not applicable
County: Offshore-Dare State: NC
Photographer: National Oceanic and Atmospheric Administration (NOAA)
Date Photographed: 2010
Description of Photograph(s) and number: Photo Number: E.M. CLARK_0006

Profile view photomosaic of the E.M. CLARK, shipwreck and remains.
6 of _6_.

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.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 7 Page 1

Section 7 – Narrative Description

SUMMARY

E.M. CLARK is the remains of a steel hulled American tanker carrying a cargo of heating oil that sank on 18 March 1942 as a result of German U-boat activities off the United States coast during World War II. The shipwreck lies in 240 feet of water 23 miles off Cape Hatteras, NC. It was the fifty-second merchant vessel sunk off the American coast during Germany’s Operation Drumbeat. E.M. CLARK’s extant remains consist of its 499 foot long steel hull which is nearly intact lying on its port side with its main deck sitting at a 90 degree angle. Most of the deck structures have collapsed onto the seafloor with holes in the vessel’s main deck allowing access to interior spaces. Smaller artifacts and cultural items have fallen out of the deckhouses and are located on the seafloor next to the main hull.

SETTING

E.M. CLARK lies partially buried on a flat sand plain on the continental shelf southeast of the Cape Hatteras, North Carolina. The ocean seafloor is comprised of sand with only a slight slope to the southeast. The shipwreck lies near the western margin of the Gulf Stream making it subject to changes in current velocity and direction. Strong currents are present on the site and create deep scours around portions of the tanker. E.M. CLARK has taken on an ecosystem role as an artificial reef, supplying a hard substrate for encrusting invertebrates as well as a home for a variety of fish and shark species. The shipwreck is now a feature with a diverse array of marine life from sharks and sponges to rays.

E.M. CLARK sits within an area that was one of the main operating zones of Germany’s U-boat flotilla’s Operation Drumbeat during World War II. It lies amongst 61 other shipwrecks and 4 U-boats off North Carolina all sunk during the Battle of the [Western] Atlantic between 1942 and 1945. These wrecks comprise, collectively, an underwater battlefield for one of the most decisive naval engagements of World War II in American waters, which was part of the larger “Battle of the Atlantic.” This clash pitted German U-boats against merchant vessels trading with the United States during the war. The ships involved in the battle included U.S.-flagged as well as foreign-flagged vessels, all engaged in transporting the industrial and mineral output of the United States in a time when the U.S. was engaged in the global conflict of 1939-1945. The ships sunk in that confrontation, like E.M. CLARK, are part of the collective record of the battle and its participants, both warship and merchant vessel.

DESCRIPTION

The following description of the E.M. CLARK’s archaeological remains is based on diver surveys conducted by NOAA’s Office of National Marine Sanctuaries and NOAA’s Monitor National Marine Sanctuary in 2010 as well as recreational diver logs and reports. Divers have visited the E.M. CLARK for many years and their observations and images are published in popular dive guides and shipwreck books as well as on the internet, often with extensive research and detailed observations (Gentile 1992). This information supplements the archaeological data and provides details not captured by the NOAA

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 7 Page 2

survey. The vessel size, observed site characteristics, and location all indicate that the site is the American tanker E.M. CLARK.

The E.M. CLARK’s overall site remains measure 499 feet by 40 feet wide with 60 feet of vertical relief above the seafloor. The site’s main feature is the steel hull which lies mostly intact lying on its port side. The hull’s exterior steel plates are in an excellent condition with small areas of deterioration caused by the strong currents that exist at the site. The wreck’s highest point is the starboard side main deck edge that sits at least 50 feet off the seafloor.

The bow’s starboard anchor is in place and visible in the hawse pipe with its port side anchor buried in the sand under the vessel. Both anchor chains run up through the hawse pipes to the deck where they are wrapped over the windlass and continue down into the chain locker. The deck plating in the bow has deteriorated exposing beams and cross bracing. Additionally there are large holes in the top of the main deck that allow access to interior compartments (Gentile 1992:71-72).

Moving aft, the bridge structure has fallen to the seafloor and only the outline of the where the bridge met the deck is visible to indicate where the superstructure once sat. The bridge and all of the associated components, including stateroom and pilothouse materials as well as portholes, are scattered on the seafloor in a large pile. Smaller cultural artifacts associated with the crew are intermixed with the metal plates and beams on the sand. The main deck planking in this area has also eroded away exposing the interior of the empty cargo tanks. There is additionally a large hole in the bottom near where the bridge was located. The steel framework of E.M. CLARK’s basic structure can be seen while penetrating areas below the main deck near that hole in the hull (Gentile 1992:71-72). All along the main deck’s edge are bollards, cleats, and deck railing stanchions along with walkway remnants. In the interior of the tanker on the main deck there are several visible open hatches as well as valves, pumps, and large pipes. These features are associated with the loading and unloading of the cargo. All of the E.M. CLARK’s three masts have fallen over and lie on the seafloor. The tanker’s single smoke stack also is on the sand near the mast (Gentile 1992:71-72).

The upper deck structure above the engine room near the stern has fallen off the main deck onto the seafloor. The skylight that sat above the engine room is gone resulting in a large opening twenty feet wide. Documentation of the engine room has not occurred yet. At E.M. CLARK’s stern, all structure above the main deck is missing, including the two helms of the auxiliary steering station. The large single rudder and two propellers and shafts are intact with the entire starboard propeller visible but only half of the port side propeller is protruding from the sand (Gentile 1992:71-72).

