

United States Department of the Interior
National Park Service

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received MAY 1 1984

date entered

National Register of Historic Places Inventory—Nomination Form

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic Sailing Yacht Doris

and/or common Vayu

2. Location (Will be relocated for restoration)

street & number Deep River Plantation, River Road, (Present) *Connecticut River off* N/A not for publication

city, town Deep River N/A vicinity of

state Connecticut code 09 county Middlesex code 007

3. Classification

Category	Ownership	Status	Present Use	
<input type="checkbox"/> district	<input type="checkbox"/> public	<input type="checkbox"/> occupied	<input type="checkbox"/> agriculture	<input type="checkbox"/> museum
<input type="checkbox"/> building(s)	<input checked="" type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial	<input type="checkbox"/> park
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input checked="" type="checkbox"/> work in progress	<input type="checkbox"/> educational	<input type="checkbox"/> private residence
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment	<input type="checkbox"/> religious
<input checked="" type="checkbox"/> object	<input type="checkbox"/> in process	<input type="checkbox"/> yes: restricted	<input type="checkbox"/> government	<input type="checkbox"/> scientific
	<input type="checkbox"/> being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial	<input type="checkbox"/> transportation
	<u>N/A</u>	<input checked="" type="checkbox"/> no	<input type="checkbox"/> military	<input checked="" type="checkbox"/> other: Sailing Yacht

4. Owner of Property

name David S. Revenaugh (Managing owner)

street & number P.O. Box 284

city, town Essex N/A vicinity of state Connecticut

5. Location of Legal Description

courthouse, registry of deeds, etc. Bill of sale in possession of owner

street & number P.O. Box 284

city, town Essex state Connecticut

6. Representation in Existing Surveys

title State Register of Historic Places has this property been determined eligible? yes no

date 1983 federal state county local

depository for survey records Connecticut Historical Commission

city, town 59 South Prospect Street, Hartford state Connecticut

7. Description

Condition

excellent
 good
 fair

deteriorated
 ruins
 unexposed

Check one

unaltered
 altered

Check one

original site
 moved date 1934 - Rig changed
N/A

Describe the present and original (if known) physical appearance

Doris is a 77'6" wooden sailing yacht designed by Nathanael Green Herreshoff and built by the Herreshoff Manufacturing Company, of Bristol, Rhode Island, in 1905. Presently, Doris is secured in a private boat basin in Deep River, Connecticut, along the Connecticut River. (See Photographs # 2-5) Much of her original tackle and equipment, including her masts, rigging, and interior fittings, have been removed from the vessel and are presently in storage. A substantial number of the original construction plans for Doris have survived and are in the possession of the Hart Nautical Museum, at the Massachusetts Institute of Technology, Cambridge, Massachusetts. (See Exhibits # 1,2)

Original Construction

Doris measures 77'6" overall on deck, 56' on the waterline, and has a beam of 15'2" and a draft of 9'2". (See Exhibit # 1) Her hull was traditionally built with 2 7/8" x 3" steam-bent white oak frames spaced 15" apart, 1 3/4" longleaf yellow pine planking below the waterline and 1 5/8" double planked topsides, 3/4" cypress on the interior and 7/8" yellow pine on the exterior, fastened with bronze screws. Outside ballast consisted of 22 tons of cast lead. The deck was constructed of 1 5/8" white pine and a waterway of 1 7/8" x 6" white oak. The deck rail was 1 1/2" x 1 1/8" yellow pine with a rail cap of 2 1/2" x 1 3/8" teak. Doris has three main deck hatches, a poop hatch, a companionway hatch and a navigator's hatch, all constructed of teak. The open cockpit has a coaming constructed of 7/8" x 8" mahogany.

The interior bulkheads were 1 1/8" butternut with mahogany trim. As might be expected, the interior was well appointed with teak, butternut and mahogany raised panelling and custom bronze fittings. The original layout included a separate owner's stateroom and private head located aft, a large main salon with several cushioned settee berths amidships, and a forward section which included a galley, crew's quarters, captain's quarters, and ample storage of equipment and tackle in the forepeak.

Doris was originally rigged as a gaff-sloop/cutter. (See Exhibit #2; Photograph #1) In 1934, Doris' rig was modified by her then-current owner, Lawrence Lowell Reeve (See Exhibit # 3), and changed to a Marconi-ketch. The spars are sitka spruce, and the mainmast measures 90' overall (83' on deck) and the mizzenmast measures 58' overall (51' on deck). The rigging is 1/2" stainless steel. The spars and rigging were removed from the vessel and have been in dry storage in Mystic, Connecticut for the past several years, and remain in excellent condition.

