

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

DATA SHEET

FOR NPS USE ONLY

DEC 30 1977

RECEIVED

DATE ENTERED

MAR 29 1978

**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

M/S Sierra (motor ship)

AND/OR COMMON

2 LOCATION

STREET & NUMBER

1401 Sargent Blvd., (Chehalis River)

NOT FOR PUBLICATION

CITY, TOWN

Aberdeen

VICINITY OF

CONGRESSIONAL DISTRICT

3rd - Hon. Donald L. Bonker

STATE

Washington

CODE

53

COUNTY

Grays Harbor

CODE

027

3 CLASSIFICATION

CATEGORY

- DISTRICT
- BUILDING(S)
- STRUCTURE
- SITE
- OBJECT

OWNERSHIP

- PUBLIC
- PRIVATE
- BOTH
- PUBLIC ACQUISITION**
- IN PROCESS
- BEING CONSIDERED

STATUS

- OCCUPIED
- UNOCCUPIED
- WORK IN PROGRESS
- ACCESSIBLE**
- YES: RESTRICTED
- YES: UNRESTRICTED
- NO

PRESENT USE

- AGRICULTURE
- MUSEUM
- COMMERCIAL
- PARK
- EDUCATIONAL
- PRIVATE RESIDENCE
- ENTERTAINMENT
- RELIGIOUS
- GOVERNMENT
- SCIENTIFIC
- INDUSTRIAL
- TRANSPORTATION
- OTHER

4 OWNER OF PROPERTY

NAME

M/S Sierra, Inc.,

STREET & NUMBER

1608 Aurora Avenue North

CITY, TOWN

Seattle

VICINITY OF

STATE

Washington

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC.

Vessel Documentation, U. S. Coast Guard (Registration #214391)

STREET & NUMBER

Pier 36

CITY, TOWN

Seattle

STATE

Washington

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

None

DATE

FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR
SURVEY RECORDS

CITY, TOWN

STATE

7 DESCRIPTION

CONDITION

EXCELLENT
 GOOD
 FAIR

DETERIORATED
 RUINS
 UNEXPOSED

CHECK ONE

UNALTERED
 ALTERED

CHECK ONE

ORIGINAL SITE
 MOVED DATE _____

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The motor ship Sierra is a large, wooden vessel designed for the Pacific Coast lumber carrying trade. It is 210.6 feet long and 42.5 feet in the beam. In outward appearance, it resembles a double-ended steam schooner (double-ended in that a cargo hatch was provided at each end). Cargo capacity was 1,250,000 feet of lumber. The construction was purposefully very heavy in order to withstand the most rugged weather the Pacific might offer: each unit of the double hull was 12 inches thick with five and a half feet of solid timbers at the keel.

Sierra was powered by twin, 320 horsepower, four cylinder, Bolinder oil engines with a direct drive to twin propellers. The engines exhausted into a common stack which rose from the amidships superstructure. The water circulation systems of the engines were cross-connected so that if one might fail the engines need not shut down. The engine controls were carried on a central platform amidship so that one man could operate both engines -- a studied saving in operating cost.

A large hold is forward of the engine room and loaded through a cargo hatch 24 feet long and 12 feet wide. A smaller hold aft of the engine room is loaded through a hatch 20 feet long and 12 feet wide. The side combings of both hatchways are continuous from the forecastle bulkhead forward to the poop bulkhead aft and brackets the engine room skylight amidships as well as the donkey boiler.

The forecastle deck was carried aft sufficiently to allow the installation of the cargo winches. The bridgehouse boat deck was also extended aft to form a winch platform. The boat deck housed the quarters, mess rooms, and galley; the captain's cabin was on the bridge deck. The bridge deck also extended over the cargo area on the main deck. Ten berths were located in the forecastle and the poop had a stateroom on either side, with the steering room in the center.

Sierra went through several modifications. In 1927, refrigeration equipment was installed but in subsequent years, the refrigeration equipment was removed to allow for the shipment of lumber again. The greatest changes occurred in World War II. Under the ownership of the U. S. Army, the vessel was used as a training ship and most of its lumber-carrying features were lost in the conversion. The 14-foot high spaces on either side of the donkey boiler and below the bridge were fitted with two levels of rooms and passageways; additional new spaces were added aft of the original superstructure. Below decks, several new bulkheads and a machine shop were added.

Since his acquisition of the vessel in 1964, the present owner has sought to return the Sierra to its original appearance as a lumber carrier. To that end, virtually all of the modifications introduced by the Army have been removed and the reconstructed walls of the captain's cabin framed in. The majority of the mechanical equipment -- the Bolinder engines, donkey boiler, winches and auxiliary engines -- remains intact and is considered restorable. Some major elements of the vessel, such as the masts and the poop, are gone and vandals have removed numerous small items (the wheel, engine room telegraphs, name plates, and miscellaneous brass fittings). The underwater hull was surveyed in 1971 and found to be sound. Rainwater has penetrated the upper hull and caused substantial rot in places; because of the continuing moisture problem, both cargo hatches are left open to promote air circulation.

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 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 1916

BUILDER/ARCHITECT G. F. Matthews

STATEMENT OF SIGNIFICANCE

The motor ship Sierra was conceived and built as a more economical alternative to the use of steam cargo schooners. Steam vessels were becoming extremely expensive to operate by the second decade of the 20th century. Not only was their fuel consumption high, requiring frequent stops along their routes to replenish their supply, but the manpower needed to maintain and operate the steam engine was a substantial overhead. The cargo capacity of such vessels was not great enough to offset the high cost of operation. The Sierra was designed as a solution to these problems and was cited just after its construction as the "first internal combustion engined, full-powered lumber carrier to be placed in operation along the Pacific Coast".

