

United States Department of the Interior
National Park Service

National Register of Historic Places
Inventory—Nomination Form

For NPS use only
received **SEP 30 1982**
date entered

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

1. Name

historic ~~N/S~~ Savannah (Nuclear Ship)

and/or common

2. Location

street & number Moored on east side of Charleston Harbor NA not for publication

city, town Mount Pleasant X vicinity of ~~Congressional district~~

state South Carolina code 045 county Charleston code 019

3. Classification

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

4. Owner of Property

name Patriots Point Development Authority, State of South Carolina

street & number Post Office Box 986

city, town Mount Pleasant NA vicinity of state South Carolina 29464

5. Location of Legal Description

courthouse, registry of deeds, etc. Charleston County Courthouse

street & number 2 Courthouse Square

city, town Charleston state South Carolina 29401

6. Representation in Existing Surveys

title Inventory of Historic Places in South Carolina has this property been determined eligible? yes no

date 1981 federal state county local

depository for survey records South Carolina Department of Archives and History

city, town Columbia state South Carolina 29211

7. Description

Condition		Check one	Check one
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input checked="" type="checkbox"/> unaltered	<input checked="" type="checkbox"/> original site
<input checked="" type="checkbox"/> good	<input type="checkbox"/> ruins	<input type="checkbox"/> altered	<input checked="" type="checkbox"/> moved date _____
<input type="checkbox"/> fair	<input type="checkbox"/> unexposed		

Describe the present and original (if known) physical appearance

The Nuclear Ship Savannah, the world's first nuclear-powered merchant ship, was designed by George W. Sharp, Inc., of New York and built in 1958-1961 by the New York Shipbuilding Corporation of Camden, New Jersey. The Savannah carried passengers and cargo to many ports during its experimental commercial career from 1965 to 1970. The Savannah is presently anchored at Patriots Point Naval and Maritime Museum in Charleston Harbor, South Carolina. With the exception of the removal of the nuclear fuel, the ship is unaltered.

Additional Information: The Savannah is 595 feet, 6 inches long with a beam of 78 feet, a full-load draught of 29 feet, 6 inches, and a full-load displacement of 21,840 tons. The 74-megawatt pressurized-water nuclear reactor, designed and fabricated by Babcock and Wilcox Company of New York, is located amidships in the hull. The reactor was fueled by 682,240 enriched uranium-235 pellets in thirty-two fuel elements. Twenty-one boron-steel control rods regulated the nuclear chain reaction; a SCRAM* button could shut down the reaction in one second in case of an emergency. The reactor is cased in a cylindrical steel containment vessel and shielded by 2,150 tons of shielding in eight layers: steel, water, steel, redwood, polyethylene, lead, ordinary concrete, and heavy concrete. The reactor operated on the principle that water under tremendous pressure (1,750 pounds per square inch) may be heated to great temperatures (524 degrees Fahrenheit) without boiling. The heat can then be transferred to water under low pressure. This produced steam to drive the DeLaval steam turbine engine, which provided for 22,000 maximum shaft horsepower for the single five-bladed propeller. This power plant was designed for a maximum speed of 20.25 knots.

The Savannah has seven cargo holds with a capacity of 9,400 tons. Hull stability was maintained by automatic submerged Sperry Gyrofans. The Savannah carried a crew of sixty-seven and had accommodations for sixty passengers as well. The ship has air-conditioning, elevators, modern functional decorations, and a swimming pool for the comfort of the passengers.

A streamlined superstructure is located just aft of center. The superstructure contains the pilothouse and bridge, the officers' and passengers' lounges, the main lobby, and the emergency generator room. Three radio-radar masts and numerous cargo booms and winches are also on the main deck. Four lifeboats on davits are located on the superstructure.

*"SCRAM button shuts down the reactor in less than a second by ramming in the control rods. Operators push this switch only in an emergency. Scientists trace their use of the word to the early days of the atomic industry, when they had orders to clear out--scram--in case of a nuclear mishap."
Alan Villiers, "Aboard the N.S. Savannah," National Geographic (August 1962)
p. 289.

8. Significance

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

Specific dates 1958-1961 **Builder/Architect** George W. Sharp, Inc./New York Ship Building Corporation

Statement of Significance (in one paragraph)

The Nuclear Ship Savannah, designed by George W. Sharp, Inc. and built in 1958-1961 by the New York Shipbuilding Corporation, was the world's first nuclear-powered merchant vessel. The ship was built to demonstrate the applicability of nuclear power to commercial shipping and carried cargo and passengers worldwide during its commercial career from 1965 to 1970. Since 1981 the Savannah has been moored in the Charleston Harbor as part of the Patriots Point Naval and Maritime Museum. Although the ship achieved significance within the past fifty years, its exceptional importance in the field of transportation science and technology warrants an exception to the fifty-year criterion.

