(8-86)

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Section _____ Page ___

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 15000100 Date Listed: 03/24/2015

POLARIS (Research Vessel) — Property Name
San Mateo — County
CA — State

N/A — Multiple Name

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

Signature of the Keeper — Date of Action: 3/24/2015

Amended Items in Nomination:

Historic & Current Function:
The Historic Functions are revised to read: *Recreation & Culture, Education/Research Facility; Transportation-Water Related; Defense/Naval Facility.* Current Function is revised to read: *Education/Research Facility and Transportation/Water Related.* [The categories and subcategories selected should be taken from the standard terms provided in the National Register bulletin guidance.]

Architectural Classification:
The Architectural Classification should read: *Other: wood-hulled motor yacht*

Significance:
The appropriate Areas of Significance should read: *Maritime History, Recreation /Entertainment, Science, and Architecture (Marine Engineering).* [The categories selected should be taken from the standard terms provided in the National Register bulletin guidance.]

The Period of Significance is revised to read: *1927—1972.*
[The period of significance is terminated at 1972, marking the ship's last significant change in service and physical retrofitting. Taking the period of significance up to the present to reflect the continuing use of the resource is not warranted. Although the ship is still used in much the same manner as it was historically, continued use alone is generally not sufficient grounds for taking a period of significance up to the present unless specific, extremely significant, exceptional milestones can be shown for the property in the context of contemporary history. Continuing use alone does not necessarily equate to (exceptional) National Register significance. The ship's justified (exceptional) significance for the period less than 50 years ago under NR Criteria Consideration G appears best limited to the span from 1966 to 1972.]

(Continued)

SUPPLEMENTARY LISTING RECORD

(continued)

Significance:

Although discussed and justified in the narrative, *Criteria Consideration G* also needs to be checked on the cover form.

Geographical Data:

The appropriate UTM Zone should read: *10*

DISTRIBUTION:

National Register property file

Nominating Authority (without nomination attachment)

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION OF SIGNIFICANCE
Less than 50 Year Property

Research Vessel *POLARIS*
Redwood City, San Mateo County, CA

Criterion A and C

The Research Vessel *POLARIS* is of exceptional significance at the statewide level under National Register Criteria A and C in the areas of Maritime History, Recreation /Entertainment, Science, and Architecture (Maritime Architecture). Built by the Wilmington Boat Works for influential businessman and reclamation advocate Lee Allen Phillips in 1927, the Research Vessel *POLARIS* (originally christened the *Pasada Manana*) was a luxuriously appointed, wood-hulled pleasure yacht. Reflecting the prosperity of its owner and the extravagance of the times, the richly detailed boat served as both business instrument and pleasure craft within California's inter-coastal waterways. Phillips' efforts in support of reclamation in the California Delta area-- significantly aided by his prized yacht--played an important role in the development of the state.

The *POLARIS* would have a second life and second significant historic association in the post-World War II era as a scientific government research vessel. After a succession of private owners and a spell as a wartime personnel carrier in the Pacific Northwest, the ship was purchased by the U.S. Geological Survey in 1966 for use in marine geology studies, including efforts in the Pacific Northwest, Alaska, and Santa Barbara. The ship's unique role in studies associated with pivotal maritime events such as the 1964 Alaska earthquake and the 1969 Unocal oil rig spill marked an exceptional career of scientific study. The final era of significant scientific involvement was marked by transition to the San Francisco Bay Estuarine Studies Group in 1971, and subsequent investigations in the San Francisco, Sacramento, and the San Joaquin Delta areas, one of the West Coast's largest estuaries. The ship's studies, which continue today, represent one of the country's' longest record of water quality measurements for a bay environment, and significantly influenced local and regional policies.

While the ship continues its work as one of the oldest operational vessels in federal service, the period of significance is best terminated at 1972, marking the ship's last significant change in service and final major retrofitting. Continued use is generally not sufficient grounds for taking a period of significance up to the present for historic resources unless specific, extremely significant, exceptional milestones can be shown for the resource within the context of its particular theme. Neither the bibliography nor current citations provide sufficient context to evaluate present day efforts in light of modern maritime research or comparative operations.

From a design standpoint the ship's physical fabric illustrates the *POLARIS*' evolution from pleasure craft to functional research vessel, incorporating materials and design elements from several different periods, resulting in a significant encapsulation of twentieth-century maritime architecture and engineering. Under Criterion C the period of significance extends from the period of initial construction (1927) up to the last major phase of retrofitting (1972) in order to acknowledge the fact that while the boat retains its basic framing and various original fittings it is not a pristine example of early twentieth century motor yacht design, but rather a significant amalgam of unique functional and recreational forms from a broader period. (The relative lack of comparative context in the narrative for 1920s period pleasure yacht designs is thus not as significant an issue given the perspective of the ship's unique and exceptional career.)

Paul Lusignan
Historian, NPS
3/20/2015

NPS Form 10-900 OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

100

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: Research Vessel (R/V) *Polaris*
Other names/site number: *Pasada Manana*
Name of related multiple property listing:
N/A

2. Location

Street & number: 597 Seaport Boulevard
City or town: Redwood City State: CA County: San Mateo
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 X nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property X meets ___ does not meet the National Register criteria. I recommend that this property be considered significant at the following level(s) of significance:

___national **X statewide** **___local**

Applicable National Register Criteria:

X A **___B** **X C** **___D**

Signature of certifying official/Title: **Date**

E.P.O 02/10/2015

State or Federal agency/bureau or Tribal Government

In my opinion, the property X meets ___ does not meet the National Register criteria.

Signature of commenting official: **Date**

2-5-15

Title : California State Historic Preservation Officer

NPS Form 10-900 OMB No. 1024-0018

United States Department of the Interior
National Park Service

100

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: Research Vessel (R/V) *Polaris*
Other names/site number: *Pasada Manana*
Name of related multiple property listing:
N/A

2. Location

Street & number: 597 Seaport Boulevard
City or town: Redwood City State: CA County: San Mateo
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 X nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property X meets ___ does not meet the National Register criteria. I recommend that this property be considered significant at the following level(s) of significance:

___national **_X_statewide** **___local**

Applicable National Register Criteria:

_X_A **___B** **_X_C** **___D**

Signature of certifying official/Title: **Date**

State or Federal agency/bureau or Tribal Government

In my opinion, the property X meets ___ does not meet the National Register criteria.

Signature of commenting official: **Date**

2-5-15

Title : California State Historic Preservation Officer

4. National Park Service Certification

I hereby certify that this property is:

X 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: 3/24/2015

5. Classification

Ownership of Property

Private:	☐
Public – Local	☐
Public – State	☐
Public – Federal	X

Category of Property

Building(s)	☐
District	☐
Site	☐
Structure	X
Object	☐

Number of Resources within Property

Contributing	Noncontributing	
		buildings
		sites
1		structures
		objects
1		Total

Number of contributing resources previously listed in the National Register 0

6. Function or Use
Historic Functions

pleasure craft

Current Functions

scientific research vessel

7. Description

Architectural Classification

Yacht

Materials:

Principal exterior materials of the property: wood

Narrative Description

Summary Paragraph

The research vessel (R/V) *Polaris* is berthed at Wharf 5 at the Port of Redwood City in San Mateo County, California. This vessel was originally built as a pleasure yacht, the *Pasada Manana*, has an overall length of 96 feet, a 20-foot beam, and an 8-foot draft. The vessel has two decks and a bilge and bent oak frames with the stem, sternpost, and oak horn timbers. The vessel is planked with 2.25 inch vertical grain Douglas-fir. Hull thickness increases to over 8 inches at the garboard strake near the keel. The foredeck, waist deck, deck houses and trim are made of teak with all vertical surfaces coated with varnish. The teak decking has been covered with a watertight membrane. There are six round brass port lights on the starboard and port sides near the bow, three spars, and exhaust stack.

Under federal ownership, the *Polaris* has been modified for research and been retrofitted to ensure safety and improve efficiency. These changes have been made to retrofit the vessel for scientific research and to keep it in service. The retrofits were accomplished in a manner sensitive to the original design and feeling. The vessel's association now lies in its role as a research vessel for the federal government.

Narrative Description

Exterior

The R/V *Polaris* has an overall length of 96 feet, a 20-foot beam, and an 8-foot draft. The vessel has bent oak frames with the stem, sternpost, and oak horn timbers. The *Polaris* is planked with 2.25 inch vertical grain Douglas-fir. The thickness of the hull increases to over 8 inches at the garboard strake near the keel. The foredeck, waistdeck, deck houses, and trim are of teak with all-vertical surfaces coated with varnish. The teak deck planking was at least 22.5 inches thick when new. The teak decking has been covered with marine-grade plywood, a layer of fiberglass matting, and a topcoat of watertight membrane.

The hull has six round brass port lights on the starboard and port sides near the bow. The anchor is stored off the starboard bow. The forward and mid upper decks are surrounded by a safety railing composed of metal posts, cable center rail, and teak grip rail. There are three spars: the mainmast in the center, a forward mast with navigation and telecommunication equipment, and a rear davit for hoisting the 17-foot boat. A large exhaust stack is just aft of center. The vessel has two decks and a bilge.

The Upper and Fo'c'sle Deck

The pilot house is approximately 13 feet wide by 16 feet long at the deepest point. The front is semicircular. There are six windows and a door on each side of the rear of the bridge leading to the deck. The window sashes are mahogany and arched in the upper corners. Two of the windows are Regulation Pullman windows, or pocket windows that lower into a lead "pocket" for water collection and draining and ventilation. The doors have a single glass pane and are mahogany. The pilothouse has Tabasco mahogany paneling. When new, there was a settee/couch on the aft bulkhead of the pilothouse below the ship's clock and barometer. The couch has been replaced with a map cabinet. The captain's cabin was behind the bridge on the port side. This room has been modified and is now a hallway to the upper laboratory (formerly the smoking room) with a spiral staircase leading to the accommodations deck below. There is a double stateroom on the starboard side for the seaman and cook. The engineer was quartered in the pilothouse. Throughout the boat, there were double call bells for contacting the crew and mechanical ventilators in all rooms.

The smoking room on the upper deck aft of the pilothouse, which has been outfitted as a laboratory, is 12 feet deep by 113 feet wide. It is paneled in Tabasco mahogany with half-inch white hardwood inlay and has mahogany caps on the overhead deck carlines. This compartment has eight mahogany-sashed Regulation Pullman windows for ventilation and light.

In the stern, there was a 12 feet long by 10 feet wide elliptical cockpit for either lounging or game fishing. When built, the cockpit was covered with open sides. The roof is flat, wood frame, and elliptical. Three fixed windows and a door on each side, and canvas roll-down panels with plastic windows across the rear have been added. The doors are constructed to match other

exterior doors on the vessel. The teak decking in this room is still exposed. There is a large brass drain in the floor with a center-star pattern.

Between the smoking room and the aft cockpit is the fo'c'sle deck. Drawings of the *Pasada Manana* indicated that when constructed this deck was covered with a low roof, possibly for covered storage. The deck is now open and has an aft davit and carries the 17- foot Boston whaler.

Lower Deck

The lower deck has two forward berths, a lower laboratory, engine room, saloon with galley kitchen, and two aft state rooms. The salon and other cabins are finished in Tabasco mahogany, originally with a walnut finish, and a half-inch inlay of white hardwood. The berths and staterooms have been painted white. Overhead, deck carlines are also solid Tabasco mahogany. The lower deck has 7-foot headroom throughout except for the watertight doorways. The vessel can sleep 13 passengers and crew.

Forward of the engine room, was the owner's stateroom with a double and single bed, sitting area, and head with shower. This room has been converted into the lower laboratory with the furnishings and beds removed. There was a forward stateroom with two ship-style berths and a head and shower. The stateroom has been divided into two berths—the head and shower in the bow have been removed. A ladder and scuttle were added in one starboard berth to provide emergency egress. A head and shower are on the port side across from the lower lab.

Along the port side is the engine room leading to the saloon is a galley kitchen. The galley was fitted with an Oxo-gas kerosene stove from Shipmate and had both an electric refrigerator and an icebox. The kerosene stove has been changed out for an electric unit. To the rear of the galley kitchen is a dinette with built-in table and bench seats.

The saloon is 16 feet wide, 21 feet long, and behind the engine room. The saloon has a built in china cabinet along the front wall. The cabinet has bubble glass in the upper doors. There are built-in storage cabinets in the walls along the starboard wall. There was a head and shower room in the starboard forward corner of the saloon. This head and shower have been converted into storage space including a full-size refrigerator. The brass-rimmed port lights in the saloon are alternating round and oblong. While a pleasure craft, the saloon could be made into four separate cabins by a curtain arrangement.

There are two aft staterooms approximately 12 feet by 8 feet with two berths. The cabins shared a the head and shower in the saloon; however, now small closets in each of the two cabins have been converted to heads. The brass-rimmed port lights in the saloon are alternating round and oblong.

The engine room is in the center of the vessel beneath the upper lab on the starboard side. The room is approximately 20 feet long by 14 feet wide. The walls are riveted metal panels with

brass-rimmed, round port lights along the starboard side. Even in 1927, the boat was outfitted with a carbon dioxide fire protection system for the engine room and the galley.

The original main engine was a 200 horsepower (hp) Atlas-Imperial diesel with pilot house control positioned exactly amidships. It drove a 54-inch, three-bladed, single propeller designed especially for the ship by William Lambie. This engine gave the vessel a cruising speed of 11 knots at 300 rpms. There were two generators, a 7.5 kilowatt (kW) generator driven by the main engine and a 12.5 kW Universal generating plant.

In 1959, the vessel was repowered with a direct reversible six cylinder Union Diesel main engine of 240 hp at the Stone Boatyard in Alameda. This turned out to be the last Union Diesel engine made by the Oakland, California, company once located at the intersection of Union and Diesel streets. With a direct reversible engine, the engine order telegraph has two handles, a shorter one for fuel and a longer one indicating stop, forward, air forward, astern, and air astern. There is no transmission. The engine is made to run backwards on a second set of camshaft lobes. From forward, the captain would throttle back the fuel to dead slow and then stop the engine. The camshaft was shifted to the reverse position while air is applied through the air distributor to each of the cylinders in their firing order and increasing the throttle. When 75 rpms are reached on the tachometer, the captain would pull back the longer handle to astern. To stop, the captain would reduce the rpms and move the longer handle to stop. The same procedure would be used each time to move ahead or astern. From full ahead to running backwards took approximately 40 seconds, and the captain would be able to shift 8 to 10 times while maneuvering before running out of air.