Present Condition

Doris is presently afloat in the waters of the Connecticut River, but is in a state of disrepair. A program for the restoration of Doris is presently being planned by her owners. Some of the original oak frames have had "sister" frames added, while a few have been replaced with laminated frames. A substantial number of the original frames require replacement, as they are broken at the curve at the turn of the bilge, a common point for breakage in vessels of this age. The planking

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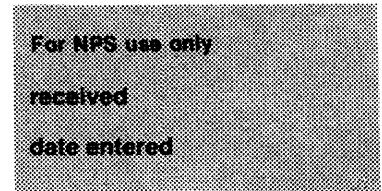
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Description (continued):

is generally sound; some planking should be replaced due to wear from chafing, and other planking must be examined when the boat is hauled for restoration. Several floor timbers are suspect, as are their bolts leading to the keel. The extent to which replacement will be necessary is unknown at this time, awaiting hauling and examination. The keelson, the structural member running the length of the hull between the floor timbers and the keel, appears to be structurally sound, but will require further examination. The forefoot (stem) and the horn timber (stern) appear to be structurally sound as well at this time. The original keel, which was cast lead, was removed from the vessel during World War II, like many other large vessels with lead keels, to serve the war effort. Doris was fitted with a substitute keel of concrete and steel, which should be removed and replaced with an appropriate lead keel.

The original white pine deck planking has become worn over time and needs replacement. Several supporting deck beams also should be replaced due to damage from water seepage, although a large number of other deck beams remain structurally sound. (See Photograph # 9) The present cockpit coaming does not appear to be original, and should be replaced, both for structural integrity as well as historical accuracy. The original planking in the cockpit sole and the seats is worn and should be replaced. A number of the deck hatches are basically sound and require only minor rebuilding and resealing of the lights (ports). (See Photograph # 6) The forwardmost hatch is not the original design and should be replaced. The companionway housing and hatch are deteriorated and need to be rebuilt. Virtually all the original Herreshoff deck hardware presently on the boat remains in serviceable condition, including cleats, hawsers, capstan, pad eyes and anchor shock. Certain other hardware items have been removed from the boat and are available in storage.

The interior bulkheads, panelling, berths and cabinetry were removed from the boat by a previous owner, David Kellams (See Exhibit # 3), in anticipation of the restoration of Doris. (See Photographs # 7,8) The main salon and aft (owner's) stateroom are believed to still be largely intact and in storage, along with a number of doors and panels. The restoration of the interior will also be aided by the large number of original construction drawings which are available from the collection at the Hart Nautical Museum.

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Significance (continued):

the Herreshoff 12 1/2-footer (15 1/2' overall) to the New York 70's (106' overall), four of which were built in 1900. Five successful America's Cup defenders were designed and built by Herreshoff, including Vigilant (1893), Defender (1895), Columbia (1899 and 1901), the first of only two yachts ever to win the Cup twice, Reliance (1903), at 143' 8" overall the largest sloop ever built, and Resolute (1920), the first Cup defender designed under the Universal Rule discussed below.

Prior to 1905, when Doris was built, large sailing yachts were designed under a measurement rule based solely upon length and sail area. This formula yielded boats which were either sleek and fast, but had unseaworthy characteristics, or scow-like vessels which were cumbersome but safe and able passage-makers. Recognizing the need for a design formula for sailing vessels which were both swift and wholesome, the New York Yacht Club solicited the expertise of the world's leading yacht designers, including Herreshoff. The result was the Universal Rule, initially called the Herreshoff Rule after its principal architect, which took into account not only length and sail area, but displacement as well, in an effort to encourage the development of stable, large-displacement yachts which were still competitive. Under the influence of the Universal Rule, boats were designed with fuller hull lines and shorter overhangs, which made them roomier and more sea-kindly, and smaller sail plans, which made them easier to handle. Doris was the first large vessel to be built under the new Universal Rule, and proved to be a sensation in the yachting world when she defeated Gloriana, an earlier Herreshoff design built in 1891 and reported to be the fastest sailing vessel of her day, in a series of match races off Marblehead, Massachusetts.^{1/}

There are two significant features of Doris' construction that characterize her uniqueness. The first of these is Doris' unusual construction with metal hanging knees replacing the usual sheer clamp through the midship portion of the hull. Mr. Herreshoff advocated this construction for large, flush-decked yachts of all-wood construction with high topsides, feeling, no doubt that the general construction provided sufficient longitudinal strength such that the sheer clamp could be omitted, and that the knees would provide better vertical support for the flush deck construction. The second unique construction detail is the use of what Mr. Herreshoff called belt or web frames. These are oak members bent over the ceiling, in the same plane as the normal frames. As far as is known, Doris is the only yacht in existence having this form of construction. In her case, the belt frames bend right up around and lie under the deck beams, and metal hanging knees are omitted at those frames where belt frames are placed. (See Photographs # 7, 8, 9)

