

GILLNET BOAT ALKI II
(Official Number 605350)
243 East Birnie Slough Road, Puget Island
Cathlamet vicinity
Wahkiakum County
Washington

HAER WA-217
HAER WA-217

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

GILLNET FISHING VESSEL *ALKI II*

HAER No. WA-217

Location: Puget Island, near Cathlamet, Wahkiakum County, Washington

Rig/Type of Craft: Gillnet Fishing Vessel

Trade: Commercial Fishing

Official Number: 605350

Principal Measurements: Length (oa): 27'-0"
Beam: 8'-8"
Hull Depth: 4'-2"
Draft: 1'-6"
Displacement: unknown
Gross registered tonnage: 7
Net registered tonnage: 6
Service speed: 35 knots
(The listed dimensions are current, but it should be noted that draft, displacement, and tonnages were subject to alterations to trim as well as variations in measurement.)

Propulsion: Chevrolet Vortec V-8 (350 HP) with Volvo Penta 290 outdrive

Date of Construction: 1972

Original Owner: Robert Wegdahl, Cathlamet, WA

Present Owner: Fred Ostling, Puget Island, near Cathlamet, WA

Disposition: Working gillnet boat

Significance: Part of an ongoing project to document the evolution of the Columbia River gillnet boat, *Alki II* is an example of a fiberglass bowreeler with a high-power V-8 engine (category 8 in Historical Context section below).

Alki II represents the transition from traditional wood hull gillnet boats to the more modern fiberglass hull and a change in boat building: rather than build gillnet boats from the keel up, boat builders began to acquire commercially cast fiberglass hulls and then build the specific deck

configurations as dictated by the fishery and the boat owner. Early fiberglass boats, such as *Alki II*, have cabin access through a small aft cockpit, a configuration popular in the earlier wooden gillnet boats.

**Project
Information:**

This project is part of an ongoing effort to locate, identify, and document the most important traditional boats of the lower Columbia River region. During the summers of 2010, 2011 and 2012 a team composed of Clatsop Community College (CCC) students and faculty, Columbia River Maritime Museum (CRMM) volunteers and Historic American Engineering Record (HAER) interns documented boats representing the evolution of Columbia River Gillnet boat (including Bristol Bay boats built in the lower Columbia region).

In addition to inclusion in the HAER collection, the documentation produced will be used for future research and possible inclusion in CRMM exhibits. This project fits into a CRMM/CCC partnership to develop a regional documentation center affiliated with the National Park Service. The primary consultant is Todd Croteau, HAER Maritime Program Coordinator.

The project coordinator is Lucien Swerdloff, Coordinator, Historic Preservation and Computer Aided Design Programs, Clatsop Community College. Project support was provided by Sam Johnson, Director, Columbia River Maritime Museum. Data collection, 3D modeling and drawings were done by Joseph Wessinger, HAER intern, Brian Nice, CCC Historic Preservation Program, Gary Trenner II and Adam Dreke, CCC CAD Program, and Paul Putkey. Research and documentation were done by Earl Reynolds, CRMM volunteer, and Bruce Weilepp.

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PART I: HISTORICAL INFORMATION

A. Physical History:

1. Date of Construction: 1972

2. Designer: Cabin and decks designed by Gary Viukala, Beaver Valley Boat Works, Clatskanie, Oregon.

3. Builder: Gary Viukala, Beaver Valley Boat Works, Clatskanie, Oregon. Snowball Industries hull cast in Fife, Washington.

4. Original Plans: Unavailable, but the boat is configured as it was originally constructed.

5. Modifications: *Alki II* was originally outfitted with a Volvo Penta inboard motor (270 HP) with a Berkeley Pump propulsion unit. The water jet unit was used in an effort to prevent fouling the nets in the outdrive when retrieving. The owner decided that the Volvo engine was not providing enough power through the water jet outdrive so the “pumper” unit was replaced with a Volvo Penta 290 outdrive lower end with a standard screw propeller. The boat was operated with that equipment until the end of the salmon gillnet season in 2011, when the well-used Volvo Engine was replaced with a new Chevrolet Vortec (350 HP) engine. The Volvo Penta outdrive was retained. During the refurbish in 2011, the deteriorating fore-deck boards were replaced and modifications made to lower the well-deck in the vicinity of the net reel. These modifications lowered the hydraulic net reel, giving the operator more working space on the fore-deck and setting the reel at a more comfortable working height. Other major physical features were unchanged. This work was done by Dick Stevenson. The new layout gives the operator more room, and the new stainless steel fish slide allows for more efficient fish handling. Fish picked from the net at the fairlead in the bows can now be chuted to the fish box aft of the net reel, rather than carried and placed in the box by hand.