By 1990, to increase reliability and reduce maintenance costs (parts were no longer available and had to be custom made), the direct reversible Union Diesel main engine was removed and replaced by a Detroit Diesel 12V71 with a transmission. The Union Diesel engine was donated to the San Francisco Maritime Museum. The weight difference between the Union and the Detroit engines was 15,000 pounds. After installation, some lead ballast was moved for trim and stability. The *Polaris* has three electrical generators, two 30 kw and one 15 kw to provide power rates of 240 vac, 120 vac, 24 vdc, and 12 vdc for the various ship and scientific equipment requirements. The three fuel tanks carry more than 2,500 gallons of diesel. Fuel consumption, with the main engine and two generators operating, averages 10 gallons an hour, at a cruising speed of 10 knots.

Scientific Research Modifications

When the Branch of Pacific-Arctic Marine Geology received the vessel in the spring of 1966, it was modified with an electronic "sparker" system and a seismic streamer for sub-bottom geophysical data collection. When the *Polaris* was transferred to the San Francisco Bay Estuarine Studies Group in the early 1970s, the ship was fitted with pumps below the waterline to take samples and instrumentation to record the data was installed. As the scope of the operation and instrument technology was expanded, the *Polaris* was outfitted with four hydraulic

winches to handle different types of sampling and a new computer system. It is believed that the upper lab was installed in the 1970s, and the lower lab in the 1990s.

The pilot house is equipped with a rasterscan radar and an autopilot, both connected to a Sperry Mark 37 gyrocompass, Differential GPS, Loran C, video sounder, VHF radios, and a recording fathometer.

Integrity

Integrity is defined by the National Park Service as a property's "ability to convey its significance." In order to be eligible for the National Register, properties should retain most of the seven aspects of integrity. Assessment of the vessel's integrity is as follows:

- Location—the vessel is in a location (San Francisco Bay area) with which the vessel has historical association with its development.

- Design—the vessel retains some integrity in design as a pleasure yacht. The changes from the original design as a pleasure yacht include in the interior the removal of furnishings, conversion of the owner's sleeping berth and smoking lounge to science labs, addition of stairs between the pilot house and below living spaces, and the renovation of two closets into heads. These changes were due to a change in use from a pleasure yacht to a research vessel. The number of rooms remains the same. Many other rooms, kitchen, pilot house, berthing rooms, and dining area retain the same uses. The most visible change to the exterior design is the removal of the wood fo'c'sle deck cover between the smoking room and the aft cockpit. The deck is now open and has an aft davit and carries the 17- foot Boston whaler. It is not known when this cover was removed. The exterior of the vessel does retain the most of her design as a late 1920s pleasure yacht, while the interior retains some of her design of yesteryear.

- Setting—the vessel is still in the water and resides in the environment for which she was designed, California coastal waters.

- Materials—the vessel retains overall integrity of materials. The vessel has bent oak frames with the stem, sternpost, and oak horn timbers. The exterior teak decking has been covered with marine-grade plywood, a layer of fiberglass matting, and a topcoat of watertight membrane. Much of the interior inlaid Tabasco mahogany paneling is intact.

- Workmanship—the vessel retains integrity of workmanship. Repairs and replacements have been made by skilled boat builders and skippers. It is reported that when the Army owned and operated the vessel in the Puget Sound during WWII, the interior was painted green. The paint has been meticulously removed to uncover the original wood paneling which once adorned the living spaces inside

- Feeling—the exterior of the vessel evokes an aesthetic and historic sense of the past and

particular time as a pleasure yacht, however, interior modifications have reduced the feeling of opulence and luxury of her former use.

- Association—the vessel is still linked to the environment and loosely to the events for which she was originally used.

8. Statement of Significance

Applicable National Register Criteria

[X] 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.

[X] 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

[ ] 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

Areas of Significance

Pleasure craft
Science research vessel

Period of Significance
1927 (Criterion C)
1927- 2015 (Criterion A)

Significant Dates
1927 - 1938, 1966, 1971

Significant Person

Cultural Affiliation
N/A

Architect/Builder
Designer A. E. Hudson
Builder H. C. Carlson, Wilmington Boat Works

Statement of Significance Summary Paragraph

The R/V Polaris is eligible under Criterion A, at the state level of significance, having made a significant contribution to the broad patterns of our history, through her association with the historic theme recreation/entertainment and in the area of scientific research. The R/V Polaris is also eligible under Criterion C for embodiment of the distinctive characteristics of a type and period of vessel. She is an excellent representation of a late 1920s pleasure yacht.

The history of R/V *Polaris* can be most effectively divided into two over arching topical areas, which relate to the 20th century history of the western United States. The vessel belonged to Lee Allen Phillips, a prominent California businessman and land developer, from 1927 until his death in 1938. He used the *Polaris* as a pleasure craft and to visit his irrigation projects in the Sacramento-San Joaquin River Delta (also California Delta or Delta.). Lee Allen Phillips was a Progressive-era businessman who took a special interest in irrigation and reclamation. The vessel's association with Phillips represents a link to the history of California. Called the *Pasada Manana* at the time, the vessel was sold to John Grant, a Los Angeles oilman, in 1938. He kept the vessel until 1944 when the U.S. Army acquired it and used the vessel as a personnel transport in Puget Sound. The vessel changed hands several times after the war until it was acquired by the U.S. Geological Survey (USGS) in 1966. The USGS converted the pleasure craft into a research vessel and it has played a role in marine geology and water quality research in Alaska and the San Francisco Bay area. This is the second topical area the *Polaris* represents.

The R/V *Polaris* is significant under Criterion A for association with the early Twentieth Century reclamation of, and development of agriculture within, the Sacramento-San Joaquin River Delta. The R/V *Polaris*, originally the *Pasada Manana*, was built for Lee A. Phillips, presumably, in part, to oversee his investment and land reclamation foresight in the San Joaquin River Delta. The vessel has since become one of the oldest research vessels within the federal government fleet at 86 years old, with contributions in federal service beginning 47 years ago. The vessel's contribution to science includes one of the longest water-quality measurement records in a United States' bay, collected in the San Francisco Bay area beginning 42 years ago. Ironically, after approximately 30 years, the vessel returned to San Francisco Bay to continue work in the San Joaquin River; this time as a research vessel for the USGS to monitor the water quality that has been impacted, in part, by the very work of Lee A. Phillips. Under Criterion A, Polaris's period of significance extends from1927 to the present. Because of her exceptional role in researching the effects of the 1964 Alaska Earthquake, her mitigation work after the 1969 Santa Barbara Oil Spill, and the ongoing measuring and monitoring of water quality in San Francisco Bay and the Sacramento-San Joaquin Delta from 1966 to the present, Polaris meets National Register Criteria Consideration G and represents an aspect of the history of the state as a whole.

Under Criterion C *Polaris* is significant for embodying the distinctive characteristics of classic pleasure motor yachts of the early Twentieth Century. The *Polaris* retains character defining features of her original construction, and continues to share many design features of other pleasure yachts constructed at that time. The period of significance under Criterion C is 1927, the year *Polaris* was built.

Narrative Statement of Significance

Lee Allen Phillips

Research vessel (R/V) *Polaris* was originally christened the *Pasada Manana* in May 1927. The *Polaris* was built for Mr. Lee Allen Phillips, then, the executive vice president of Pacific Mutual Life Insurance Company and president and director of California Delta Farms.

Mr. Phillips was born in Ashton, Illinois, August 24, 1871, son of Milton Eaves and Magdelina Phillips. Milton Eaves Phillips became well known in Los Angeles, where for four years he was dean of the University of Southern California. Lee A. Phillips received his law degree at DePauw University, Greencastle, Indiana, in 1894. He moved to Los Angeles and in October 1894 he began practicing law for Cochran & Williams, a job he held until 1907.

Phillips was a man with essentially two careers. In one, he was a lawyer and insurance executive. In another, he was active in the business of draining and reclamation of land in California. Reclamation was a cornerstone movement of the Progressive era when men such as George Maxwell and William Edward Smythe argued forcefully that western lands should be reclaimed for small-scale agriculture (either by providing water through modern irrigation systems, or draining waterlogged lands). They saw this as the most appropriate way to save U.S. democracy from the labor and social crises of the Gilded Age. Both attempted to put their theories to work by establishing settlements. Smythe most famously established the Little Landers Colony near San Ysidro, California. Maxwell established "Homecroft" settlements in Pennsylvania and Arizona. Their activism ensured the passage of the National Reclamation Act in 1902, which provided a federal role for development of irrigation in the West.

While it is not clear if Phillips had the reformist zeal of Smythe and Maxwell (not all advocates of reclamation were so ideologically predisposed), it does appear that he understood the value of reclamation for the development of California (and perhaps his own pocketbook). His first foray into reclamation began in 1900 when he embarked on a plan to drain the Cienega swamps west of downtown Los Angeles. Artesian wells were developed on the land after the swamps were drained. Water from the wells was conveyed to dry land between the towns of Palms and Santa Monica, thereby reclaiming more land for agriculture. The reclaimed lands were sold as small parcels to farm families. These lands were, by 1921, providing the bulk of fresh vegetables available for purchase in the Los Angeles area (McGroarty 1921).

Phillips began a more ambitious reclamation project two years after the Los Angeles project. In 1902, he acquired the Jones tract in the San Joaquin-Sacramento River Delta. The Jones tract, one of over 70 islands and reclaimed tracts of land in the delta, is a 12,000-acre island less than 10 miles from Stockton, California. When Phillips acquired the island, the California Delta had been subjected to limited development. A few settlers began building dams and levees to drain the marshy land as early as the 1860s. The state had classified the delta lands as "barren wastes,"

but by the late 1860s investors began seeing the potential productivity of the marsh lands if they could be reclaimed. This awareness led to large-scale reclamation efforts in the central Delta at Sherman Island and Twitchell Island beginning in 1869. Almost 18,000 acres were enclosed with levees, flumes, and tide gates through the cooperative labor of small-scale farmers. Over 40,000 acres were subsequently reclaimed in the southern third of the Delta in the 1870s.The reclamation work in this region was done by large crews of Chinese laborers and a hydraulic dredge. The reclamation efforts in the California Delta had spread south by 1900, with efforts centering on the area south and east of the San Joaquin River, including the Jones tract (Thompson 2006).

Phillips's acquisition of the Jones tract was the beginning of a vast accumulation of land in the California Delta. He moved to Stockton in 1902 and, over the next four years organized a number of corporations (land companies and holdings companies) for the purpose of reclaiming over 100,000 acres of land in the California Delta. The companies were consolidated into California Delta Farms, Incorporated, in 1906. Phillips served as the corporation's president for over 20 years. California Delta Farms holdings included King Island, Bacon Island, Bouldin Island, the Rindge Tract, and islands in Contra Costa County. Land was initially leased to Japanese and Chinese framers who operated the farms on a share basis. Some land was eventually sold to individual farm families. The California Delta quickly became one of the most productive agricultural regions in California (McGroarty 1921; *San Jose Evening News* 1907).

Phillips's interest in reclamation extended beyond California, both in terms of edification and implementation. He traveled to Holland to study that nation's dike system in 1905. As president of the Pecos Valley Investment Company (not the much larger Pecos Valley Irrigation and Investment Company), he oversaw the reclamation of over 3,000 acres of desert land near Roswell, New Mexico, through development of irrigation via artesian wells. The land, by 1921, contained 700 acres of apple orchards and alfalfa fields (McGroarty 1921; Bessemer Gas Engine Company 1914).

Phillips returned to Los Angeles in 1907 to become associate counsel for the Pacific Mutual Life Insurance Company; in 1912 was chosen third vice president in charge of company investments. Six years later, he became the vice president and treasurer of the company, which held $250 million worth of insurance policies and $45 million of investments. A contemporary journalist describes the Pacific Mutual Life Insurance Company as "one of the most progressive insurance companies in America" (McGroarty 1921). The company, formed by Leland Stanford in 1868, was, for example, the first insurance company to offer accident insurance (in 1885). Later, the company also began offering noncancelable disability insurance policies. Pacific Mutual also became the largest insurance company in California.

After returning to Los Angeles, Phillips became active in the development of the downtown business district. He played an active role in the financing and oversight of the construction of the Pacific Mutual Building on West Sixth Street near Pershing Square. The building, designed by noted Los Angeles architects John Parkinson and Edwin Bergstrom, was completed in 1908. It quickly became a commercial centerpiece in Los Angeles. Phillips also played a prominent

role in the construction of the Biltmore Hotel less than a block away from the Pacific Mutual Building. The Biltmore was designed by Leonard Schultze and S. Fullerton Weaver, two iconic architects who were also responsible for the Waldorf-Astoria, Sherry-Netherland, and the Breakers. The Biltmore was constructed and equipped at a cost of $10 million and opened to the public in 1923. It was, at the time, the largest hotel west of the Mississippi. The Biltmore became an instant attraction. Thousands of people attended its grand opening. The hotel hosted the Academy Awards from 1931 to 1942. Phillips, thus, was responsible for the construction of two of Los Angeles' architectural landmarks.

Phillips played another indirect role in developing southern California. In 1929, he created the Consolidated Rock Products Company through an $11 million merger of smaller companies. Consolidated Rock Products, which was owned by Phillips, operated 23 producing plants and other rock product facilities and served a wide region from Santa Barbara to San Diego (San Diego Union 1929).

Lee Allen Philips's business success allowed him certain luxuries. Phillips purchased three lots in the exclusive West Los Angeles subdivision of Berkeley Square in 1905. The subdivision was conceived and constructed between 1903 and 1905 and Phillips was one of the first property owners. Envisioned as a showcase of prominent architecture among a picturesque Southern California palm-studded landscape, Berkeley Square was the model of exclusivity. The entire subdivision, including the streets, was privately owned. The neighborhood was also gated and effectively segregated.