Overall, the site is characterized as a large steel hulled tanker once carrying a cargo of heating. The wreck’s location and cargo match historical accounts of E.M. CLARK’s loss off Cape Hatteras, NC. Additionally the shipwreck’s size and visual construction features all clearly correspond to E.M. CLARK’s historically reported characteristics.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 7/8 Page 3

SITE INVESTIGATIONS

Extensive investigations by highly trained and competent wreck divers have provided a large amount of information about the E.M. CLARK shipwreck (Gentile 1992). During 2010 NOAA’s Office of National Marine Sanctuaries and Monitor National Marine Sanctuary completed an archaeological examination of the E.M. CLARK as part of a larger ongoing project that began in 2008 to document the losses associated with World War II’s Battle of the Atlantic. The field work focused on the underwater battlefield off Cape Hatteras, North Carolina and documented several shipwrecks including E.M. CLARK. The project sought to answer research questions about the site’s characteristics and record the site’s extent remains and to augment the earlier work. The survey gathered sufficient information to determine the level of structural integrity and assess its remains to determine if the site is eligible for nomination to the National Register of Historic Places. Additional surveys of E.M. CLARK are planned to continue the site assessment and archaeological analysis.

Section 8 – Statement of Significance

SUMMARY

E.M. CLARK’s archaeological remains are significant at the national level under criteria A; the shipwreck is associated with events that have made a significant contribution to the broad patterns of our history and criteria D; the shipwreck has yielded or may be likely to yield, information important in history or prehistory. E.M. CLARK will provide information on merchant shipping during World War II, Axis military actions off the United States during World War II, merchant vessel design and use, merchant vessel cargo transport, shipboard life, and its wrecking event.

Merchant Shipping along the United States during World War II (criteria A)

E.M. CLARK operated as merchant vessel during World War II supplying the Allies with valuable petroleum products to keep the war machine running. It exemplifies the importance placed on ordinary merchant vessels, such as freighters and tankers, to supply the world with commodities in times of crisis. E.M. CLARK braved the waters off the United States to fulfill the need of Allied nations for oil. E.M. CLARK was connected to the larger merchant shipping network during World War II that moved goods around the world. E.M. CLARK, alongside other merchant vessels, connected and unified Allied countries that rallied together to pool resources to defeat the Axis powers during World War II.

Axis (U-boat) Military Actions off the United States in World War II (criteria A)

E.M. CLARK’s loss is a representative example of the U-boat campaign off the United States during World War II. Operation Drumbeat directly attacked Allied merchant shipping up and down the East Coast and in the Gulf of Mexico between 1942 and 1945. E.M. CLARK fell prey to two torpedoes from the German submarine U-124 and its remains now sit at the bottom of the sea below what was once a

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 4

fierce battlefield just off the American shore. E.M. CLARK’s physical remains are directly connected and associated with the U-boat actions during World War II.

Vessel Design, Use, and Adaptation (criteria D)

E.M. CLARK was purpose built to transport petroleum products in bulk as well as general cargo. It was designed to be a tanker and that is the service it performed prior and during World War II. Upon the outbreak of World War II archival information suggests that E.M. CLARK was not modified or outfitted with anti-submarine weaponry even though it operated in U-boat infested waters. The E.M. CLARK sailed only on international and coastal routes during World War II but did not sail with any known convoys for protection. Archaeological survey will provide evidence of if the E.M. CLARK was modified to operate during war time conditions.

Merchant Cargo Transport (criteria D)

Archaeological study of the E.M. CLARK may reveal if the tanker was carrying any other materials besides its official cargo of heating oil and how those materials might have been stored. It is possible that E.M. CLARK was transporting additional war related goods that were not declared on the reports chronicling its loss. Documentation of E.M. CLARK’s hull shape, tank configuration, deck structures, and engine compartment will provide data on the evolution of tankers and merchant cargo transport. Even though less than a hundred years old, E.M. CLARK dates to a period from which the plans and construction details for many “common” merchant marine vessels have been lost or discarded. As is the case with extant examples of historic merchant marine vessels afloat or preserved on land and documented by the Historic American Engineering Record (HAER), documentation of the form and characteristics of types only extant as sunken vessels also provides details and a record otherwise not available.

Shipboard Life (criteria D)

Documentation of E.M. CLARK’s material culture will yield information about its crew and answer questions about ethnicity, social class, and shipboard life. E.M. CLARK’s crew was forced to quickly flee the sinking vessel, leaving their personal effects behind. The information gathered from analysis of the crew’s effects will likely provide insight into life onboard an Allied merchant vessel operating in an active U-boat battlefield. E.M. CLARK’s last crew consisted of 41 men all from the United States. The crew’s age ranges from 54 years old for its steward and second assistant engineer only 16 years old for one of its ordinary seamen. Only one crewman perished during the E.M. CLARK’s wrecking.

Wrecking Event (criteria D)

Newspaper reports carried limited information about the events surrounding E.M. CLARK’s sinking off Cape Hatteras, North Carolina. Primary source documents from the U. S. Coast Guard and U. S. Navy housed at the National Archives also do not recall the incident in much detail. The limited press

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 5

coverage and historical documentation about the E.M. CLARK’s attack means its wreckage is the only source for further investigation of its sinking. The site’s archaeological remains will continue to shed light on the tactics U-boat captains used during Operation Drumbeat in terms of forensic analysis of the spacing and number of hits. Archaeological investigation of the shipwreck’s hull, machinery, cargo, and cultural artifacts may provide information that will confirm or contradict historical records as recorded from the vessel’s crew or otherwise not available due to a paucity of documentation.