By 1929 virtually all Herreshoff yachts of reasonable size were changed from gaff-headed to jib-headed rigs, either ketches or yawls, while some were changed to schooners. The simple reason for the change was conventional logic: the jib-headed

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Significance (continued):

rig was faster for the given amount of sail area than the gaff rig, and was more practical for cruising as well as racing, as sail changes were easier, more versatile and required fewer crew. This fact stands out as the primary reason why yachts like Doris were modified from their original rig. Indeed, Doris, while owned by Lawrence Lowell Reeve, was changed from a gaff-headed sloop/cutter prior to the 1932 Bermuda Race, as the only practical thing to do if his vessel was to be competitive. As it turned out, Doris performed quite admirably, leading the entire fleet for a good part of the race before light winds gave favor to the smaller vessels.

Doris was originally commissioned by S. Reed Anthony (1863-1914), of Boston, Massachusetts, a prominent businessman and banker. A descendant of Puritan stock, Mr. Anthony embodied the principles of self-made success. After receiving his initial education at Roxbury Latin School, Mr. Anthony took his first job at age 18, upon the death of his father, with the firm of Kidder, Peabody & Co., with whom he was associated eleven years. In 1892 he organized the investment firm of Tucker, Anthony & Co., which was involved in the development of electric and water utilities and remains an active concern today. Mr. Anthony was a member of the New York Stock Exchange and an officer and director of a number of private corporations and public utilities, including Boston Consolidated Gas Co., Commonwealth Trust Co., Northwestern Power Co., Chemical Products Co., Manchester Street Railway, Manchester Traction Light and Power Co., and Mascoma Light and Power Co. Mr. Anthony was a trustee of the Roxbury Latin School, junior warden of the Emmanuel Church in Boston, and a member of the Boston Yacht Club, Eastern Yacht Club and New York Yacht Club. Mr. Anthony was married on June 1, 1887, to Harriet P. Weeks, daughter of Anthony Gray Weeks of Boston, Massachusetts, and had three children. Mr. Anthony died in Boston on March 10, 1914.

Doris is of historical significance, if for no other reason, because she survives from an era when large wooden sailing yachts of a type no longer built today were commissioned for the private use of a single owner. When the additional facts are considered that Doris was designed and built by America's premier naval architect, Nathanael G. Herreshoff, and is believed to be the largest Herreshoff sloop remaining,^{2/} that she was the premier example of the successful design principles of the Universal Rule, and that she was the only yacht of her design ever to be constructed, it becomes clear that Doris is indeed a truly unique and classic vessel in the history of American yachting.

^{1/} See L. Francis Herreshoff, An Introduction to Yachting, pp. 147-48, 164-65, Sheridan House, White Plains, N.Y. (1963); Common Sense of Yacht Design, p. 46, Caravan-Maritime Books (1973).

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Significance (continued):

2/ John Waterhouse, Curator, Hart Nautical Museum, Massachusetts Institute of Technology, Cambridge, Massachusetts, personal communications.

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Bibliographical References (continued):

L. Francis Herreshoff. Capt. Nat Herreshoff: The Wizard of Bristol.
Sheridan House (1981)

Herreshoff Manufacturing Company. Yachts By Herreshoff. (circa 1935)

Time-Life Library of Boating. The Classic Boat. Time-Life Books, Inc.,
Alexandria, Virginia (1977)

Waterhouse, John. Hart Nautical Museum, Massachusetts Institute of Technology.
Personal communications, 1983.

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Exhibit # 3

OWNERSHIP RECORD

<u>NAME</u>	<u>DATE</u>	<u>BOAT NAME</u>	<u>LOCATION</u>
S. Reed Anthony	1905-1913	Doris	Boston, MA
Charles Hellier	1914-1920	Doris	Boston, MA
Louise N. Grace	1921-1933	Doris	Islesboro, ME
Lawrence Lowell Reeve	1934-1936	Astarte	Northeast Hbr., ME
Parkman D. Howe	1937-1939	Huntress	Boston, MA
Richard Harte	1940-1951	Vayu	Boston, MA
Frederick B. Smith	1952-1956	Vayu	Boston, MA
James Mercanti	1957-1974	Vayu	New London, CT
David Kellams	1975-1978	Vayu	Stonington, CT
Jacques Thiry	1979-1982	Vayu	New London, CT
David S. Revenaugh	1983-	Vayu	Deep River, CT