Phillips built two homes in Berkeley Park. His first home was constructed in 1907 to coincide with his return to Los Angeles. A year later, he added a garage and servants quarters to the rear of the property. Phillips sold his first Berkeley Park home to William Gustavus Hunt in 1913. Phillips purchased three additional lots to build his second Berkeley Park home in 1912—a large estate with at least 22 rooms (sources list as many as 85 rooms), in which he lived until his death in 1938 (No Author 2011).

Phillips also had a home built in the, then rural, Beverly Hills in 1911. The house was intended to be a country retreat for his wife Catherine. Phillips owned the house until he sold it to Hollywood stars Douglas Fairbanks and Mary Pickford sometime around 1920. They renovated Phillips's rural retreat into a 22-room estate house known as Pickford.

In 1920, Phillips and Arthur C. Parsons of San Francisco, had a pleasure craft built. Parsons was a friend and business associate of Phillips, president of the Venice Island Land Company, and sales manager for California Delta Farms, Inc. The vessel, constructed by William Cyer in Oakland, was christened *Pasada Manana* (also called the *Pasado Manana*). "Pasado manana" is loosely translated as "day after tomorrow" or "get around to it tomorrow," reportedly a retort to the owner from his wife after he tried to reassure her that he would get around to some necessary task "tomorrow."

The 1920 vessel was 65 feet long with a 16-foot beam and drew 5 feet. The vessel had a forward cabin with private lavatory, large galley, aft main cabin, rear cockpit, and a pilot house over the engine room near the center of the vessel. Phillips and Parsons used the *Pasada Manana* in the winter months to cruise their extensive interests in the California Delta. During summer months; however, the vessel was put to more pleasurable use. The businessmen, avid anglers, used the *Pasada Manana* to cruise and fish for tuna and swordfish around the Catalina Islands and surrounding waters (No Author 1920). It is not clear what happened to the original *Pasada Manana*, but by 1927 Phillips had a new larger boat constructed and also christened her *Pasada Manana*. This vessel became the research vessel (R/V) *Polaris*.

The new *Pasada Manana* was larger and more luxurious than the first, cost more than $150,000 (in 1927 dollars), and took six months to construct. The vessel was designed by A. E. Hudson and built by H. C. Carlson of the Wilmington Boat Works of Wilmington, California. Like its successor, the new *Pasada Manana* was also featured in an issue of *Pacific Motor Boat*. The vessel was 96 feet long and was one of the first private vessels to have a telephone land line hook-up whenever it docked. The *Pasada Manana* had a 20-foot beam and a draft of 8 feet. The hull was designed so that its thickness increased to over 8 inches at the garboard strake near the keel. The vessel was constructed with bent oak frames, stem, sternpost, and horn timbers. It was planked with 2.25-inch vertical grain Douglas-fir. The foredeck, waistdeck, deck houses, and trim were teak with all vertical surfaces coated with varnish. The planking of the teak decks were at least 2.5 inches thick when new. The cabins of the boat were all finished in Tabasco mahogany, originally with a walnut finish, and a half-inch inlay of white hardwood. Overhead, deck carlines are also solid Tabasco mahogany.

Mr. Phillips used the vessel much like the original *Pasada Manana*. He continued to monitor his interests in the California Delta region and his love for fishing remained unabated. The vessel was, therefore, used for trips in search of swordfish and marlin. Apparently, Phillips took the *Pasada Manana* to Canada during prohibition to purchase whiskey. The contraband was hidden in the vessels wall panels (Okamoto and Wong 2011). Considerably larger than the original *Pasada Manana*, this vessel could sleep 13 guests aft and a crew of 4 and was used as a "floating hotel" for Phillips and his guests, which included such prominent individuals as Winston Churchill in 1929 and former U.S. President Herbert Hoover in September 1933.

The *Pasada Manana* went through a succession of owners after Phillips death in 1938. The vessel was sold to John Grant, an oil executive from Los Angeles, the year Phillips died. Grant was the registered owner until 1944, when the U.S. Army acquired the vessel, which then became an army personnel boat, designated the Q109, and was assigned to the Seattle area to move men and their equipment between garrisons where the army maintained harbor installations.

After the war, the vessel was sold to Mr. Einar Haugen, a professor of linguistics at the University of Washington, Seattle, registered as a yacht, with a master and crew of five. Haugen kept the vessel until 1950, when it was sold to Mr. Robert Fleming of Los Angeles. Haugen, who was rising to prominence in the field of linguistics, probably sold the vessel before he

transitioned into his new faculty position at Harvard University. Fleming kept the boat for two years and then sold it to Mr. Robert Paysee of Chicago, Illinois, who in turn kept the boat through 1956, at which time it was transferred to the Prothero Boat Company in Seattle, Washington. Shortly thereafter, the *Pasada Manana* was purchased by Alaska Charters, Incorporated. The company renamed the vessel the *Polaris* and kept it for two years. In 1959, Ken K. Bechtel, the son of the founder of Bechtel Corporation purchased the vessel. Ken K. Bechtel was an executive with the engineering company. Bechtel and his friends cruised the *Polaris* up and down the coast and the Inside Passage to Alaska. He kept the *Polaris* for four years before putting it up for sale at a price of $163,000.

Research Vessel *Polaris*

This time, however, the *Polaris* failed to attract a new owner, and was donated to the University of California at Berkeley. The university tried to use the vessel for a variety of purposes, but the vessel proved to be problematic. Apparently, each time it left the Richmond berth "something broke" and the expenses for upkeep, repairs, and the berth where mounting (Richards n.d.). Within three years, the university decided to sell the *Polaris*. Meantime, the U.S. Geological Survey was looking for a vessel to use for marine geology studies. The USGS petitioned for and received a special appropriation of $4,000 from Congress to purchase the *Polaris*.

The Branch of Pacific-Arctic Marine Geology received the vessel in the spring of 1966. Marine geology used the *Polaris* for coastal operations until a larger ship was acquired. After being modified for scientific operations, the *Polaris* started its research career off the coast of Oregon. The vessel was used for seismic work in the Pacific Northwest. Later that year, it was displayed at the American Geophysical Union conference in San Francisco. One of the boat's early expeditions was in 1967, when the vessel was taken to Prince William Sound in Alaska to survey the area and document the effects of the 1964 earthquake (Richards no date).

The *Polaris* was dispatched to one of the worst oil spills in U.S. history off the coast of Santa Barbara in 1969. A Unocal drilling rig "blew out" on January 8, 1969, releasing over 3 million gallons of crude oil into the seas near the central coast community. The ecological catastrophe contributed to the passage of the National Environmental Policy Act of 1969, as amended (NEPA) less than a year later. The *Polaris* assisted with mitigation efforts.

The marine geology group retired the *Polaris* in 1971 and the boat was transferred to the San Francisco Bay Estuarine Studies Group in the early 1970s to be used for data collection supporting estuary research. Estuaries are among the most disturbed natural environments. Human activities have affected the estuarine ecosystem through water diversion, flow manipulation, and agriculture. To understand the impacts of human activities, scientists seek to understand the natural fluctuations and processes in the ecosystem. Estuaries have complex patterns of water quality variability due to mixing zones between the ocean and the land. Fresh water, sediments, nutrients, toxic contaminants, and other materials are carried into the estuary by river flow. River flow changes seasonally and from year to year. Long-term and continuous data sets are necessary to identify natural trends. Phytoplankton (microscopic algae) are at the

base of the food web and the largest component of living biomass in San Francisco Bay making it important to understand how physical and chemical parameters affect their dynamics.

The *Polaris* was modified to facilitate its new function. The vessel was fitted with pumps below the waterline to provide a continuous supply of bay water to a series of instruments that recorded temperature, salinity, turbidity, and fluorescence while underway. In addition, a reel with a submersible pump at the end of a long hose was mounted on the stern to take samples from various depths at over 15 stations, from the southern end of the bay to Rio Vista on the Sacramento River, and the Three Mile Slough entrance on the San Joaquin River. Other stations have been added over the years. Today, there are 36 "science" stations (Richards no date).

The *Polaris* was also fitted with two small hydraulic winches on the aft deck for benthos sampling. These are used for grab and core samples and gathering biologic samples such as the invading Asian clam potamocorbula. The boat boom can be operated in conjunction with a larger deck winch for heavier cores, launching and recovery of current meters, and operation of a box core. A 17-foot Guardian Boston Whaler is carried on the port side boat deck for use in shallow water benthos sampling in South Bay and in Suisun Bay. The Guardian is capable of extensive grab and small core sampling in water too shallow for the *Polaris*.

Onboard instruments processed this water and the values were originally recorded on strip charts. The strip charts have been replaced by a computer running the Multiple Interface Data Acquisition System (MIDAS). MIDAS also records data from other onboard systems, which measure air temperature, atmospheric pressure, wind speed, and direction.

Other modern instruments on the vessel include a Differential GPS (DGPS) and the video depth sounder in the pilot house that provides course, speed, latitude and longitude, as well as water depth. An instrument package called a CTD (Conductivity, Temperature, and Depth) is lowered at each station on a conductive wire from a hydraulic winch. The package is lowered through the water column at about 1 meter per second, resulting in measurements every 4 centimeters from the water surface to the bottom of the bay. The CTD instruments measure conductivity, temperature, depth, fluorescence, optical backscatter, and oxygen at the stations, which are situated along the axis of San Francisco Bay. The CTD instruments are integrated with a Sea-Bird Electronics-9 data acquisition system that digitizes and records signals on a personal computer 24 times per second (Richards n.d.).

Using these and other scientific instruments, the *Polaris* and the scientists have spent over four decades studying water quality on San Francisco Bay. They conduct monthly cruises throughout the estuary. Research was, in 1980, expanded to include investigations of the Sacramento-San Joaquin Delta.

For the scientists working on board the *Polaris*, there is berthing for 13, two heads, a shower, and a full galley. The pilot house is equipped with a "rasterscan" radar and an autopilot, both connected to a Sperry Mark 37 gyrocompass, DGPS, Loran C, video sounder, VHF radios, and a recording fathometer. A crew of two Coast Guard licensed merchant marine officers assisted, as

deemed necessary by the scientific party, with operation of the vessel. Two limited service life rafts are available for emergencies (Richards n.d.).

The *R/V Polaris* works in is the San Francisco Bay and Delta, an area from the Central/ San Joaquin Valleys and the base of the Sierra Nevada mountains to the Pacific Ocean. As the largest estuary on the West Coast, the Sacramento-San Joaquin Delta spans a watershed that captures more than half of California's surface water. It is where the rivers of the Sierra Nevada mountains meet the tidal influences of San Francisco Bay. Two of every three Californians depend on the Delta as a key water source, as do farmers on millions of acres of land in the Central Valley, millions of birds that use the estuary for migration patterns, and numerous fish species including salmon and steelhead (http://www.mwdh2o.com/mwdh2o/pages/yourwater/supply/delta/background.html).

Since the discovery of gold in the Sierra Nevada foothills in 1848, this region has undergone rapid, large-scale, and permanent changes driven by population migration attracted to the region's natural setting and economic opportunities. The consequent land use changes, particularly urbanization, have resulted in the loss of wetlands, alteration of freshwater inflows, contamination of water, sediments and biota, and declines of fish and wildlife species (http://www.mwdh2o.com/mwdh2o/pages/yourwater/supply/delta/background.html).

The Delta is key to the California economy and environment. In recent years, non-native species such as Asian clams have infested the waters and consumed much of a key food supply for other fish. Islands that have been transformed from marshlands to farmlands produce less food for delta fish as well. Pesticide runoff harms the fisheries. Operating water pumps alter flows and disrupt natural flow patterns. Hundreds of miles of substandard levees protect islands that have receded to below the Delta water level. If the levees were to fail, Delta islands would be submerged and salt water from San Francisco Bay would result in the loss of a drinkable water supply (http://www.mwdh2o.com/mwdh2o/pages/yourwater/supply/delta/background.html).

The USGS water resources mission is to collect and disseminate reliable, impartial, and timely information that is needed to understand the Nation's water resources. The data collected since 1968, and after 1971 on the *Polaris*, is one of the longest records of water-quality measurement in a United States' bay, and has influenced policies locally and informed scientific research locally and around the world. The USGS has maintained a broad program of multi-disciplinary research studies, both fundamental and applied, in the San Francisco Bay estuary and its watershed. The studies have informed decision-makers on the extent and impact of these changes, and the use of science to mitigate adverse effects. USGS studies often are conducted in cooperation with other Federal, State, and local agencies.

One paper written in 1992 from data collected on the *Polaris*, *Trophic Interactions and Direct Physical Effects Control Phytoplankton Biomass and Production in an Estuary* (Alpine and Cloern) documented a five-time reduction level in primary production and the disappearance of the summer phytoplankton bloom in Suisun Bay following invasion by an Asian clam. The California Regional Water Quality Control Board cited this paper as evidence in its decision to

include exotic species on the 303(d) list of pollutants to the estuary for Total Maximum Daily Load (TMDL). The TMDL is a calculation of maximum amount of a pollutant that a water body can receive and still meet water quality standards. These standards are set by Regional Water Quality Offices in California.

The scientists aboard the Polaris have collected data on zooplankton and other phytoplankton (the base of the food web in estuaries). USGS scientists have also collect large-volume water samples from the San Joaquin River, California, for analysis of pesticides in suspended sediments. Water quality monitoring is one of Polaris' contributions to the CALFED (California state and the Federal agencies) Bay-Delta Ecosystem Restoration Program. USGS scientists have studied the fate of toxic substances that enter the estuary in agricultural and urban runoff and in discharges from municipal wastewater facilities and industries.

The scientific research resulting from data collection efforts aboard the *Polaris* also has provided impetus for California's regulation of ballast discharge by transoceanic ships because of their delivery of nonnative species that have been highly disruptive. The data has been used to develop a relationship between river flow and salinity, used as a salinity standard of the State Water Resources Control Board to protect habitat for native fish. Also, research has been used to change the way selenium (a priority pollutant) is regulated and to mandate reductions in selenium inputs from refineries, and has demonstrated positive responses (elimination of anoxia) in the San Francisco Bay after passage of the Clean Water Act in 1972 (J. Cloern, USGS personal communication 2013).