6. Names: The original owner named the boat *Slim Pick'ns* in an apparent reference to the hard work involved in making a living with a gillnet boat. When Fred Ostling purchased the boat, he renamed it *Alki II* after his first gillnet boat, *Alki*. *Alki* is a reference to Alki Point Coast Guard Station in California, where Fred was stationed in the Coast Guard.

B. Historical Context: The use of gillnets in the Pacific salmon fisheries began in the mid nineteenth century and continues to the present.¹ Gillnets consist of vertically suspended panels of netting that entangle fish as they attempt to swim through. Different mesh sizes are used for different size fish. Set nets (stationary) are used only in Alaska and in Oregon and Washington tribal treaty fisheries. Drift nets (mobile) are used in commercial fisheries. There are a variety of different types of gillnets: floater nets hang from floats in the water and have weights at the bottom allowing their height to be adjusted; diver nets drift along the river bottom; trammel nets have multiple layers of netting that trap fish in between.²

Over the 150 year history of the salmon fishery, boats evolved from wooden sailing vessels to modern aluminum and fiberglass boats. As technology and methods changed, several major

¹ Gillnets are used throughout the United States in both ocean and inland waters for a variety of fish species. On the Columbia River they are used for salmon, sturgeon, shad, and smelt.

² Irene Martin, *Legacy and Testament: The Story of the Columbia River Gillnetter* (Pullman: Washington State University Press, 1994).

types of gillnet boats can be identified. Hull shapes changed due to local sea conditions, increasing competition and availability of building materials. For example, flat-bottomed boats were used where conditions allowed and material was limited and round-bottomed boats were necessary when competition forced fishing in deeper waters. Boat designs were modified to accommodate one-man instead of two-man crews, when sailing vessels were converted to power, when more powerful engines became available, and to support bowpicker or sternpicker configurations.

The Pacific Salmon exhibits habits for which specific methods of capture were developed for use in clearly defined environmental settings. The isolation of many of these settings and the mechanized nature of the canning process led to heavy capitalization of the fishery, concentration of power and influence into the hands of a few industrialists, and a standardization of the modes of production. Boat-builders responded with a “stock” boat, the Columbia River Sailing Gillnetter. As this type dispersed throughout the salmon fishery, local variants emerged. Other types of boats also propelled by oar and sail both preceded its introduction and continued in use until the introduction of motors. Salmon were sought with dugouts, sampans, feluccas, small double-enders, and various flat-bottomed craft.³

The bowpicker developed into the industry standard for salmon gillnet fishing on the Columbia River. Builders included Bumble Bee Shipyard, Astoria Marine Construction Company, Blix Boat Works, and Columbia Boat Building Company. The typical construction materials for wooden gillnet boats were Port Orford cedar for planking and white oak for framing. The early engines used in Columbia River gillnetters were single cylinder, 4-cycle gasoline engines from Union or Frisco Standard. Later engines were two cylinder engines from Palmer, Wolverine and other manufacturers.⁴

In the nineteenth century, fishers on the river used wooden, double-ended, two-person sailboats that were powered by oar and sail. Picking nets by hand with no mechanical assistance was heavy, difficult work, and the introduction of a roller to handle the net helped bear some of the weight while the net was being picked.

The invention of the gasoline engine in the late nineteenth century changed the way the fishing boat was designed. The new boats had a flared bow, a square stern, and a cabin in the stern. Fishers piled their nets in the bow and laid them out along the side of the cabin and over the stern. The fishers stood in the bow to pick the net before removing the fish, putting them in the locker, and piling the net in the bow. Mechanized rollers, followed by the hydraulic roller (invented in Clatskanie, Oregon), substantially reduced the labor involved in net hauling.⁵

³ Charles David Moore, “Salmon Fishing Boats of the North American Pacific Coast in the Era of Oar and Sail,” Thesis, Texas A&M University, 1993.

⁴ Bruce Weilepp, unpublished material, 2012.