The Sierra was built for the E. K. Wood Lumber Company of San Francisco and was designed by Seattle naval architect George H. Hitchings. It was built in the Hoquiam yards of G. F. Matthews. In 1915, Matthews had called on C. A. Thayer of the E. K. Wood Company. Thayer informed him that the firm was going to build a new type of ship -- a motor vessel with a hull design similar to a double-ended steam schooner. It would be powered by two Bolinder oil engines and carry a steam boiler for the operation of winches and other equipment. Matthews, accompanied by Hitchings, met with Thayer a second time and the two men were awarded the design and construction of the vessel.

Construction began in the winter of 1916. Because of the large number of shipyards erecting vessels on the Pacific Coast, experienced men were very difficult to come by. The demand caused wages to rise, along with the cost of materials, and shipyards had to compete for men and supplies to keep pace with war-inspired contracts. Sierra was launched in late summer and the engines put aboard. The installation was supervised by Chief Engineer Fred Hogan and a Bolinder representative, who could speak only Swedish. Oil and water tanks, and the steam boiler, came from San Francisco and were also installed at about the same time. Deck house and crew accommodations were finished and the cargo handling equipment added by November.

It was soon discovered that when both engines operated together, there was considerable vibration throughout the hull. Despite the vibrations, Sierra sailed for California, discharged the cargo and went to San Francisco where the curious action of the vessel came to the attention of C. A. Thayer. Thayer wrote Matthews and wondered if there might be some flaw in the soundness of the hull. Matthews stood by his work, calling the hull "one of the finest and one of the strongest wooden hulls ever built on the Pacific Coast", and suggested that the vibration was caused by unevenly balanced propellers. The propellers were checked and it was discovered that one had six inches more pitch than the other. The propeller manufacturer in Sweden made a new design which would conform with the needs of the Sierra and mailed a copy to the Hoquiam shipyard. The first and second ships carrying the message were sunk in the Atlantic but the third vessel completed the voyage successfully.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

HUGHES, Ronald L. Sierra. Seattle: 1964. Privately printed research paper.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY less than one

UTM REFERENCES

A

1	0	4	3	9	1	0	0	5	2	0	2	5	1	0
ZONE		EASTING				NORTHING								

B

ZONE		EASTING				NORTHING								

C

ZONE		EASTING				NORTHING								

D

ZONE		EASTING				NORTHING								

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Based on information supplied by Mart Liikane

ORGANIZATION

M/S Sierra, Inc.,

DATE

11/4/76

STREET & NUMBER

1608 Aurora Avenue North

TELEPHONE

CITY OR TOWN

Seattle

STATE

Washington

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

James M. Welch

TITLE

Deputy State Historic Preservation Officer

DATE

December 15, 1977

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

William H. ...

DATE

3-29-78

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

KEEPER OF THE NATIONAL REGISTER

ATTEST:

Nathaniel Cole

DATE

3-17-78

KEEPER OF THE NATIONAL REGISTER

UNITED STATES DEPARTMENT OF THE INTERIOR
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CONTINUATION SHEET

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Sierra was to ferry between the E. K. Wood mills in Bellingham and Hoquiam and travel as far as the Panama Canal. Although designed as a coastal vessel, the Sierra's fuel tanks were enlarged in 1917 so that the cruising range was extended to about 6,000 miles (38 days), pushing along at a modest eight knots. In May of the same year, the vessel made its first long voyage and sailed for Chile. On the many subsequent cruises to South American ports, the Sierra would return with cargoes of nitrate. The round trip was made without refueling, dramatically demonstrating the advantages of the early motor ship over steam.

In 1923, the Sierra collided with the passenger liner S.S. Wilhelmina, of San Francisco. Listing some 45 degrees to port and with a hole ten feet long and four feet wide, the Sierra was towed into port. The vessel was repaired and returned to service, which was largely routine but marked by several fires of limited impact.

In 1927, the vessel was purchased by an Alaskan firm to be used as a tuna fleet mother ship. When those plans failed, the Sierra was converted into a refrigerator ship to transport reindeer hides and carcasses from Alaska to Seattle. It operated in consort with three other similarly equipped vessels. Between 1929 and 1941, the use of the Sierra is confused by conflicting sources, having it variously as a salmon and herring saltery, with a tuna fleet, sailing along the coast and in Puget Sound, or moored in Salmon Bay.

Sometime after 1941, the Sierra was acquired by the U. S. Army and used as a permanently moored training ship at the Seattle Port of Embarkation. The vessel served to acquaint the military with cargo handling techniques and fire fighting aboard ship. After the war, it was placed in the reserve fleet until 1948 when it was purchased by a Montana cattle rancher, apparently for use as a commercial fishing vessel. The plan did not materialize and it was sold in 1963 as part of a package which included the sailing schooner Wawona (National Register 1970). The Wawona was transferred to a group interested in its preservation but there was no similar organization to support the rehabilitation of the Sierra. The present owner had long been familiar with the significance of the Sierra and acquired it in 1964. Since that time, he has been engaged in a one-man preservation effort.

The Sierra is significant as an early motor ship and one which demonstrated the practicality of cargo transport by internal combustion engine rather than sail or steam. It is a rare survivor of the wooden ship era and may possibly be the unique extant example of the double-ended cargo schooner. Despite its condition and homely appearance, the Sierra is an important contributor to the maritime history of the Pacific Coast.