In addition, the water quality data have been used in dozens of papers, are the basis for a university-level course in coastal hydrology, have been included in international efforts to compile and compare coastal water quality around the globe, have been accessed by numerous non-governmental organizations and other government agencies, and been used to verify numerical models of hydrodynamics and sediment transport and models to project future states of the bay as it responds to global climate change (J. Cloern, USGS personal communication 2013).

The *Polaris* was featured in a PBS NOVA program, "Inside the Golden Gate," filmed in 1974. The vessel has also been featured in National Geographic magazine, Sunset magazine, and various local newspapers and television news programs. In 1995, the vessel was the featured guest at the Festival of the Sea hosted by the National Maritime Museum in San Francisco. The Polaris is a valuable part of the Geological Survey, continuing to provide an efficient scientific platform for the many important studies of the San Francisco Bay ecosystem.

The *R/V Polaris*, originally the *Pasada Manana*, was built for Lee A. Phillips, presumably, in part, to oversee his investment and work in the San Joaquin River Delta starting in 1927. After about a 30-year absence, the vessel returned to San Francisco Bay to continue work in the San Joaquin River; this time as a research vessel for the USGS collecting data and research to understand the changes and effects created, in part, by her original owner, Lee A. Phillips. The *R/V Polaris*, 86 years old, is one of the oldest working vessels in federal service.

9. Major Bibliographical References

Alpine, A.E., and Cloern, J.E., 1992, Trophic interactions and direct physical effects control phytoplankton biomass and production in an estuary: Limnology and Oceanography, v. 37, p. 946-955.

Bessemer Gas Engine Company. "Turning Barren Prairies into Orchards" *The Bessemer Monthly.* February 1914, pg 2.

McGroarty, John Steven. *Los Angeles From the Mountains to the Sea.* Volume II. New York: The American Historical Society, 1921.

Okamoto, Ariel Rubissow and Kathleen M. Wong. *Natural History of San Francisco Bay.* Berkeley, CA: University of California Press, 2011.

Phillips, Lee Allen. Los Angeles-San Joaquin County CA Archives Biographies... August 24, 1871. http://files.usgwarchives.net/ca/losangeles/bios/phillips1024gbs.txt\ Source: *California and Californians*, Vol. IV, Published 1932, pages 58–59, The Lewis Publishing Company.

Richards, Byron. Date Unknown, History of the R/V *Polaris.* USGS Master of the R/V *Polaris* from June 1980 to June 2009.

Thompson, John. "Early Reclamation and Abandonment of the Central Sacramento-San Joaquin Delta," *Sacramento History Journal.* Volume 6 (2006), pages 41-72.

A Mission To Explore San Francisco Bay, USGS PowerPoint Presentation, date unknown, USGS, Menlo Park, CA.

Conversation with Master Joel Fritsch and Chief Engineer Scott Conard, September 2012.

USGS *A Short History of the Research Vessel Polaris,* http://sfbay.wr.usgs.gov/access/wqdata/overview/measure/polaris.html

"Many Men Make Great Success at Raising Succulent Spud," *San Jose Evening News,* January 22, 1907, pg 3.

Marine Technology Society. "Man's extension into the sea: transactions of the joint symposium, January 11–12, 1966, Washington, D.C." Washington, D.C.: Marine Technology Society, 1966.

The Metropolitan Water District of Southern California, Sacramento-San Joaquin Delta, History/Background, http://www.mwdh2o.com/mwdh2o/pages/yourwater/supply/delta/background.html, accessed 09/21/2013

No Author. "New Sixty-Five-Foot Cruiser 'Pasado Manana.'" *Pacific Motor Boat.* Volume 13 (October 1920): pages 36-7.

No Author. *Historic Los Angeles: Berkeley Square, Resurrecting a West Adams Street Lost to the Freeway.* 2011. [Available online at http://www.berkeleysquarelosangeles.com.]

"$11,000,000 Merger Joins Rock Plants," *San Diego Union*, February 16, 1929, pg. 5.

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
_X_ Federal agency
____ Local government
____ University
_X_ Other
Name of repository: ____on-line journals_____

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acreage of Property less than 1 acre

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates
Datum if other than WGS84:

1. Latitude:	Longitude:	
2. Latitude:	Longitude:	
3. Latitude:	Longitude:	
4. Latitude:	Longitude:	

Or
UTM References
Datum (indicated on USGS map):

[ ] NAD 1927 or [x] NAD 1983

1. Zone:	Easting:	569687.425	Northing: 4151468.701
2. Zone:	Easting:		Northing:
3. Zone:	Easting:		Northing:
4. Zone:	Easting :		Northing:

Verbal Boundary Description

The boundary is the exterior surfaces of the vessel.

Boundary Justification

Boundary was selected to encompass the vessel in total.

11. Form Prepared By

Name/Title: Jayne Aaron/Architectural Historian and Chris Baker/Historian
organization: Aarcher, Inc.
street & number: 88 Inverness Circle E, Suite 1-106
city or town: Englewood state: CO zip code: 80112
e-mail jaaron@aarcherinc.com and cbaker@aarcherinc.com
telephone: 410.897.9100

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, THPO, or FPO for any additional items.)

Additional Documentation: **Sketch Map/Photo Key**

R/V POLARIS
Name of Property

San Mateo, California
County and State

Additional Documentation: USGS Map

R/V POLARIS
Name of Property

San Mateo, California
County and State

USGS 7.5' Redwood Point, California
Topographic Quadrangle
USS Polaris
Redwood City, California

0 0.1 0.2 0.4 0.6 0.8 Miles

Topographic Map Source:
USGA Geospatcial Data Gateway
Projection: NAD 83
Datum: UTM Zone 10 N

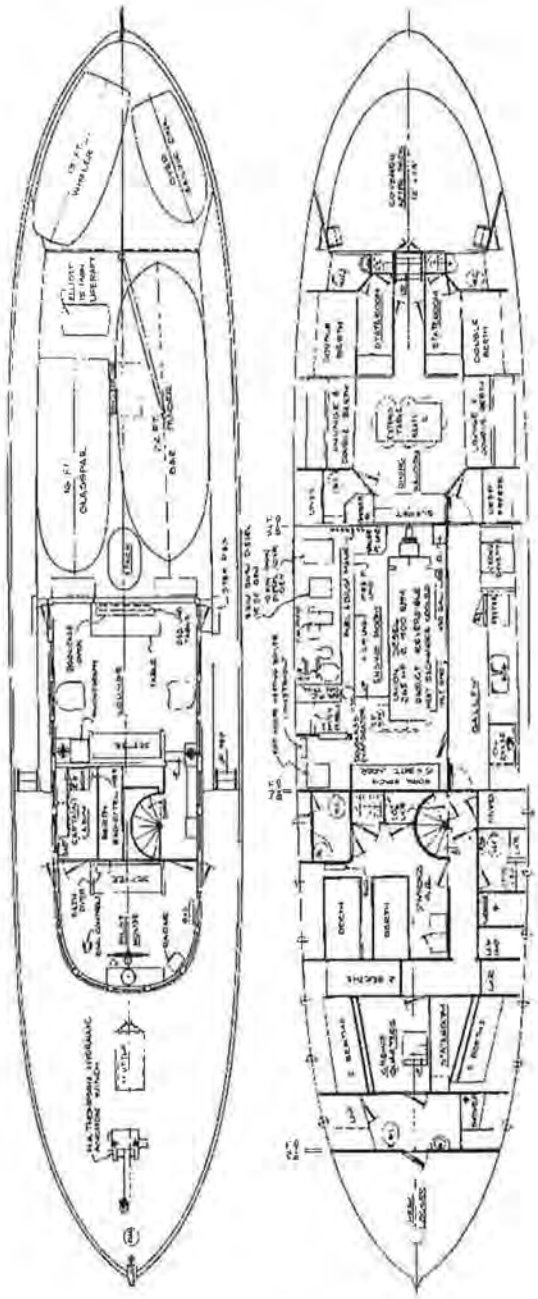


Figure 1. Layout of POLARIS, date unknown

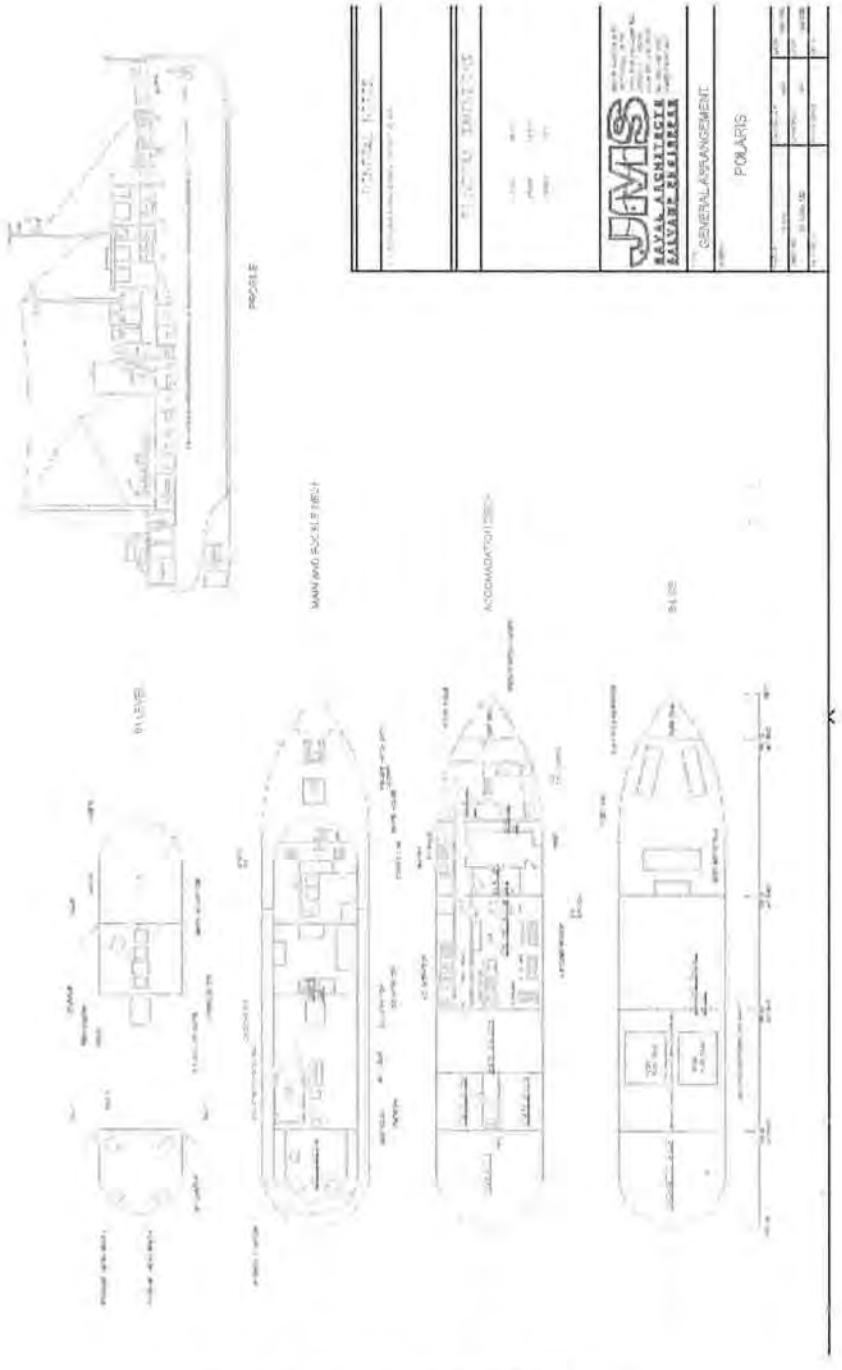


Figure 2. Layout of POLARIS 2003

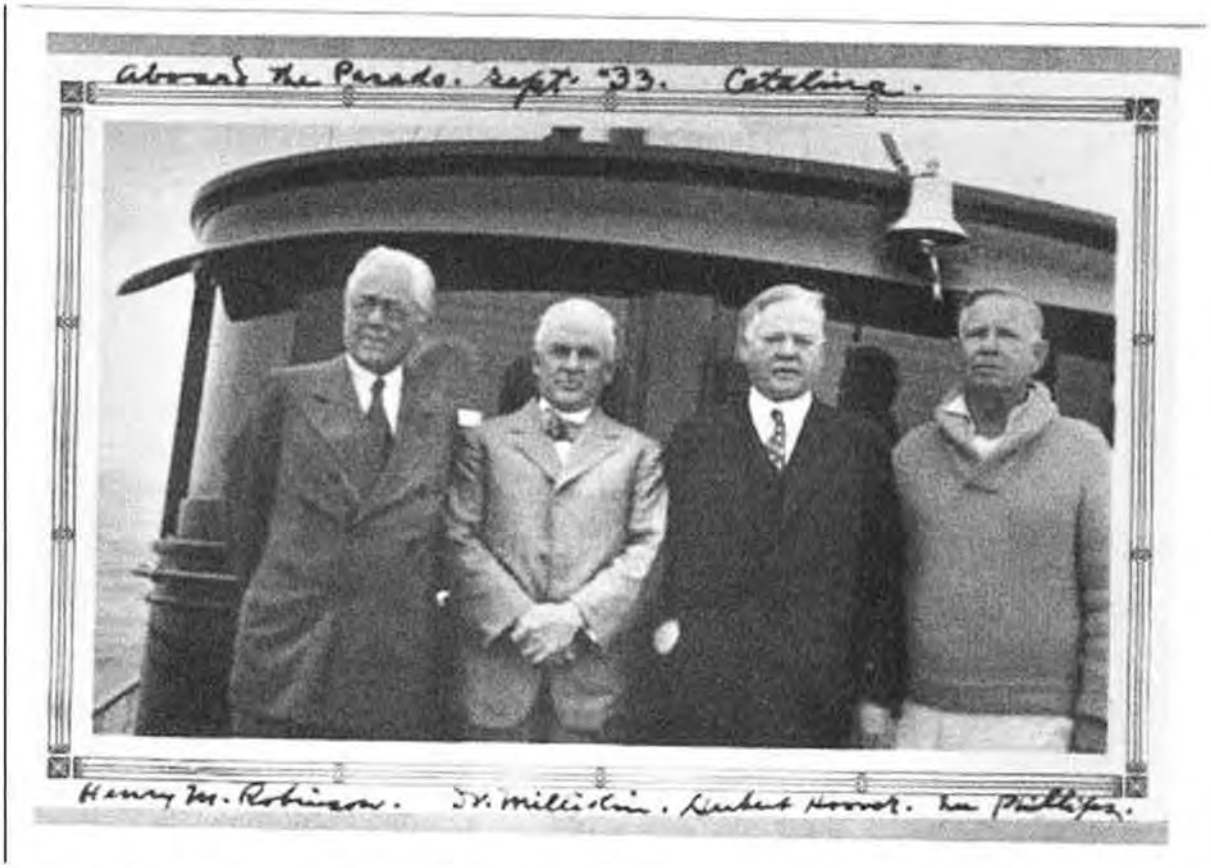


Figure 3. PASADA MANANA September 1933. Herbert Hoover second from right Lee Phillips on right.