HISTORICAL SIGNIFICANCE

The twin screw steam tanker E.M. CLARK was built as VICTOLITE in Kearny, New Jersey by the Federal Shipbuilding Company. Its keel was laid on 22 July 1920 and it was subsequently launched on 14 June 1921. Its sponsor was Mrs. C.O. Stillman, wife of the president of the Imperial Oil Company of Ontario, Canada (*Pacific Marine Review* August 1921:511; *American Shipping* 25 June 1921:48). It measured 500.4 feet long, 68.2 feet wide and 40 feet deep. Its gross and net tonnage was 10,825 tons and 7,443 respectively. Its official number in Lloyds was 130466 and the builder’s identification number in the yard was 49. VICTOLITE was a steel hulled tanker with three masts and three decks designed to carry petroleum in bulk with a shelter deck, straight stem, and aft positioned machinery. The three masts all had antennas with the forward and aft mast fitted with beams and hoists for lifting. VICTOLITE had three deck structures, a poop deck at the stern, a bridge deck just forward of amidships, and a forecastle deck at the bow. It had longitudinal and web framing with an *100A1 vessel rating. The rating meant the tanker was constricted under a Lloyd’s Register survey, it was suitable for seagoing service, and fit to carry dry and perishable goods. VICTOLITE ’s rating also certified that it had good and efficient anchoring and mooring equipment. Its mooring equipment consisted of a Hyde steam windlass, 300 fathoms of 2 5/8th inch diameter chain, three bower anchors (one stockless Dunn and two Trotman), a Trotman stream anchor, and a Trotman kedge anchor (Lloyd’s Surveyor Report 1921; *Lloyd’s Register of British and Foreign Shipping* 1925: VIC).

Federal Shipbuilding Company built VICTOLITE with steel from the Carnegie Steel Company with a double bottom under the engine spaces and water tight bulkheads that extended up to the upper deck. Its flat steel keel plates along its bottom ranged from 0.82 thick near the bow and stern to 1.1875 thick amidships. Its cargo capacity was 119,414 barrels or 5,015,388 gallons. Its tank system consisted of peak tanks, deep tanks, double bottom tanks, fuel oil tanks, and cargo tanks. The interior tank spaces and bilge were coated with cement or bitumastic enamel to prevent corrosion. Cofferdams were in place between tanks to isolate individual tanks to avoid contamination and reduce fire risk. Four water ballast tanks (25 foot long fore peak tank, 24 foot long aft peak tank, 67 foot long aft deep tank under the engines, and 54 foot long forward deep tank) held over 1,200 tons (Lloyd’s Surveyor Report 1921).

Federal Shipbuilding Company also constructed VICTOLITE’s two vertical reciprocating triple expansion steam engines. The cylinders on each engine measured 20.5 inches, 35 inches, and 6 inches with a 42 inch stroke and a 676 nominal horsepower. The tanker was also outfitted with a donkey boiler and engine to run its pumps and additional auxiliary equipment. Pumps were located in the bilge, engine room, cargo pump room, forward pump room, and forward hold. Three eleven foot long, sixteen foot

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains

Name of Property

Offshore Dare County, NC

County and State

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

Name of multiple listing (if applicable)

Section number 8 Page 6

diameter, steel cylindrical Scotch marine boilers, constructed by Federal Shipbuilding Company out of Carnegie and Illinois Company steel, generated steam for VICTOLITE's engines. The total heating surface was 9,576 square feet equipped with a Howden forced draft and mechanical burner. They produced steam at working pressure of 210 pounds, were oil fired, made 90 revolutions per minute, and propelled the tanker to a speed of 11 knots (Lloyd's Surveyor Report 1921; *Lloyd's Register of British and Foreign Shipping* 1925: VIC).

VICTOLITE's builder, Federal Shipbuilding Company, also known as the Federal Shipbuilding and Drydock Company, was active from 1917 through 1949. The yard was opened to help with the buildup of vessels for World War I and expanded in the interwar years. During World War II the United States government provided financial aid to the Company and they opened a second yard in Port Newark. Many ships for the United States' military as well as the Emergency Shipbuilding Program were launched from both the Kearny and Port Newark facilities to support the war effort. It was a subsidiary of United States Steel and the United States Navy eventually purchased the yards in 1948. The company launched 569 vessels including cargo ships, tankers, barges, destroyer escorts, and landing craft as well as more destroyers than any other builder besides Bath Iron Works before finally closing in 1949 (Colton 2011).

VICTOLITE was equipped with all the latest technological advancements such as electric lights, submarines signaling equipment, and wireless radio. Two generators, driven by a 9 inch by 7 inch vertical reciprocating steam engine, produced 40 kilowatts, 110 volts, and 182 amps. It provided electrical power to run the wireless, lighting, and heating system throughout the tanker (Lloyd's Surveyor Report 1921; *Lloyd's Register of British and Foreign Shipping* 1937: COA-COK). The tanker was designed to operate with a crew of 60 people and had very nice accommodations, more than the law required. There was a separate room for each officer as well as three spare rooms. Two of the spare rooms had a detached bath with one assigned to a doctor and another to a purser, two positions not required on this class of vessel. The wheel house and chart room are on the forward top flying bridge with the captain's cabin, captain's office, and wireless room sitting just below. Under the captain's quarters are the officers' rooms and spare rooms as well as the dining saloon. The rest of the crew's quarters are located aft above the engine room (*Marine Review* 1920:495).