⁵ Irene Martin, “Bowpickers,” *The Oregon Encyclopedia*, <http://www.oregonencyclopedia.org/entry/view/bowpickers/>.

The major stages in the evolution of the Columbia River gillnet boat can be described as follows.⁶

Sailing Gillnet Boat (1860–1910): The double-ended sailing gillnet boat was brought to the Columbia in the mid 1800s from California’s Sacramento River. The first boats were 22’ to 24’ long. Planked with Port Orford cedar, the boats had small side decks and coamings to keep out water, were rigged with a sprit sail, and crewed by two men. Sailing gillnetters were round bottom boats with a flat plank keel and a centerboard. The bow and stern shape had a hollow waterline with flared topsides. The midship floors were rising, as compared to later sailboats in Alaska which had flat floors. The boats also had an unstepable mast, removable rudder (to avoid damage when drifting), and boomed sprit sail. A second sail, either jib-headed or sprit, could be set from the mast. These boats were fished from the stern. Larger sailing versions of these boats were fished until 1952 in Bristol Bay, Alaska. At the turn of the century more than 2,500 double-ended sailing gillnet boats fished the lower Columbia River. By 1989 none of these boats remained on the river.

Double-ended Sailing Conversion (1900–1930): Beginning in the early 1900s, many double-ended sailing gillnet boats were converted to power. The mast was removed and a small canvas cuddy or cabin placed forward. The propeller was enclosed in a metal cage to keep the net from being fouled. To aid in recovering the net, many boats were equipped with an unpowered wooden “skunk” roller on one forward side of the boat. These boats started the tradition of a bent-down keel for the shaft log. This design of keel continued through all subsequent phases of wooden gillnetters.

Double-ended Bowpicker (1910–1935): Due to the chance of fouling the net in the propeller and the need to protect the engine, many of the double-ended gillnet boat conversions moved the cabin aft to the rear of the boat. The net was fed out over the stern but pulled in forward, on one side or the other of the boat. Double-ended bow pickers were designed to be one-man boats, as opposed to the sternpicker boats (sail and power) which were two-man boats.

Transom-sterned Bowpicker (1930–1960): As engines became larger and more powerful, the gillnetters were built larger, 26’ to 28’ long, with a transom (flat) stern. A larger cabin aft sheltered both the engine and crew. The net was fed out over the stern quarter and pulled in forward, over a powered roller attached to one side of the boat. These boats often had a second set of controls forward so one person could crew the boat.

Reel Boats (1950–present): In the 1950s, powered reels were introduced. Reels were located either forward or aft. The net was wound up on these reels and fed out and pulled in over a roller between large guides located directly in the bow or on the center of the transom. Sometimes the reels were divided into sections to allow a fisherman to rapidly switch net types. Reel boats range in length from 24’ to 30’ or more. Reel boats are now built of plywood, fiberglass, or metal and used widely along the entire west coast of North America.

⁶ Sam Johnson, Mike Soderberg and Jon Westerholm developed the categorization described here for the Columbia River Maritime Museum. Additional information provided by Bruce Weillepp.

Although boats were often converted or modified and do not always neatly fit into one category, it is useful to categorize them for comparative analysis. For the purposes of this documentation project, the following categories of gillnet boats have been used:

1. Wooden boats brought to the Columbia from Sacramento: 1860s
2. First boats built locally: double-ended sailboats: 1870-1910
3. Double-enders powered by one cylinder engines: 1910-20s
4. Double-enders with cabin in bow, 4-cylinder engines: 1920s
5. Double-enders with cabin aft (bowpickers): 1920s
6. Square-sterned boats with aft cabins, 6-cylinder engines: 1930s
7. Square-sterned boats, bowpickers with V-8 engines: 1940s-1950s
8. Square-sterned bowpickers/sternpickers (with and without reels) with V-8 engines: 1965-1970
9. Aluminum and fiberglass sternpickers and bowreelers, high-power V-8 engines: 1970-present

C. Operational History: The vessel was first named *Slim Pick'ns* when it was built in 1972 for its original owner, Robert Wegdahl of Cathlamet, Washington. It was fished for salmon in the Puget Island/Cathlamet area from the time of its original launch until it was purchased by Fred Ostling in 2000 and renamed *Alki II*. Fred has also fished in the same Puget Island and Cathlamet areas (Zone 2) since he purchased it, with a few seasonal upriver trips to fish drifts in the Multnomah Falls and Bonneville areas. Fred Ostling still works the boat. The *Alki II* has been fished every season since 1972.