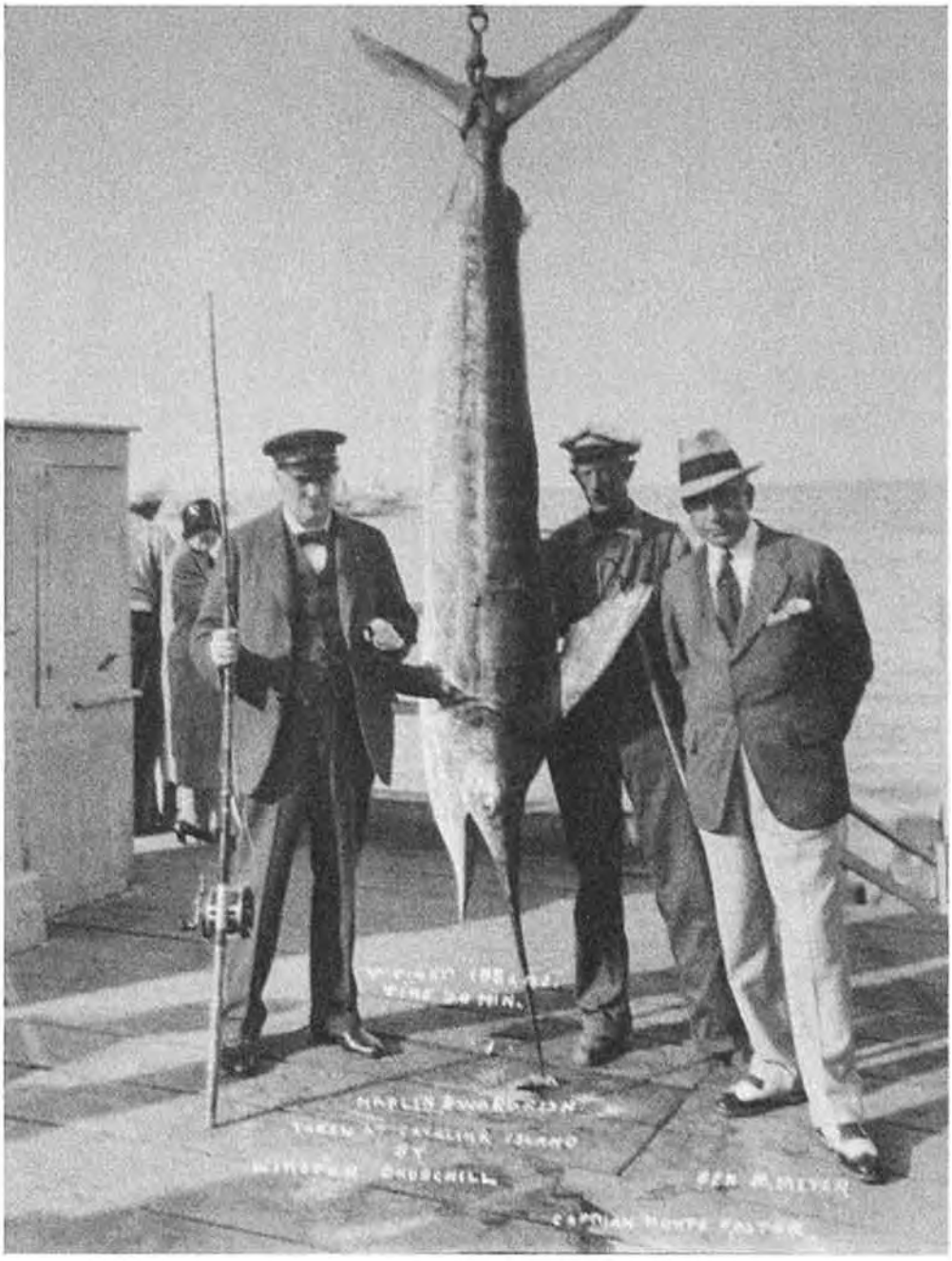
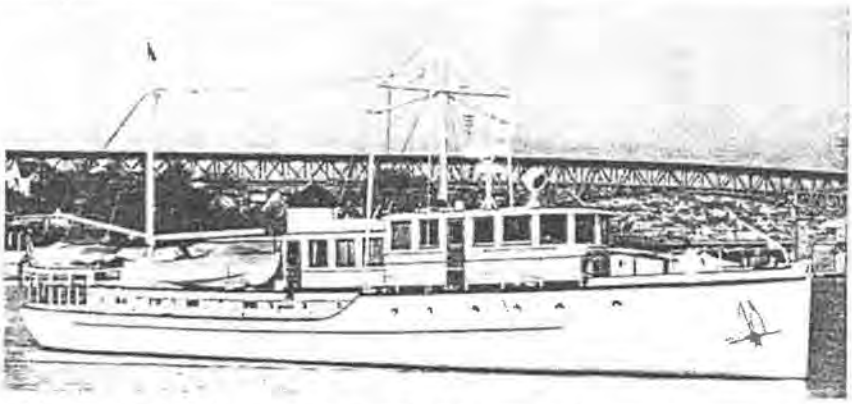


Figure 4. Winston Churchill on the PASADA MANANA, in 1929

"YACHTING" - JAN-1963



For Sale—One of the best of the West Coast Type of Offshore diesel cruisers. From Alaska to Panama she has proven to be a most comfortable Blue Water home afloat. Powered with a 1959 direct reversible 6 cylinder Union Diesel she makes an honest and economical 10 knots. Has 4 double staterooms, 5 toilet rooms and 2 showers for owners and guests. Adequate crew quarters. Oil stove, deepfreeze, excellent electronic gear including Radar. Recently surveyed and maintained in top condition. An ideal yacht for exploring Mexico and Alaska. Dimensions 96'x20'x9.5'.

Shown by appt. thru GEORGE MICHAUD CO., Newport Beach, Calif.
ORiole 5-0915—Cable address: Yachtsales or thru Captain
J. I. McDonald, 7533 27th Avenue N.W., Seattle 7, Washington