After its launch it spent a month undergoing its final outfitting and trials to ensure it met the requirements of Lloyd's surveyors. VICTOLITE was officially delivered to its owners on 8 July 1921. It was the fourth in a series of five identical tankers all constructed by the Federal Shipbuilding Company for the Standard Oil Company of New Jersey (*Marine Review* August 1921:350). The Standard Oil Company of New Jersey had its original beginnings with Standard Oil. John D. Rockefeller formed Standard Oil in 1870 and it became the largest oil refiner in the world until it was broken up in 1911. The company's monopoly on the industry violated the Sherman Anti-Trust Act and the government forced it to be separated into smaller independent companies. As a result of the dissolution, thirty three separate entities emerged including two of the biggest, Standard Oil of New Jersey, or Esso, (which eventually became Exxon) and Standard Oil of New York or also known as Socony (which eventually became Mobil) (Vassiliou 2009:560). The Standard Oil Company of New Jersey became the largest and

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 7

most powerful of Standard Oil’s offshoots but after 1911 it did not have a strong handle on domestic production. Instead it focused early on with domestic refining and owned many plants on the Atlantic Coast whose products were marketed primarily to international markets. (Larson, Knowlton, and Popple 1971:1).

The Standard Oil Company of New Jersey financed the building of VICTOLITE, and its four sister ships, during a time of rebuilding after World War I when American shipyards were busy increasing maritime ocean tonnage. By the 1920s the American fleet was old and unable to service the domestic and world market. Tanker tonnage was at an increased demand and the Standard Oil Company of New Jersey branched out and began a massive expansion. Tankers were changing to burning oil instead of coal so they also opened bunkering stations in new locations as well as building a new larger and more modern fleet. The tankers could hold more cargo and travel farther distances at a great speed. The government provided incentives to stimulate the economy while at the same time rebuilding the merchant fleet.

Present conditions in the shipping business makes profitable the building of tankers, fruit steamers and such specialties in which the merchant marines are now short. . . . Construction will be promoted by that provision of the new shipping act which exempts a steamship company from the profits tax when money is invested in a new boat built in an American yard. Such an exemption is not allowed when a steamship company purchases a shipping board vessel. Therefore, encouragement is given the companies to have new tonnage built rather than have them take tonnage off the governments hands (*Marine Review* 1920:559).

The Standard Oil Company of New Jersey took full advantage of the government’s tax credits and contracted for the building of 23 tankers, including the VICTOLITE, during the 1920-1921 time period. “Tanker plans of the Standard Oil Co. include the construction of some of the most advanced oil carriers of the sea. The program calls for the early delivery of some of the largest tankers built. . .” (*Marine Review* 1920:495). In addition to the five tankers built by the Federal Shipbuilding, Standard Oil contracted with Moore Shipbuilding Co., Sun Shipbuilding Co., G.M. Standifer Constriction Corp., and the Oscar Daniels Shipbuilding Co. to complete their 23 oil tankers. “This building program will place the Standard Oil Company in the front ranks of the great dispensers of oil in the world. It will bring under one house flag probably the largest industrial fleet in existence. . .” At that time the company already had 52 seagoing vessels under their ownership prior to the new building plans (*Marine Review* 1920:495).

The five oil tankers, including the VICTOLITE, built by the Federal Shipbuilding Company were a departure from the tradition design which had been universally a single screw vessel. All of them were identical in dimensions including specifications like 19 oil and water tight transverse bulkheads with one continuous oil tight centerline bulkhead with an expansion trunk. “Probably the most important feature

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 8

of these tankers, however, will be the loading and unloading equipment planned for handling oil” (*Marine Review* 1920:495). Each vessel had two main horizontal duplex cargo pumps fitted with 14 inch diameter suction lines capable of discharging 3,000 barrels per hour. These were the largest suction lines and most powerful pumps fitted on a taker to date. Additionally, a smaller 6 inch diameter stripping pump was also onboard. The Federal Shipbuilding Company’s naval architects along with Standard Oil Company’s engineers designed the five tankers and, “their design places their ships among the first rank of tankers turned out by American yards, and makes the vessels excellent commentaries upon the standards which the industrial line attempts to maintain” (*Marine Review* 1920:496).

Name	Builder	Owner	Tonnage	Dimensions (LxW) in feet	Launched	Fate
<i>Walter Jennings (USS Vandalia)</i>	Federal Shipbuilding Co.	Standard Oil Co. of N.J.	10,396	500 x 68	2/9/1921	scrapped 1945
<i>Vancolite (E. J. Sadler)</i>	Federal Shipbuilding Co.	Standard Oil Co. of N.J.	10,396	500 x 68	3/24/1921	gunfire from U-boat off Caribbean and sank 6/22/1942
<i>E.T. Bedford (USS Guardoqui)</i>	Federal Shipbuilding Co.	Standard Oil Co. of N.J.	10,396	500 x 68	5/7/1921	scrapped 1947
<i>Victolite (E.M. Clark)</i>	Federal Shipbuilding Co.	Standard Oil Co. of N.J.	10,396	500 x 68	6/14/1921	torpedoed by U-boat off NC and sank 3/18/1942
<i>J.A. Moffett Jr.</i>	Federal Shipbuilding Co.	Standard Oil Co. of N.J.	10,396	500 x 68	7/14/1921	scrapped 1943

Table 1. VICTOLITE and its four tanker sister ships built by the Federal Shipbuilding Company (*Marine Review* 1922:76).