8. Significance

Period	Areas of Significance—Check and justify below			
prehistoric	archeology-prehistoric	community planning	landscape architecture	religion
1400-1499	archeology-historic	conservation	law	science
1500-1599	agriculture	economics	literature	sculpture
1600-1699	X architecture -naval	education	military	social
1700-1799	art	engineering	music	humanitarian
1800-1899	commerce	exploration settlement	philosophy	theater
X 1900-	communications	industry	politics government	transportation
		invention		X other (specify)
				yachting

Criteria: B, C

Specific dates 1905, 1934 (rig changed) Builder Architect N.G. Herreshoff; Herreshoff Manufacturing Company

Statement of Significance (in one paragraph)

Doris, a 77'6" wooden sailing yacht built by the Herreshoff Manufacturing Company, in Bristol, Rhode Island, in 1905, may rightfully be considered one of the most important American sailing yachts in existence today. An original design by Nathanael Greene Herreshoff, the "wizard of Bristol," Doris is believed to be the largest Herreshoff sloop to have survived to the present. Doris was commissioned by S. Reed Anthony, prominent businessman and banker who was a founding partner of the investment firm Tucker, Anthony & Co. Doris was the first yacht built under the Universal Rule of yacht design, establishing the success of design principles which remain in application today, and occupies a unique place in the history of American yachting.

Nathanael Greene Herreshoff (1848-1938), the designer of Doris, has been widely recognized as the most talented, versatile and productive designer of boats in America. Born in Bristol, Rhode Island, Herreshoff first began building boats at the age of eleven with his older brother, John Brown (J.B.), who had been blinded by glaucoma. After a brief period of study at the Massachusetts Institute of Technology from 1866 to 1869, Herreshoff went to work for the Corliss Engine Company of Providence, Rhode Island, one of the premier steam engine manufacturers. He continued to build boats with his brother in his spare time, and in 1873 Herreshoff left the Corliss Company to form the Herreshoff Manufacturing Company together with J.B., where his career as a naval architect lasted until 1936.

Herreshoff had the instinct of a sculptor, carving half models of boats from an initial sketch, from which he took the lines and offsets for the boats to be built by the Herreshoff Manufacturing Company. He also designed and produced virtually all the fittings and equipment used on his boats, including spars, rigging, sails, winches, cleats, and deck hardware. Herreshoff was responsible for such innovations as cross-cut sails, the track and car system for attaching sails to the mast, the hollow "Herreshoff cleat," and the folding propeller for sailboats. The Herreshoff reputation was for superior quality in both design and construction, based upon attention to detail and the use of only top quality materials.

The craft launched from the Herreshoff yard in Bristol ranged from 12-foot day sailers to 145-foot steam motor yachts, even including the first U.S. Navy torpedo boat. But the greatest fame came from Herreshoff's racing sailboats. The first racing catamaran, Amarylis, was designed by Herreshoff in 1875, while he was still at the Corliss Company. In 1891, Herreshoff introduced the fin-keel, spade-rudder concept which is the predominant design in today's racing sailboats. Herreshoff also developed a number of one-design classes of racing boats, ranging in size from

9. Major Bibliographical References

L. Francis Herreshoff. An Introduction to Yachting. Sheridan House (1963)
Common Sense of Yacht Design. Caravan-Maritime Books (1973)
(continued)

10. Geographical Data

Acreage of nominated property N/A
Quadrangle name Deep River, CT Quadrangle scale 1:24,000

UTM References

A	<u>18</u>	<u>718000</u>	<u>4584390</u>	B			
	Zone	Easting	Northing		Zone	Easting	Northing
C				D			
E				F			
G				H			

Verbal boundary description and justification

The property nominated is a sailing yacht secured in a private boat basin on the Connecticut River in Deep River, Connecticut, approximately 1/3 mile north of the Essex town line.

List all states and counties for properties overlapping state or county boundaries

state	<u>N/A</u>	code	<u>N/A</u>	county	<u>N/A</u>	code	<u>N/A</u>
state	<u>N/A</u>	code	<u>N/A</u>	county	<u>N/A</u>	code	<u>N/A</u>

11. Form Prepared By

name/title William A. Scofield, Jr., Attorney; David S. Revenaugh, edited by: John Herzan,
National Register Coordinator
organization N/A date August 13, 1983
street & number 27 Woodleigh Road telephone (617) 926-9261
city or town Watertown state Massachusetts

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

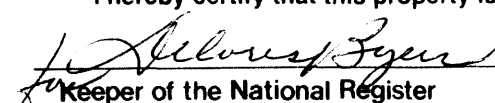
national state local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature 
title Director, Connecticut Historical Commission date 4/25/84

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I hereby certify that this property is included in the National Register


Keeper of the National Register Entered in the National Register date 5-21-84

Attest: _____ date _____
Chief of Registration