Figure 5. Ad in 1963 Yachting magazine

Figure 6. Main Saloon Looking forward, date unknown

Figure 7. Main Saloon Looking forward, date unknown

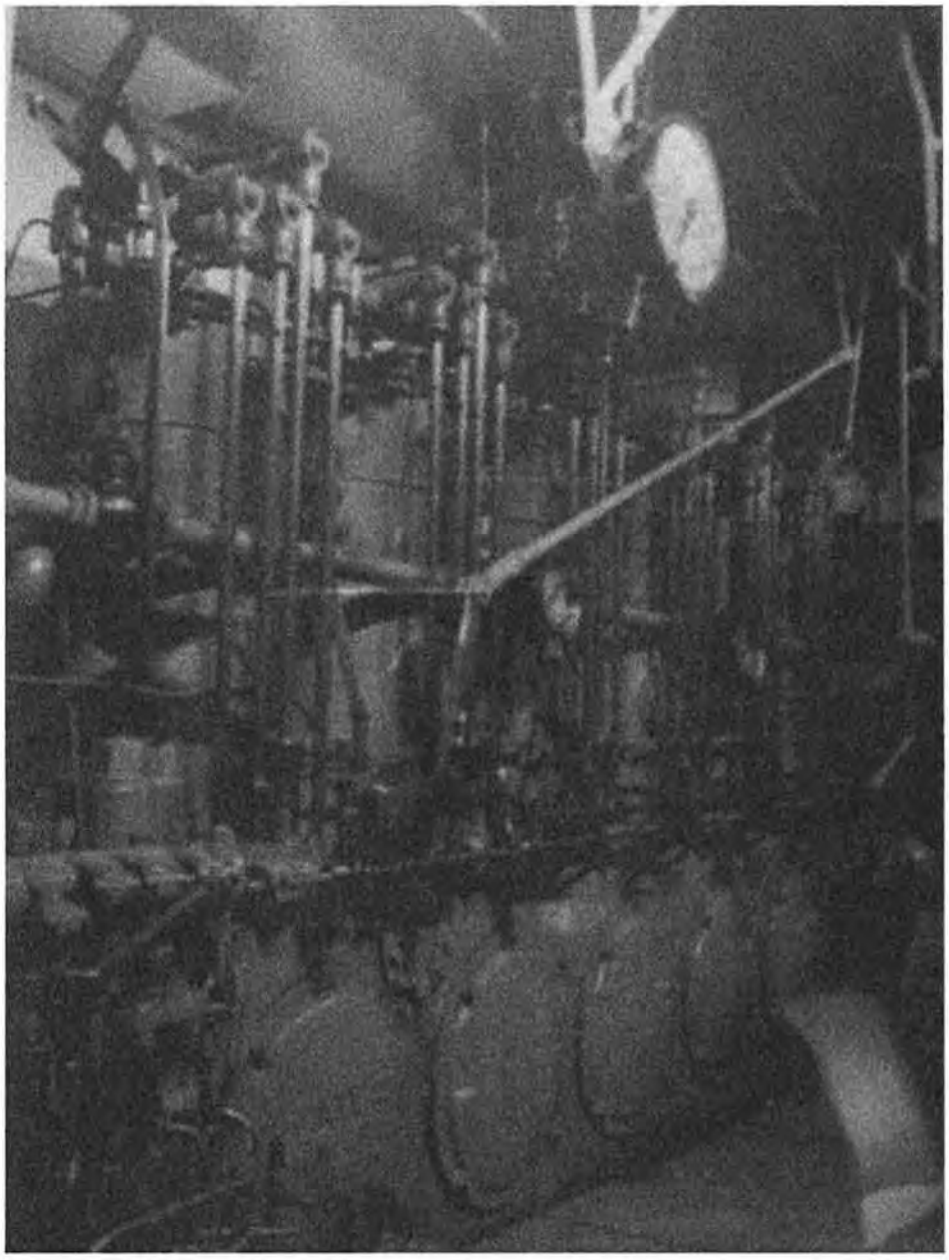


Figure 8. Engine Room, date unknown

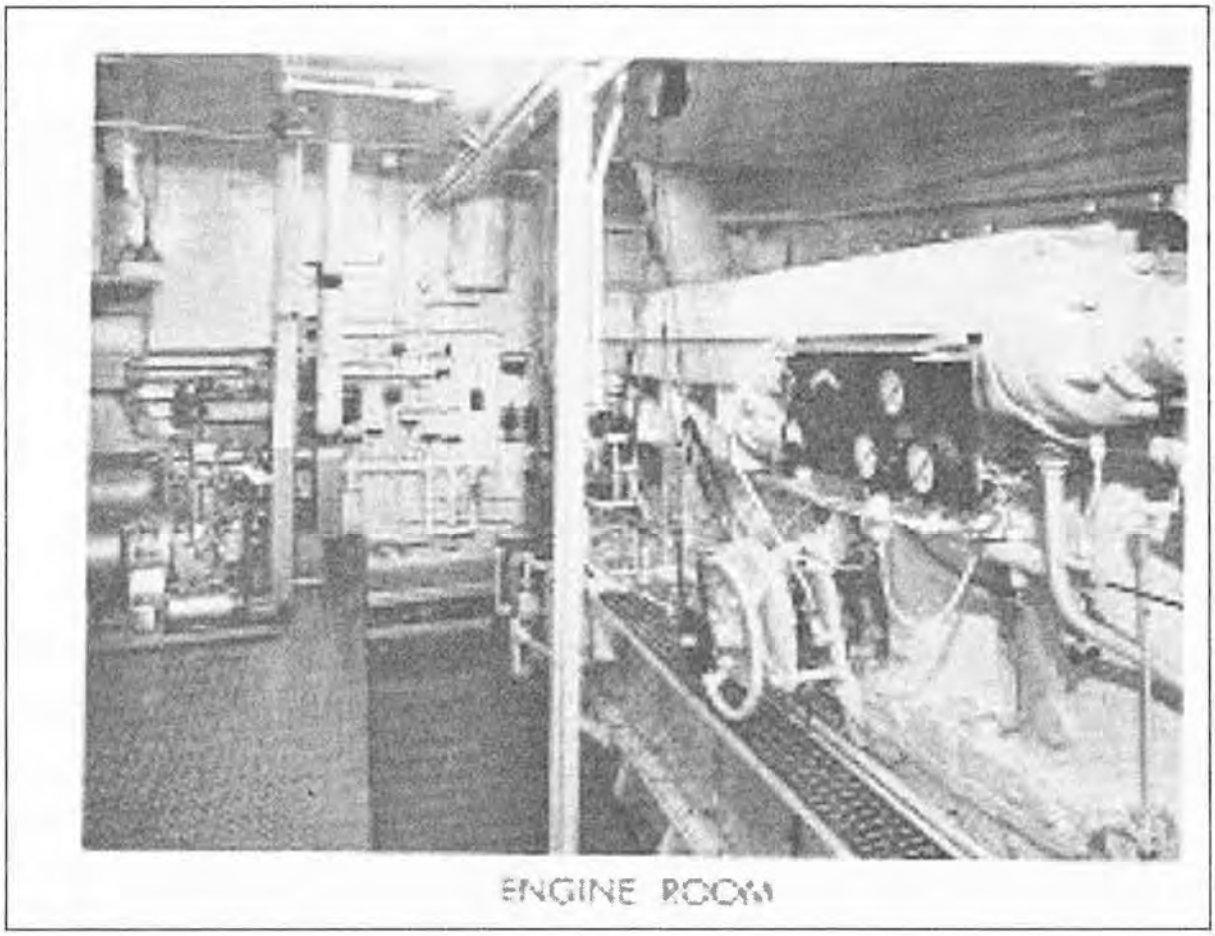


Figure 9. Engine Room, date unknown

Figure 10. Smoking Saloon Looking forward, date unknown

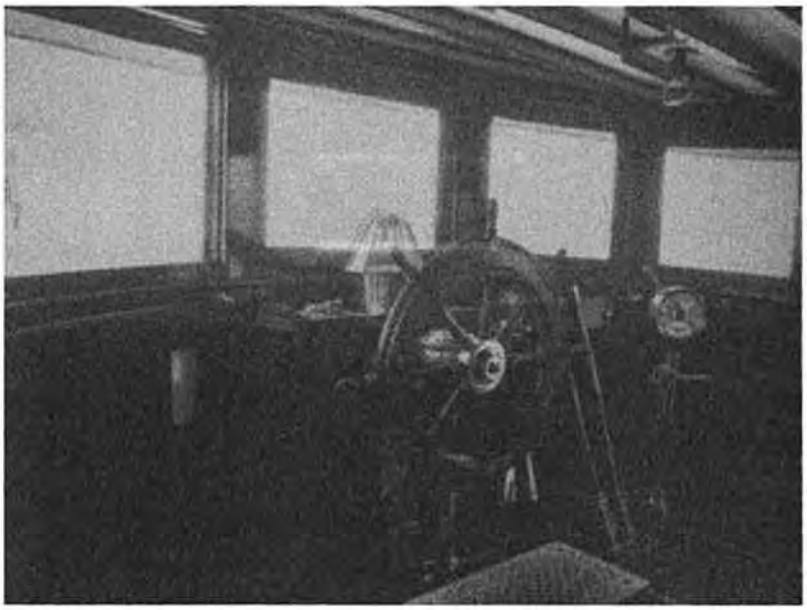


Figure 11. Pilot House, Looking forward, date unknown

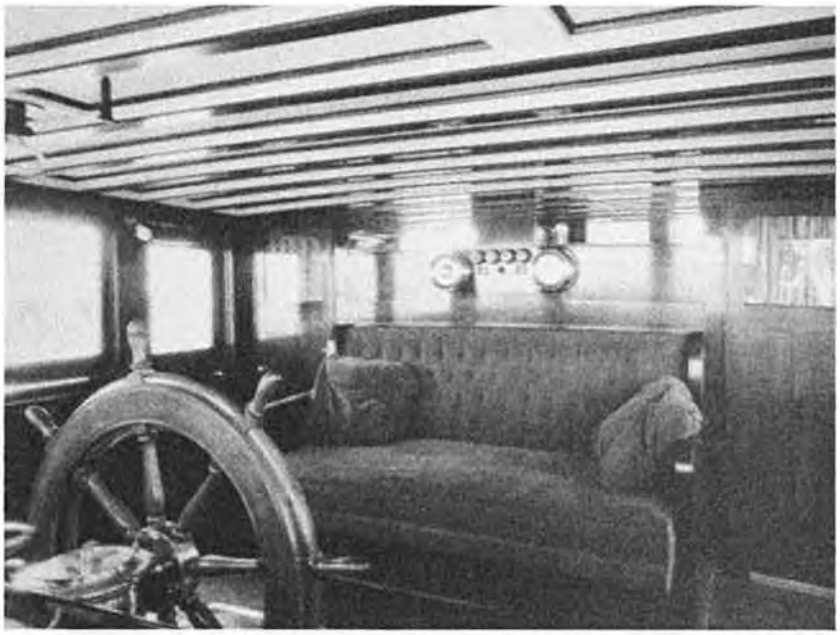


Figure 12. Pilot House, Looking aft, date unknown

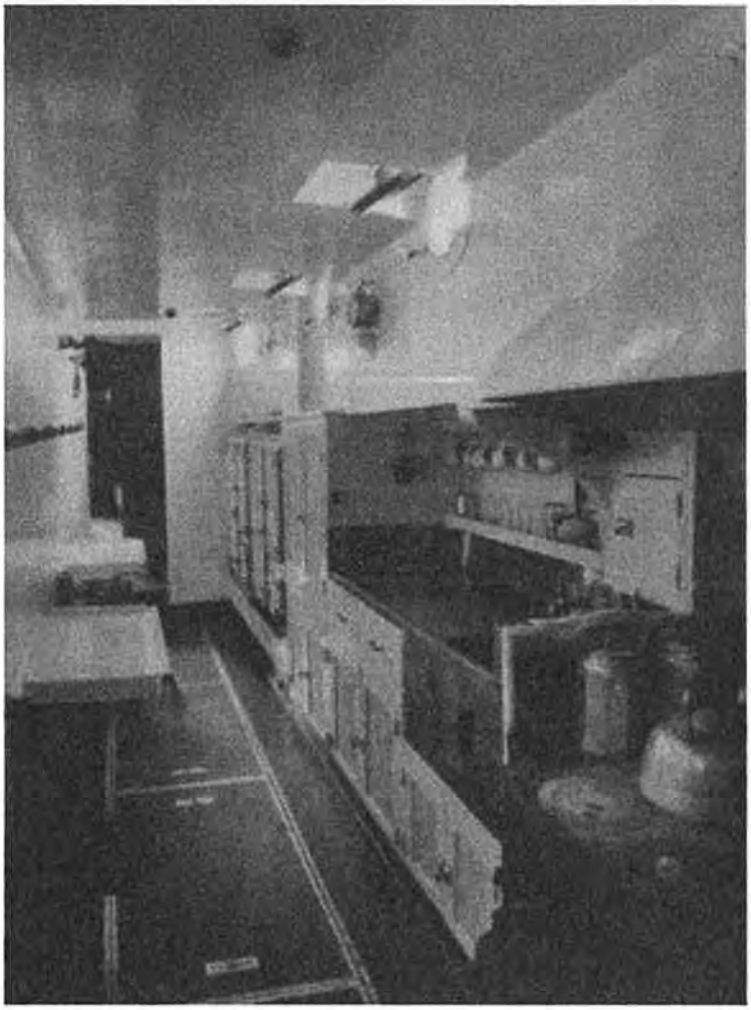


Figure 13. Galley kitchen, looking aft, date unknown

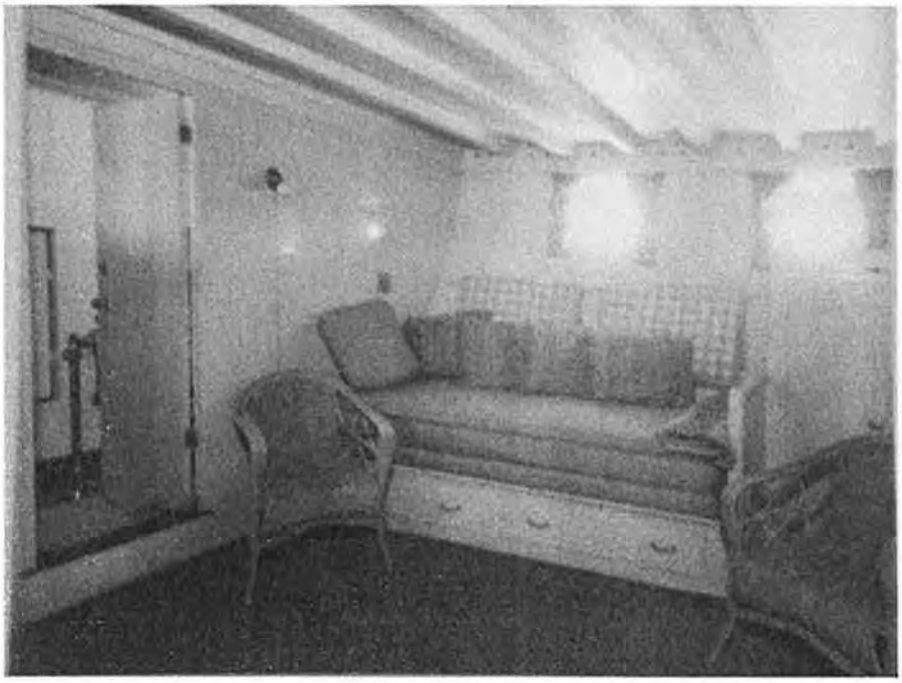


Figure 14. Forward berth, starboard side, date unknown

Figure 15. Owner's berth, starboard side, date unknown

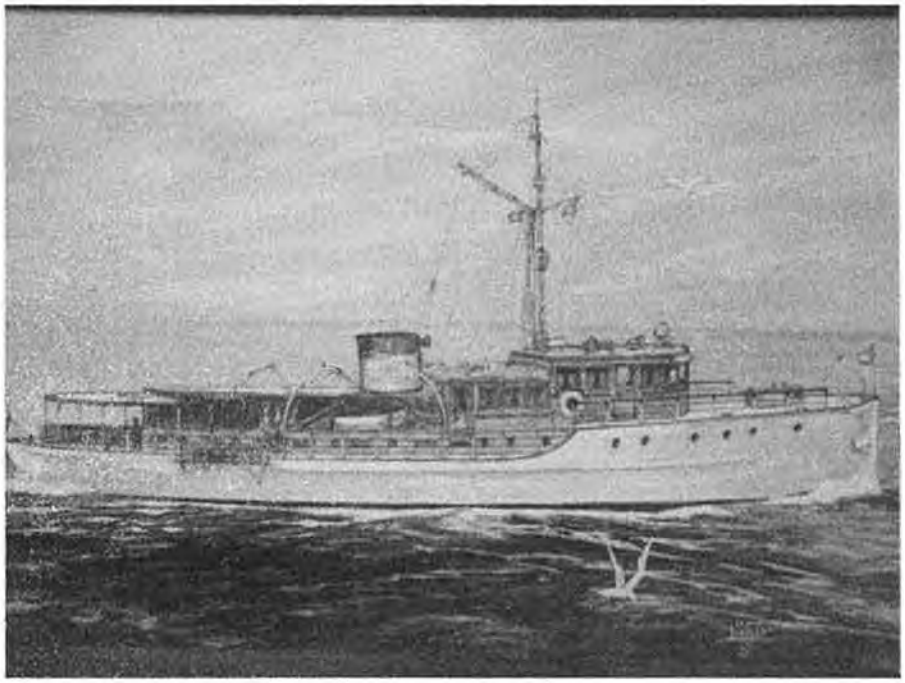


Figure 16. Drawing of PASADA MANANA, date unknown

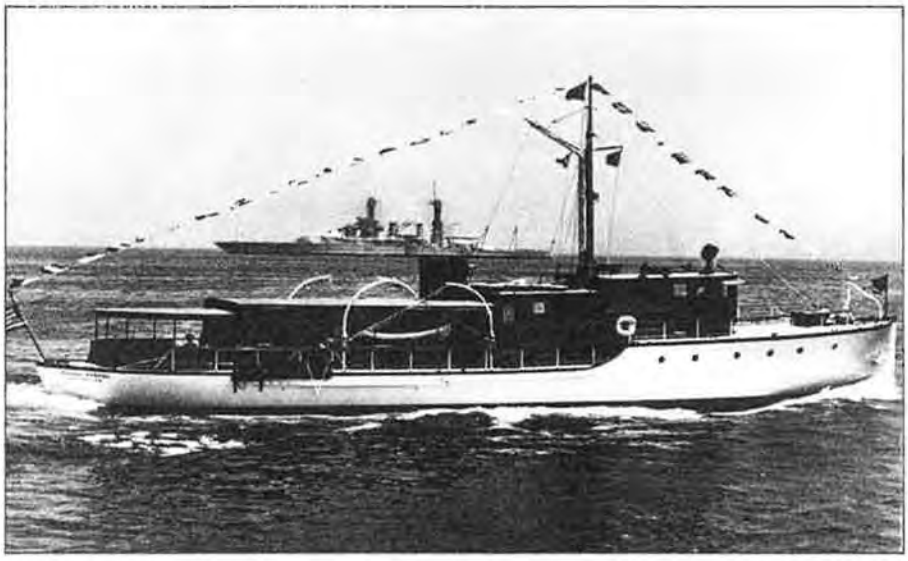


Figure 17. PASADA MANANA, date unknown

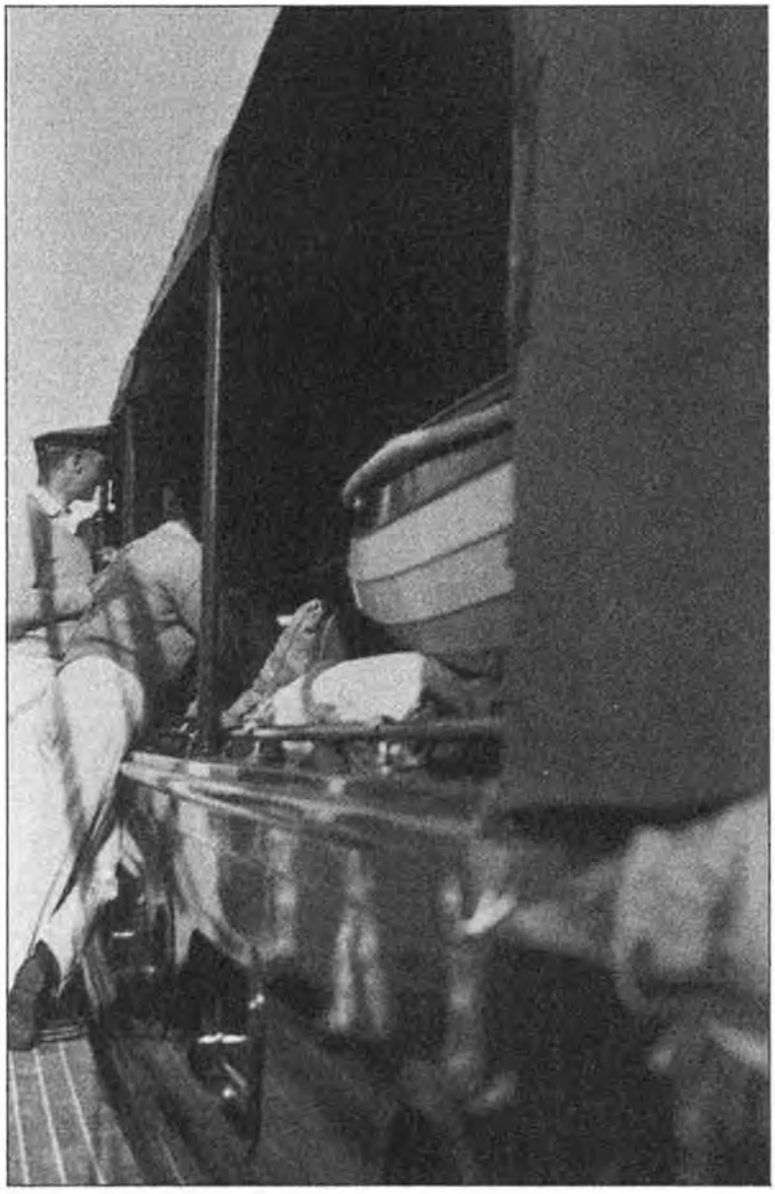


Figure 18. PASADA MANANA, starboard side showing covered foscle deck date unknown