Historical documents recorded that VICTOLITE was built for the Standard Oil Company of New Jersey but at its launch its registered owner became the Imperial Oil Company of Canada, one of the Standard Oil Company of New Jersey’s main subsidiaries. The tanker was registered as being British and belonging to the port of Victoria, British Columbia. The Imperial Oil Company was established in 1880 as a union of sixteen Canadian oil refiners. In a short time it operated six refineries from coast to coast in Canada with twenty-three branch offices. In 1899 the Standard Oil bought the majority interest in the company and when Standard Oil was dissolved its shares went to Standard Oil Company of New Jersey (Vassiliou 2009:252). While the Imperial Oil Company controlled many refineries it did not have a source for crude oil within Canada and was forced to import it. During the annual company meeting in January 1922 the New York Times wrote about the company’s concerns with this situation.

. . . C.O. Stillman, President, made a statement regarding oil prospects in Canada, designed to impress the necessity of a Canadian source of supply and this his company is now trying to find in the Fort Norman district. “We are forced to import, about 98 percent , of our raw material,” he said. “High freight rates are most important, but in addition we have been heavily penalized in the last two years by

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 9

depreciation in Canadian exchange.” (*New York Times* 21 January 1922).

While the Imperial Oil Company prospected for oil fields in Canada it still needed to maintain and expand its sources from abroad. Between 1911 and 1927 the Standard Oil Company of New Jersey was actively working with its subsidiaries, like Imperial Oil, to increase its oil reserves and production. One of its first purchases the Standard Oil Company of New Jersey made was an oil producing property in Peru, which was included in a corporation owned by Imperial Oil. “The company’s [Imperial Oil] operations in South America . . . offset the absence of success in Canada. Activities in Columbia and Peru are pronounced” (*New York Times* 27 February 1923). They also acquired properties in Mexico, Columbia, and Russia. The Imperial Oil Company, in conjunction with its Latin American affiliates the International Petroleum Company and the Tropical Oil Company, along with Standard Oil Company of New Jersey, teamed up and combined forces to seek out new crude oil sources (Larson, Knowlton, and Popple 1971: 109). Since foreign flagged vessels could not participate in the America coastwise trade, the Standard Oil Company of New Jersey often chartered its affiliate’s tankers, such as VICTOLITE, to move products from foreign fields to domestic and foreign refineries while reserving its own home fleet for coastwise transits.

The Imperial Oil Company, shortly after VICTOLITE’s launch, owned fourteen vessels with the VICTOLITE being the largest of the group. “More than half of Imperial’s tankers distributed products to Canadian ports on the Great Lakes; the rest brought crude from Columba, Mexico, and the United States to the company’s refineries on the Atlantic and Pacific coasts of Canada” (Larson, Knowlton, and Popple 1971: 206).

. . . Imperial tonnage tripled in the wake of a company decision to operate its own ocean going fleet for service between its seaboard refineries and South America. . . . During the pre-World War II decades of marine operations, the Imperial or International house flags . . . might be seen in more than two dozen ports in as many and 15 countries during the course of a year, since Imperial and International tankers were used not only to carry crude from producing fields to company refineries, but also engaged in world trade (Imperial Oil Company 1980:2).

Between 1921 and 1926 the Imperial Oil Company used the VICTOLITE to move crude oil from Mexico, Peru, Nicaragua, Texas, California, and Louisiana to its refineries in Halifax, Nova Scotia. Out of the previous ports names, VICTOLITE visited Talara, Peru the most often followed by Port Lobos, Mexico, Texas City, TX, and San Pedro, CA. Peru was a vital country to Imperial Oil’s success in Canada. “. . .’the record of operations in Peru has shown consistent increase in production of petroleum . . . Preliminary figures indicate production for the year [1922] of 4,386,938 barrels as compared with 2,825,579 barrels in 1921. Drilling operations are proceeding in Peru upon an extensive scale. . .” (*New York Times* 7 February 1923).

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains

Name of Property

Offshore Dare County, NC

County and State

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

Name of multiple listing (if applicable)

Section number 8 Page 10

Prior to the development of oil production in Peru, and also Mexico, the original Standard Oil Company made huge profits from selling refined products made from American crude to Latin American countries. After the breakup of Standard Oil in 1911, the Standard Oil Company of New Jersey looked to develop oil fields close to their original markets such as Peru through businesses like the Imperial Oil Company. "Between 1900 and 1930, Latin America was the scene of the world's most intensive oil development outside the United States" (Brown 2001:1). By 1930 the Standard Oil Company of New Jersey was one of the largest producers in the Southern Hemisphere and its Latin American operations contributed 40% of the company's worldwide crude oil production. The crude oil was transferred from Latin America to refineries in Canada and the East Coast as well as to more developed Latin American countries (Brown 2001:2, 17).

During 1925 VICTOLITE mainly concentrated in servicing the petroleum trade between San Pedro (Los Angeles), California and Halifax, Nova Scotia. The *Oakland Tribune* covered news about one of the tanker's loads of 110,000 barrels and stated that it was one of three tankers with the largest consignments from Los Angeles over the week of 22 June 1925. In total, thirty-two tankers visited the port during that time and exported 2,190,766 barrels to all parts of the globe from Hawaii to Atlantic foreign ports. By this time California was a major oil producer and the intercoastal oil trade through the Panama Canal required large amounts of tanker tonnage to meet the demand. VICTOLITE made one additional trip between Los Angeles and Halifax before the Standard Oil Company of New Jersey purchased the VICTOLITE in 1926 from the Imperial Oil Company and renamed it E.M. CLARK in honor of Mr. Edgar M. Clark of New York, vice president and director of the Standard Oil Company of New Jersey (*National Petroleum News* 1926:64).