Additional Information: A nuclear-powered merchant vessel was proposed by President Dwight D. Eisenhower in 1955, as evidence of the nation's desire to use nuclear power peacefully.¹ The design for the Savannah's pressurized-water reactor was begun in 1956. The project was under the joint administration of the United States Maritime Administration and the Atomic Energy Commission.² The keel of the Savannah was laid on May 22, 1958, at the shipyards of the New York Shipbuilding Corporation, Camden, New Jersey.³ The ship was launched on July 21, 1959, the reactor core was installed on November 11, 1961, and criticality was attained on December 21.⁴ After successful sea trials off Yorktown, Virginia, during the spring of 1962, the Savannah made her first demonstration commercial voyage to Savannah, Georgia, that August.⁵ The ship continued demonstration cruises to United States and foreign ports under the operation of States Marine Lines, 1962-1963, and American Export Isbrandtsen Line, 1964-1965.⁶ Savannah's experimental commercial career lasted from 1965 to 1970 under bareboat charter to First Atomic Ship Transport, Inc.⁷ The ship visited ninety-six ports, including Charleston, South Carolina, and cruised 454,675 miles during her short career. The Savannah was taken out of service in November 1970 and "mothballed" until loaned by the Maritime Administration in 1981 to the State of South Carolina for public display at Patriots Point Naval and Maritime Museum in Charleston Harbor.⁸

The N/S Savannah was built as an experiment to reveal if and how well nuclear energy could serve the merchant marine. Being a technological experiment, it was not expected to be an economic success, and it was not. Technologically, however, it was a triumph. Political and economic considerations will determine whether or not and when the technological lessons of the Savannah will be applied to future naval architecture and propulsion systems. In any case, Savannah remains unique and a symbol of the highest level of technology ever attained by the American merchant marine.

The Savannah achieved significance during the last fifty years as a revolutionary, one-of-a-kind technological experiment which helped to establish the nation's prominence in the development and use of nuclear energy for commercial transportation. This exceptional degree of significance warrants an exception to the fifty-year criterion.

9. Major Bibliographical References

see continuation sheet

10. Geographical Data

Acreeage of nominated property approximately 2 1/2

Quadrangle name Charleston, S.C.

Quadrangle scale 1:24000

UMT References

A

1	7	6	0	2	2	0	0	3	6	2	8	1	6	0
Zone		Easting				Northing								

B

Zone		Easting				Northing								

C

Zone		Easting				Northing								

D

Zone		Easting				Northing								

E

Zone		Easting				Northing								

F

Zone		Easting				Northing								

G

Zone		Easting				Northing								

H

Zone		Easting				Northing								

Verbal boundary description and justification

The nominated property is shown bounded by the red line on the accompanying National Oceanic and Atmospheric Administration map # 11524, entitled "Charleston Harbor." This boundary includes only the historic ship, excluding adjacent piers and anchorages.

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

state NA code NA county NA code NA

state NA code NA county NA code NA

11. Form Prepared By

name/title Dr. Clark G. Reynolds, Curator and Historian John E. Wells, S.C. Department of Archives and History

organization Patriots Point Naval & Maritime Museum date July 16, 1982

street & number Post Office Box 986 telephone (803) 884-2727

city or town Mount Pleasant state South Carolina 29464

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 Charles E. Lee Sept 7, 1982
title State Historic Preservation Officer date

For NPS use only

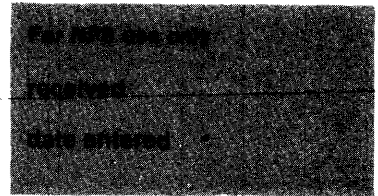
I hereby certify that this property is included in the National Register

for Anna Lisa Brugel date 11/14/82
Keeper of the National Register

Attest: Patricia Anders date 11/10/82
Chief of Registration

United States Department of the Interior
National Park Service

**National Register of Historic Places
Inventory—Nomination Form**



Continuation sheet 1

Item number 9

Page 1

BIBLIOGRAPHY

Braynard, Frank O. "The New Savannah." U.S. Naval Institute Proceedings 86
(February 1960): 71-77.

Maritime Administration. U.S. Department of Commerce. "N.S. Savannah: Program
Status," August 1970.

"N.S. Savannah: General Plans and Drawings," Radiation Safety Services, Irmo,
S.C.

Villiers, Alan. "Aboard the N.S. Savannah." National Geographic 122 (August
1962): 280-298.

N/S Savannah
Footnotes

¹ Frank O. Braynard, "The New Savannah," U.S. Naval Institute Proceedings 86 (February 1960): 72.

² Ibid.; Maritime Administration, U.S. Department of Commerce, "N.S. Savannah: Program Status," August 1970.

³ Braynard, p. 74; "Program Status."

⁴ Ibid.

⁵ Alan Villiers, "Aboard the N.S. Savannah," National Geographic 122 (August 1962): 280-281; "Program Status."

⁶ "Program Status"; "N.S. Savannah: General Plans and Drawings," Radiation Safety Services, Irmo, S.C., n.d.

⁷ "Program Status."

⁸ Ibid.