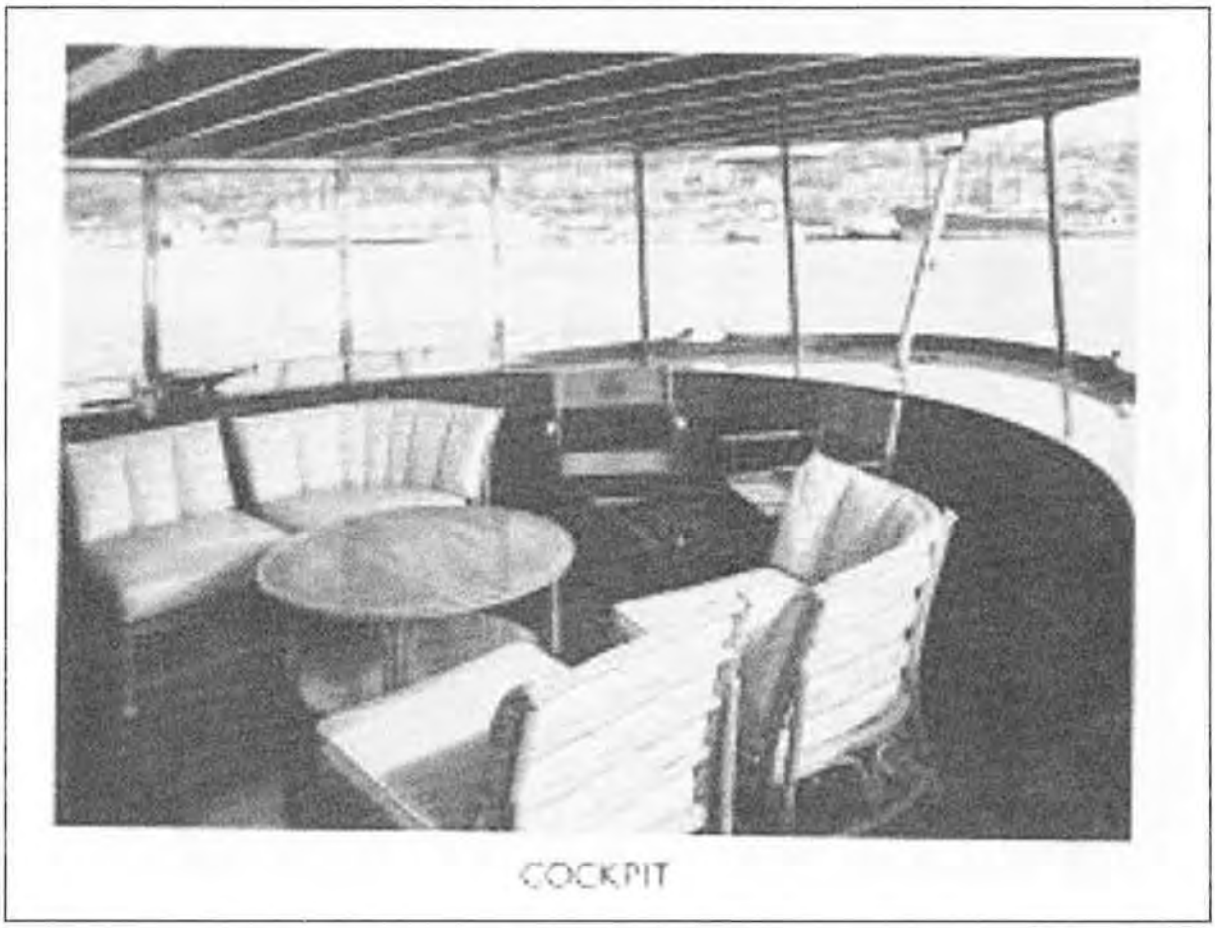


Figure 19. PASADA MANANA, Looking aft, date unknown

Figure 20. POLARIS dry docked for maintenance, date unknown

Figure 21. POLARIS underway, port side, date unknown

Name of Property: R/V POLARIS

City or Vicinity: Redwood City

County: San Mateo State: California

Photographer: Jayne Aaron

Date Photographed: 10/23/2012

Pilothouse, looking forward (northeast)

1 of 29

Pilothouse, looking aft (southwest)

2 of 29

Cabin's Quarters, looking aft (south)

3 of 29

Forward berth, starboard side, looking forward (northeast)

Forward berth, port side, looking forward (northwest)

Lower lab, formerly owner's berth, starboard side, looking forward (northeast)

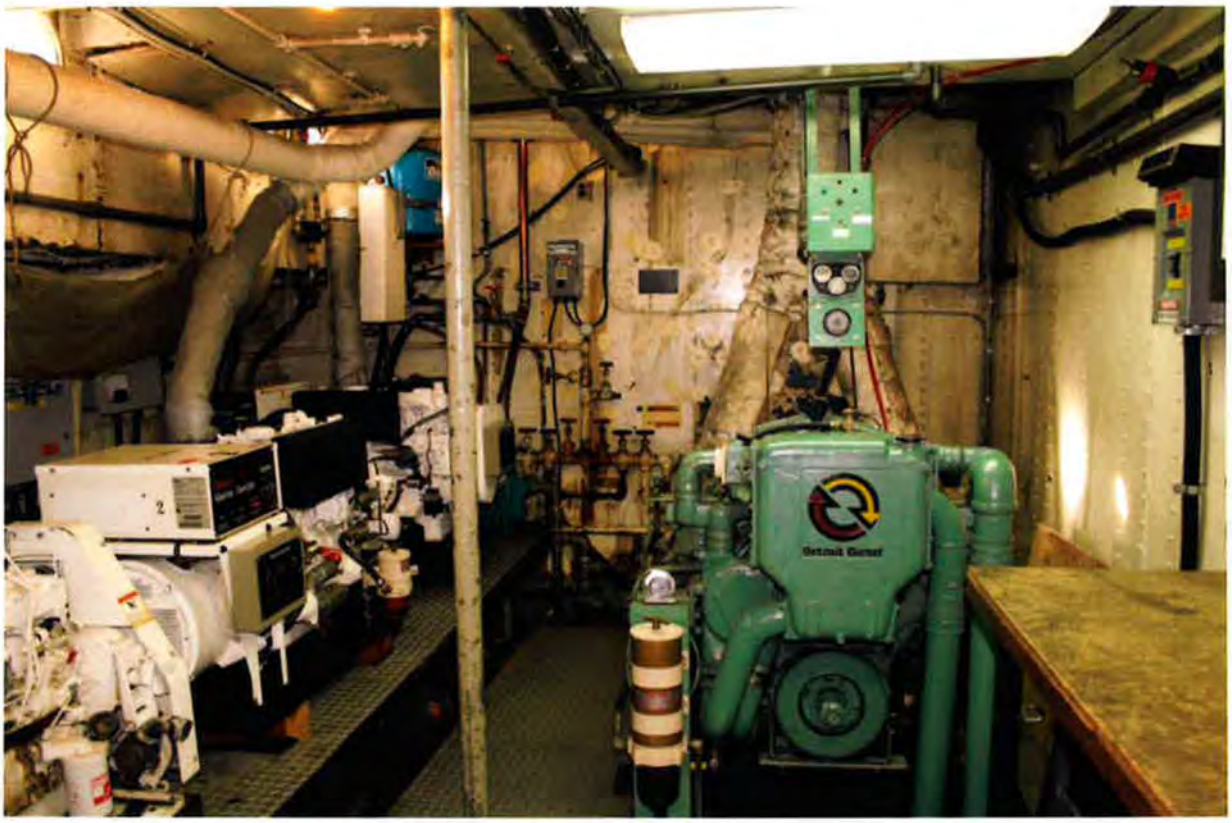
6 of 29

Lower lab head, formerly owner's head, starboard side, looking aft (southeast)

Lower head, port side, looking portside (west)

Bottom of spiral stair, looking starboard (southeast)

Galley kitchen, port side, looking aft (south)



Engine room, starboard side, looking aft (south)

11 of 29

Icebox, port side, looking port side (west)

Main saloon, starboard side, looking aft (southeast)

13 of 29

Main saloon, starboard side, looking forward (northeast)

14 of 29

Rear berth, starboard side, looking forward (northeast)

Rear cockpit, looking aft (southwest)

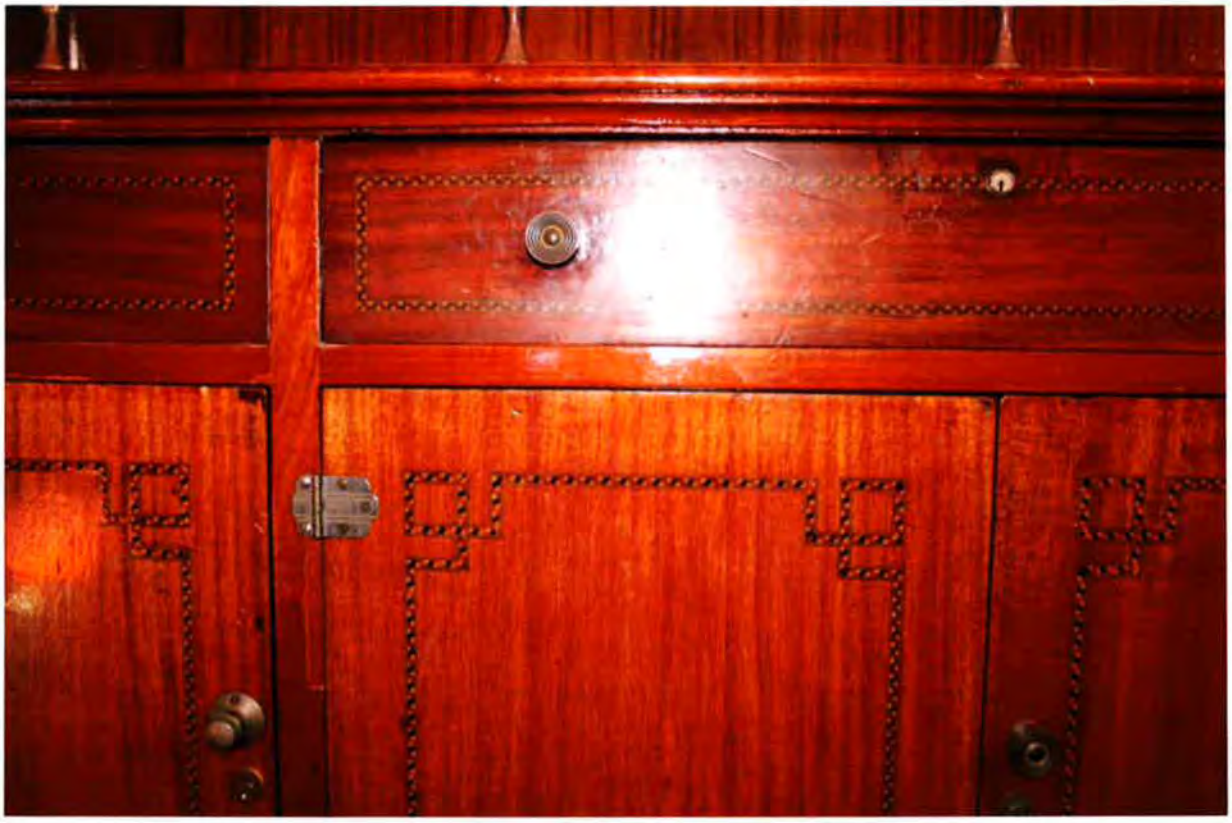
16 of 29

Rear cockpit, looking forward (northwest)

17 of 29

Rear cockpit, brass drain detail looking aft (southwest)