The 1926-27 Lloyd's Register listed the E.M. CLARK with dimensions of 499.2 feet long, 68.1 feet wide, and 30.5 feet deep with a gross tonnage of 9,647 and net tonnage of 6,020. Its official number was 225482 and the tanker was registered in New York under an American flag. All other details about its construction remain the same as its original registry upon its completion. Historical records do not indicate why the tanker's official number as well as dimensions and tonnage changed in 1926 as compared to 1920. E.M. CLARK's ownership was transferred briefly to the Standard Shipping Company, the transportation subsidiary of the Standard Oil Company of New Jersey in 1927, before finally being owned outright by the Standard Oil Company of New Jersey in 1935 who was it registered owner through its loss in 1942. Its homeport then became Wilmington, Delaware (*Merchant Vessels* 1927-28: 62-63; *Lloyd's Register* 1935-36: E). "To add a ship here or there for special reasons, or to transfer ships from one service or affiliate to another, was course a normal part of Jersey tanker management" (Larson, Knowlton, and Popple 1971: 208-209). The Standard Oil Company of New Jersey was constantly expanding and replacing its old fleet with newer vessels that could carry more at a lower operating cost. With the discovery of new oil fields both at home and abroad the calculation of how many ships to manage was constantly changing. Due to the regular nature of its trips, the historical record does not provide a lot of details surrounding E.M. CLARK's history. Newspapers mainly only mention that the vessel arrived or departed but do not focus on cargo details therefore it is hard to track

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 11

what is carried. The more routine and uneventful a vessel's a career the less information captured in record books.

Between 1926 and the beginning of World War II in Europe in 1939 E.M. CLARK operated under the reign of Standard Oil Company of New Jersey whose fleets dominated the market. "The tanker fleets of the Jersey organization provided physical links between affiliates on different continents and, being the lowest-cost carriers of oil, they also transported supplies between distant ports of a continent" (Larson, Knowlton, and Popple 1971: 204). By October 1929 they owned 92 tankers totaling 960,000 dead weight tons. These vessels were operated by all of its various affiliates including its main transportation arm, the Standard Shipping Company, who alone controlled 38 tankers. The fleet ranked second in the world's privately owned tonnage behind the Royal-Dutch Shell group that owned 145 tankers. Unlike many other tanker managers, the Standard Oil Company of New Jersey's fleet principally carried crude oil and other products only for its own company and were not open for private charter (Larson, Knowlton, and Popple 1971: 204-205).

The Standard Oil Company of New Jersey obtained its crude oil from only a few areas. In the United States the domestic crude came from three affiliates, the Humble Oil and Refining Company from Texas, the Carter Oil Company from interior states north of Texas, and the Standard Oil Company of Louisiana from Louisiana. Outside the United States a small amount came from Alberta Canada through the Imperial Oil Company, from South American countries such as Columbia, Peru, and Venezuela, as well as from Eastern Europe, Middle East, and Asia. The Jersey refineries were typically located near the oil consumption centers. In the United States operations were situated in Everett, MA, Bayonne, Bayway and Jersey City in NJ, Baltimore, Charleston, Baton Rouge, Pittsburgh, and Baytown, TX. Other refineries were in Canada, Peru, Columbia, Venezuela, Aruba, as well as throughout Europe and the Far East (Popple 1952:xix-xxi). Tankers provided the means to move the crude from the fields to the refineries and move away the refined products from refineries to the final destination. Tanker management was complex and expensive but crucial for the business.

Despite a slump in tanker operations during the Depression between 1930 and 1934 E.M. CLARK was very active along the Atlantic coast, in the Gulf of Mexico, throughout Latin America, and the Caribbean. It stopped in Texas, Louisiana, Aruba, Venezuela, Columbia, and Mexico to load processes petroleum products or crude oil for Providence, Boston, Brooklyn, New York City, and Bayonne, NJ. The most frequently visited areas were Texas followed by Aruba. Texas was a heavy producer of crude oil but did not have sufficient refining capability to process its resources so the crude was shipping to refineries in New York and New Jersey. The Texas petroleum industry was large and developed by the 1930s and by 1939 there were 19 refineries along its Gulf coast. Raw unprocessed crude was extracted from oil fields in the interior of the state then shipped by rail or by pipelines to the coast where it was refined and shipped out by tankers (Warner 2007:186). E.M. CLARK loaded in Texas City, Corpus Christi, Houston, and Port Arthur.

Aruba, and neighboring Curacao, arose on the oil refinery forefront as a dominant force in the twentieth century. Venezuela did not refine its own oil because of its shallow water harbors and inability for large

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 12

amount of tankers to dock near its oil fields combined with the economic instability causing foreign companies to be uneasy about investing in infrastructure. The nearby Dutch islands were stable with deep water ports making them an ideal location for refineries. Several refineries were located on Aruba, such as the Eagle refinery and the Lago Oil and Transport Company plant. Oil was moved by a system of pipelines from the refinery to large storage tanks where the tankers were loaded from. By World War II refineries on Aruba were the largest in the world (Juang and Morrissette 2008:388-389).

Europe’s declaration of war and entry into World War II in September 1939 affected the normal operations of petroleum tankers including E.M. CLARK. The military needed to stockpile supplies and oil to fuel the war machine. The oil companies devoted their resources to refining crude to produce the various products required and then transporting the final product to ports around the world. Civilian demand gradually lessened while government or military demand rose. This pattern continued well into the 1940s as war dragged on and its theaters changed.

At the outbreak of war in Europe on September 3, 1939, the *E.M. Clark* was commanded by Captain Patrick S. Mahony and her engine room was in charge of Chief Engineer Travis L. Lumpkin. Leaving Boston in ballast on August 27, she arrived at Baton Rouge September 4 and loaded 114,799 barrels of East Texas crude. For the rest of the year she continued to run coastwise (Standard Oil Company (New Jersey) 1946:144).