Fred Ostling has been gillnet fishing since 1977 and has owned two gillnet boats. He originally owned and fished the *Alki*, a wooden, transom-sterned Columbia River bowpicker built in 1947⁷. The older boat was lower and closer to the water, making it easier to handle the “diver” nets that were popular at the time.

In 2000 he purchased the *Alki II* as a replacement for the aging *Alki*. Fred says the fiberglass hull is much easier to maintain than wood boats, and that the boat is bigger and higher making it easier to fish with the newer, 40' deep “floater” nets now commonly used.⁸ The fiberglass hulls are quieter and warmer than the aluminum hulls also in use since the demise of wooden hulls. The boat is completely trailer-able and is always towed to upriver fisheries. Dwindling fish stocks and unpredictable returns have shortened the seasons, but Fred has filled the fish box with 3,500 pounds of salmon on a good trip.

In 2011 the front well-decking was replaced with a new, lower workspace and the net-reels were relocated to provide easier access and use. The new layout and materials have greatly enhanced the boat's performance when retrieving and handling fish.

The deck layout is typical of most early fiberglass gillnet boats with the cabin aft and the workspace in the bows. The cabin access door opens to a small aft cockpit, common to early

⁷ Historic American Engineering Record (HAER), National Park Service, U.S. Department of the Interior, “Gillnet Fishing Vessel *Alki*,” HAER No. OR-170.

⁸ Fred Ostling, interview, 27 June 2012.

wooden gillnet boats. The primary navigation can be done either aft of the cabin or inside the cabin. There is third steering wheel at the working helm in the bow. All steering is hydraulic.

PART II: STRUCTURAL/DESIGN INFORMATION

A. General Description:

- 1. Overall:** *Alki II* is a rear cabin, bowreel, gillnet boat with a fiberglass hull and fiberglass-sheathed plywood deck-house and deck structures. It has a fore-deck-mounted hydraulic net reel and a built in fish box in front of the pilothouse that holds 3,500 pounds of fish. The boat is 27'-0" long and has a beam of 8'-8". Cabin access is through a small aft cockpit.
- 2. Hull:** Fiber Reinforced Plastic (FRP Fiberglass). The hull thickness varies from ¼" thick for the majority of the hull and up to ½" thick at the bottom and the bows.
- 3. Decks:** Solid fiberglass. Deck stringers are straight grain fir.
- 4. Cabin and Hatch boards:** Plywood covered with fiberglass.
- 5. Crew Accommodations:** *Alki II* was originally set up to operate with just one man aboard. There is a single berth along the starboard side of the cabin. There is a steering/navigation station with engine controls and hydraulic steering on the port side. Cooking and heating are done with propane.

B. Mechanical Features:

1. Deck Equipment:

Nets are stored on a hydraulically operated 55"-diameter fiberglass net reel with partitions for two nets. The net reel can be controlled from a foot treadle in the bow. Nets are pulled through an adjustable (side to side) stainless steel fairlead mounted at the bow.

The nets are set and retrieved from the bow through an adjustable (left-to-right) stainless steel fairlead/net roller.

A forward operator control station at the port bow controls steering, speed and forward/reverse of the boat during net handling ("Morse" speed and gear selection controls).

There is also an aft control station with hydraulic steering and engine controls mounted on the back of the pilothouse at the after deck cockpit ("Morse").

There is a stainless steel fish slide from the forward operating station to the fish box behind the net reel.

PVC piping and controls for a fish recovery box are located on the starboard rail amidships.

Access to the pilothouse is through the aft cockpit.

2. Cabin Equipment:

GPS: Garmin GPSMAP 162

Fish finder: Furuno

Depth Finder: Coastal Navigator

VHS Radios (2): Standard (monitors channel 162) Standard Horizon Eclipse (tug & barge channel)

Catalytic propane heater

Propane stove: Sunwave Martin (2 burner)

Steering: Hydraulic with one steering wheel in the cabin, one behind the cabin and one at the forward work-station/helm.

Engine controls: "Morse" speed and gear-selection controls. One set in cabin, one behind the cabin and one at the forward helm.

Electric Pump: 12 volt "Rule" 3200 gal/hr capacity pump (for boat wash-down and fish recovery box).

PART III. SOURCES OF INFORMATION

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