18 of 29



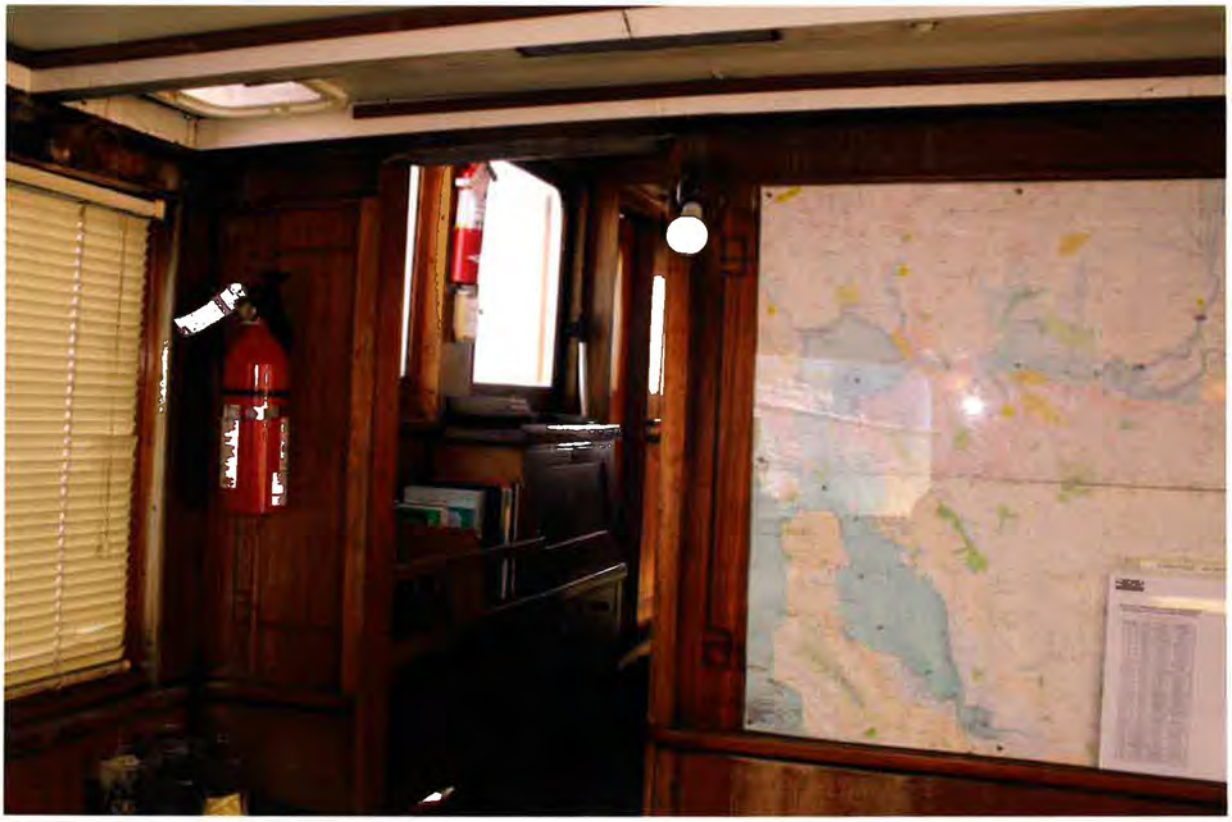
Main saloon, inlay detail on built-in cabinet, looking forward (north)

19 of 29

Breezeway from pilothouse to upper lab, formerly captain's berth, port side, looking aft (southeast)

Upper lab, formerly smoking salon, looking aft (southeast)

21 of 29



Upper lab, formerly smoking saloon, door cut through into former captain's berth, looking forward (northwest)

22 of 29

Exterior pilothouse, looking aft (south)

23 of 29

Port side main deck exterior, rail, window, and deck details, looking aft (south)

Exterior of upper lab and pilot house, starboard side, looking northwest

25 of 29

Starboard bow, looking aft (southwest)

Starboard quarter and stern, looking forward (northwest)

Interior Port light detail, main saloon, starboard side (east)

28 of 29

R/V POLARIS docked at Redwood City, California looking south

29 of 29

R/V POLARIS docked on the Sacramento River at Rio Vista, California looking east

Additional Photograph

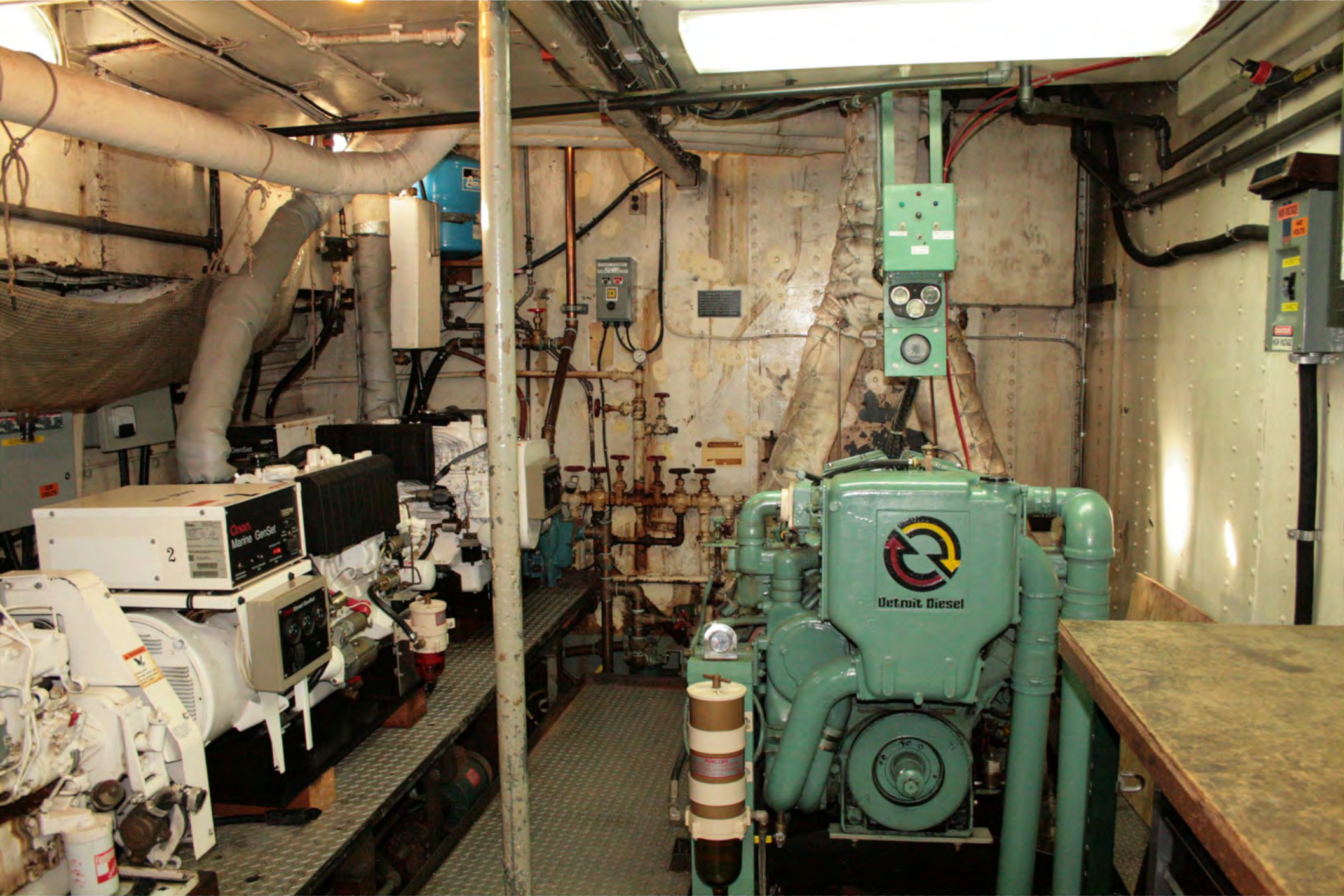

GARMIN


USGS


VOLARIS


POLARIS
POLARIS


NO
SMOKING


Onan
Marine GenSet
2
Detroit Diesel

FIRE

LIFE PRESERVERS

8 ADULT | CHILD


AutoPulse IQ-301
ANSUL
FIRE
GENERAL ALARM
WHEN EMERGENCY
ALARM SIGNAL RINGS
GO TO YOUR STATION


USGS


USGS


FIRE
HOSE
KEEP CLEAR


POLARIS


POLARIS
POLARIS


GRYPHON


POLARIS
POLARIS
WELCOME
TO
CHULA VISTA CITY DOCK
HOME OF THE BASS DERBY
FESTIVAL

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: POLARIS (research vessel)

MULTIPLE NAME:

STATE & COUNTY: CALIFORNIA, San Mateo

DATE RECEIVED: 2/06/15 DATE OF PENDING LIST: 3/05/15
DATE OF 16TH DAY: 3/20/15 DATE OF 45TH DAY: 3/24/15
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 15000100

REASONS FOR REVIEW:

APPEAL:	N	DATA PROBLEM:	N	LANDSCAPE:	N	LESS THAN 50 YEARS:	Y
OTHER:	N	PDIL:	N	PERIOD:	N	PROGRAM UNAPPROVED:	N
REQUEST:	Y	SAMPLE:	N	SLR DRAFT:	N	NATIONAL:	N

COMMENT WAIVER: N

___ACCEPT ___RETURN ___REJECT _____DATE

ABSTRACT/SUMMARY COMMENTS:

SEE ATTACHED

The Research Vessel *POLARIS* is of exceptional significance at the statewide level under National Register Criteria A and C in the areas of Maritime History, Recreation /Entertainment, Science, and Architecture (Maritime Architecture). Built by the Wilmington Boat Works for influential businessman and reclamation advocate Lee Allen Phillips in 1927, the Research Vessel *POLARIS* (originally christened the *Pasada Manana*) was a luxuriously appointed, wood-hulled pleasure yacht. Reflecting the prosperity of its owner and the extravagance of the times, the richly detailed boat served as both business instrument and pleasure craft within California's inter-coastal waterways. The *POLARIS* would have a second life and second significant historic association in the post-World War II era as an important scientific government research vessel.

RECOM./CRITERIA Accept Criteria A+C

REVIEWER Paul Lusignan DISCIPLINE Historian

TELEPHONE _____ DATE 3/24/15

DOCUMENTATION see attached comments (Y)N see attached SLR (Y)N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

August 27, 2013

Reply in Reference To: USGS_2013_0712_001

Cynthia L. Brown
Assistant Chief, National Research Program, Western Branch
U.S. Geological Survey
345 Middlefield Road, MS 466
Menlo Park, CA 94025

RE: Section 106 Consultation for National Register Eligibility Determination for *Research Vessel Polaris*, San Francisco County

Dear Ms. Brown:

Thank you for initiating consultation regarding the United States Geological Survey's (USGS) efforts to comply with Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended, and its implementing regulation found at 36 CFR Part 800.

In their efforts to identify historic properties within their ownership and pursuant to 36 CFR Part 800.4, the USGS has submitted an evaluation of research vessel (R/V) *Polaris* using National Register (NRHP) criteria. Based on these evaluation efforts the USGS has determined the *RV Polaris* eligible for NRHP inclusion under Criteria A at the local level of significance for its contribution to studies of the San Francisco Bay. Constructed in 1927 as the *Pasada Manana*, the R/V Polaris was originally a pleasure craft that was ultimately acquired by the USGS from the United States Army in 1962. The USGS has yet to formally define the vessel's period of significance.

It is my understanding that while the USGS plan to remove the *R/V Polaris* from active service they have yet to formally determine how this will be accomplished and that upon providing public notification and exploring all reasonable alternatives to disposal they will notify CA SHPO of their proposed course of action. Should the USGS ultimately decide to transfer this historic property out of federal ownership such an action may constitute an adverse effect to historic properties pursuant to 36 CFR Part 800.5(d)(2) rendering it necessary to develop a memorandum of agreement between our agencies pursuant to 36 CFR Part 800.6.

CA SHPO concurs with the USGS determination that the *RV Polaris* is eligible for NRHP inclusion and looks forward to continuing this consultation with the USGS. Thank you for seeking my comments and considering historic properties as part of your project planning. If you have any questions or concerns, please contact Ed Carroll of my staff at (916) 445-7006/Ed.Carroll@parks.ca.gov.

Sincerely,

Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, PhD
State Historic Preservation Officer

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY
Edmund G. Brown JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street Suite 100
SACRAMENTO, CA 94296-0001
(916) 445-7000 Fax: (916) 445-7053
calshpo@ohp.parks.ca.gov

February 5, 2015

J. Paul Loether
National Register of Historic Places
National Park Service 2280
1201 I (Eye) Street, NW, 8th Floor
Washington, DC 20005

Subject: **Research Vessel *Polaris* National Register of Historic Places Nomination**

Dear Mr. Loether:

Enclosed please find the **Research Vessel *Polaris*** Federal nomination to the National Register of Historic Places. Per Code of Federal Regulations 36 Part 60(c) I am providing my comments regarding the adequacy of the nomination, the significance of the property, and its eligibility for the National Register. Currently owned by the United States Geographical Survey, *Polaris* was originally constructed as the *Pasada Manana* in 1927 by businessman Lee A. Phillips. Phillips used the yacht for pleasure and to manage his reclamation projects and agricultural holdings in the Sacramento-San Joaquin Delta. Polaris's length is 96 feet, her beam measures 20 feet, and her draft is 8-feet. Although she is registered in Redwood City, *Polaris* is often working on the Sacramento and San Joaquin Rivers near Rio Vista.

In my opinion *Polaris* is significant under Criterion A for association with the early Twentieth Century reclamation and agriculture in the Sacramento-San Joaquin River Delta (Delta). *Polaris* continues to monitor water quality in the Delta, considered by biologists and water policy experts to be the core of California's statewide water system. Because of her later, exceptional role in researching the effects of the 1964 Alaska Earthquake, mitigation work after the 1969 Santa Barbara Oil Spill, and the ongoing measuring and monitoring of water quality in San Francisco Bay and the Delta for nearly fifty years from1966 to the present, *Polaris* meets Criteria Consideration G, and represents an aspect of the history of the state as a whole.

Under Criterion C *Polaris* embodies the distinctive characteristics of pleasure motor yachts of the early Twentieth Century. *Polaris* retains sufficient character defining features from her original construction to convey her significance under Criterion C. The period of significance under Criterion C is 1927. Although a draft nomination was signed by the USGS, I have sent a copy of the final nomination to the USGS for that agency FPO's signature. If you have questions please contact Jay Correia of my staff at 916-445-7008 or jay.correia@parks.ca.gov.

Sincerely,

Carol Roland-Nawi, Ph.D.
State Historic Preservation Officer

Enclosures