During World War II E.M. CLARK was part of a larger transportation network that carried petroleum products to support the Allied war effort but at home and abroad. It made 41 voyages and carried over 4 million barrels of petroleum products. “In 1940, although the *E.M. Clark* was in the Patuxent tied-up fleet from August 14 to October 22, she made 13 voyages, including trips to Aruba, Buenos Aires, Guiria, and Las Piedras” (Standard Oil Company (New Jersey) 1946:144). For most of 1941 E.M. CLARK was on the Gulf of Mexico to Atlantic states service except for a trip at the end of the year with a cargo of gasoline to Santos, Brazil. The E.M. CLARK lastly only completed two trips in 1942, from Caripito, Venezuela and Aruba to Baltimore and from Baytown and Texas City to St. Rose, LA before departing on its final voyage in March 1942. Prior to E.M. CLARK’s loss *Merchant Vessels* by E.C. Talbot-Booth listed Standard Oil Company of New Jersey owning 69 tankers and five motor ships. The largest was the tanker *Charles G. Black* of 14,300 tons built in 1921.

Year	Voyages	Barrels
1939	6	669,678
1940	13	1,450,068
1941	20	2,384,607
1942	2	308,119
TOTAL	41	4,812,472

Table 2. E.M. CLARK’s voyages during World War II (Standard Oil Company (New Jersey) 1946:145).

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 13

During World War II E.M. CLARK operated in locations susceptible to attack either from air or by sea. The Standard Oil Company of New Jersey suffered many vessel losses during World War II and by the time the United States entered the war twenty-six vessels had been reported lost or sunk (Popple 1952:195). To try and safeguard its vessels, oil companies employed many defensive mechanisms to defend their ships from enemy actions such sailing in convoys or being outfitted with weapons. Records do not indicate that E.M. CLARK sailed with convoys nor was it equipped with weapons. To combat U-boat attacks to merchant vessels along the American East Coast and in the Gulf of Mexico a coastal convoy system was established in 1942 but it was not fully up and running until that summer. There were also convoy routes to Aruba, Trinidad, and Brazil but they also did not start until the summer of 1942. As the E.M. CLARK was sunk in March 1942 it had no ability to ever use the convoy system.

On 11 March 1942 E.M. CLARK left Baton Rouge, LA for New York with 118,725 barrels of heating oil (both Esso heating oil and number 2 heating oil) under the command of Captain Hubert Lovelace Hassell, Lt. Commander USNR. The Commandant of the Eight Naval District gave the captain and crew detailed confidential routing instructions to follow on its trip along with information about radio communications protocols. Routing orders stated that after leaving port the tanker should use Southwest Pass to exit the Mississippi River and then steer the usual route through the Gulf of Mexico while keeping 20 miles from the Tortugas. If the vessel passed Sand Key during the daylight it needed to pass close enough to speak to that station. After rounding the Florida Keys E.M. CLARK should pass 15 miles outside the aids to navigation from Sand Key to Cape Canaveral before sailing as close to shore as safety permits between Hetzel Shoal lighted whistle buoy off the east coast of Florida and the Barnegat Lightship off New Jersey. Once near New York the tanker should steer directly to the Ambrose Channel light vessel and speak to the patrol boat before entering the harbor. The routing instructions went on to state that E.M. CLARK should pass Diamond, Wimble, and Winter Quarter Shoal in daylight. Additionally, except when in the Gulf of Mexico and west of the Tortugas, Captain Hassell should run darkened at the highest speed possible and zig-zag his course during bright moonlit nights and during all daylight hours. The zig-zag maneuver should be done no more than three miles right, or offshore, of the base course. The radio was only to be used in case of an emergency (National Archives US Navy Tenth Fleet RG 38 box 315).

While heading north up the Atlantic coast E.M CLARK encountered moderately rough seas as well as rain and lightning on 17 March. The visibility was three miles with southwest winds when Captain Hassell retired for the night at 12:35 am on 18 March. He left second mate Richard F. Ludden in command of the bridge with an able bodied seaman at the wheel. There was a lookout positioned at the foc'sle head, one on the main deck, and a third on the bridge. While the unarmed E.M. CLARK was running blacked out on a course of 45 true and traveling at 10 knots it was unexpectedly torpedoed by the German U-124, under the command of Johann Mohr, at 1:25am twenty-two miles southwest of Diamond Shoal Lighted buoy off North Carolina (National Archives US Coast Guard RG 26 box 6). Mohr was on a sinking streak since he arrived on the American coast on 16 March. Just prior to the E.M. CLARK, his U-boat sunk the Honduran vessel *Ceiba*, American tanker *Acme*, and Greek vessel

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 14

Kassandra Louloudis all in two days. The U-124 had also escaped from an attack by the American destroyer *Dickerson* that spotted it while picking up survivors from the *Acme* (Wagner 2010:64-66).

The first torpedo from U-124 reportedly hit the E.M. CLARK’s port side at amidships 4 feet below the waterline near the number 3 tank. The explosion was said to have blown the tank in, pushed the deck up, and brought down the foremast along with the radio antenna (National Archives US Navy Tenth Fleet RG 38 box 315). Captain Hassell recounted his reaction to the explosion in a report filed after the sinking.

Immediately after the explosion I proceeded to the bridge where I took charge from the second mate, who had already sounded the general alarm and ordered the engines ‘Full astern and then ‘Stop.’ These orders were promptly complied with. I then went to the radio operator’s room and assisted him in the attempt to rig the emergency antenna in order to send an SOS, as the regular antenna had been destroyed (Gordon 1991:142).

The radio operator, Earle J. Schlarb, also recounted his initial experiences after the E.M. CLARK was attacked.

As I opened the door I breathed in a sharp, acrid odor of burnt powder in the companion way. Rushing up to the radio room, I turned on my flashlight and found the whole place in chaos. . . . Going outside to the boat deck, I stumbled in the darkness over more wreckage. A flash of lightening showed the damage done by the torpedo; the lifeboat was a blasted heap of torn and twisted metal and splinters; a jagged hole yawned in the sagging deck. Awning and stanchion bars were smashed off and hanging loosely (Gordon 1991:142).

Just as Schlarb started for the radio room to send a distress signal a second torpedo slammed into the tanker’s port side between the number 1 cargo tank and the forward dry cargo hold at the bow at 1:29am (National Archives US Coast Guard RG 26 box 6). By the time the second torpedo hit the tanker it was almost dead in the water. No fire resulted from the two torpedo hits but E.M. CLARK was fatally wounded and sinking fast so Captain Hassell gave the orders to abandon ship. Thirteen men got into lifeboat 1 and 26 men got into lifeboat 4. Lifeboat 1 was lowered into the water with 13 men but returned back to E.M. CLARK when wiper Glen Barnhart was seen standing on the railing. Barnhart jumped into the water and was picked up and helped into the boat. Out of the 41 man crew 40 survived and were rescued. The only missing crewman was utilityman Thomas J. Larkin. It was assumed that he was killed by the first torpedo explosion while sleeping in the hospital room that was near the impact zone. Before going into lifeboat 1, Hassell gathered all the confidential ship’s papers and secret codes.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare County, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 8 Page 15

He reported that he took the ship's papers with him and threw the codes overboard in a weighted bag (Gordon 1991:146).

By this time E.M. CLARK was bow down in the water the sea was covered in oil making the men in the lifeboats sick from the fumes. It took about 10 minutes for the tanker to fill with water and plunge into the sea bow first (National Archives US Coast Guard RG 26 box 6). After the attack the U-124 surfaced and circled E.M. CLARK and then its lifeboats for an hour and a half to observe the scene. The crew remarked in the sinking report about seeing the submarine while waiting for rescue. "We saw the submarine heading for the stern of the ship as its yellow light silhouetted the torpedoed tanker in the darkness. . . . The submarine's course could be followed by its light, which kept swinging back and forth over the place where the ship had sunk. Now and then the searching beam passed over our boat, but each time this happened we were hidden by wave crests" (Gordon 1991:147). The submarine was last seen at 3:00am heading northeast.

At 7:00am on 18 March the destroyer *USS Dickerson* rescue lifeboat 1's 14 members and transferred them to a smaller boat that took them to the Coast Guard Station in Ocracoke, NC. The men were eventually transferred to Morehead City and then onto New York where they arrived on 20 March. The other lifeboat, number 4 was found by the Venezuelan tanker, *Catatumbo*, and its 26 survivors were picked up and landed in Cape Henry and eventually transferred to Norfolk, VA. The Standard Oil Company of New Jersey received an insurance payment for E.M. CLARK's hull in the amount of \$1,202,250 on 16 April 1942 but it is unknown if the cargo was also insured (Gentile 1992:71). In 1942 the company, as well as its affiliates, sustained a large number of war related losses off the American coast and around the world. In total the Standard Oil Company of New Jersey and its affiliates lost forty-eight vessels in 1942 with the Standard Oil Company of New Jersey losing seventeen. In total between the outbreak of World War II in 1939 through the war's end in 1945 the Standard Oil Company of New Jersey and its affiliates lost 93 tankers (Popple 1952:203-204, 208).

Despite this heavy toll, the tankers of the Jersey group, serving under various Allied governments, gave an excellent account of themselves throughout the war. Their services in connection with the fueling of combatant ships at sea and the transportation of petroleum products and other critical war materials were particularly effective in helping to bring the war to its successful conclusion (Popple 1952:208).

U-124's captains, Georg-Wilhelm Schultz and Johann Mohr, led very successful careers with the submarine during World War II. They sank 45 ships in addition to E.M. CLARK for a total tonnage of 219,862 gross tons. The type IXB submarine had been ordered before World War II on 15 December 1937 but was not launched until 9 March 1940 from the shipyard of AG Weser in Bremen, Germany. During the war U-124 participated in eleven war patrols, covering 490 days. The war patrols lasted anywhere from 7 days to 81 days. U-124 was on its 8th patrol when it sank its 30th victim, the E.M. CLARK. This patrol was its only cruise off the American coast but it proved to be its most successful

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number 8 Page 16

E.M. CLARK, shipwreck and remains

Name of Property

Offshore Dare County, NC

County and State

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

Name of multiple listing (if applicable)

one, sinking over 68,000 tons of shipping. Its final three patrols took to the mid-Atlantic and South America before it was ultimately sunk on 2 April 1943 off Portugal by depth charges from the British corvettes HMS *Stonecrop* and HMS *Black Swan* with the loss of its entire 53 man crew (Brechtelsbauer [1995-2013]a.).

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 9 Page 16

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 9 Page 17

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 9 Page 18

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

E.M. CLARK, shipwreck and remains
Name of Property
Offshore Dare, NC
County and State
World War II Shipwrecks along the East Coast and Gulf of Mexico
Name of multiple listing (if applicable)

Section number 9 Page 19

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