

GILLNET FISHING VESSEL THRESHER
(OR 263 EH)
Astoria Marine Construction Company
Astoria vicinity
Clatsop County
Oregon

HAER OR-172
HAER OR-172

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA
FIELD RECORDS

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 *Thresher*

HAER No. OR-172

Location: Astoia Marine Construction Company, Astoria, Clatsop County, Oregon

Rig/Type of Craft: Gillnet Fishing Vessel

Trade: Commercial Fishing

Official Number: OR 263 EH

Principal

Measurements:

Length (oa): 25'-6"

Beam: 9'-2"

Draft: unknown

Displacement: unknown

Gross registered tonnage: unknown

Net registered tonnage: unknown

Service speed: 12 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: 250 HP Chrysler Marine 318 V-8

Date of

Construction:

1968-70

Original Owner: Tom Swenson, Astoria, OR

Present Owner: Don Fastabend, Astoria, OR

Disposition: Working gillnet boat

Significance:

Part of an ongoing project to document the evolution of the Columbia River gillnet boat, *Thresher* is an example of a square-sterned sternpicker (with reel) with V-8 engine: (category 8 in Historical Context section below).

Thresher, designed and built by the Blix brothers, is an early version of a sternpicker (compared to the traditional Columbia River bowpicker). It has a shallow, V-chined wood hull giving it the potential to plane. It can be

considered a transitional stage boat between traditional full-displacement hulls and modern high-speed boats.

Author: Clatsop Community College Historic Preservation Program, 2011.

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 Brian Nice, CCC Historic Preservation Program; Dale Espelund, Gary Trenner II, Adam Dreke, and Leslye Dahlen, CCC CAD Program; Joseph Wessinger, HAER intern. Research, documentation, and drawings were done by Emmett Smith, Fellow, Council of American Maritime Museums. Research and documentation were done by Larissa Zimmerman, CCC Historic Preservation Program, and Earl Reynolds, CRMM volunteer. Field sketches were done by Randy Brown, CCC Historic Preservation Program. Additional editing was done by Peter Marsh and Bruce Weilepp.

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PART I: HISTORICAL INFORMATION

A. Physical History:

1. **Date of Construction:** 1968-70.
2. **Designer:** Marvel Blix, Blix Boat Works, Puget Island, WA.
3. **Builder:** Marvel Blix, Blix Boat Works, Puget Island, WA.
4. **Original Plans:** Unavailable, but the boat is configured as it was originally constructed.
5. **Modifications:** The original 225 HP Chrysler 318 V-8 engine was replaced with a new (250 HP) engine of the same type in 1990. No exterior changes have been made.
6. **Names:** *Thresher* is the original name.

B. Historical Context: The use of gillnets¹ in the Pacific salmon fisheries began in the mid nineteenth century and continues to the present. 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 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.³

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

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.

³ See "Notes on the Columbia River Gillnet Boat: Bowpicker Type," included in the field records accompanying this report for a more complete description of how these boats were used, built and equipped.

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.⁴

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.⁵

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.⁶

The major stages in the evolution of the Columbia River gillnet boat can be described as follows:⁷

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 feet 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

⁴ 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.

⁵ Bruce Weilepp, unpublished material, 2012.

⁶ Irene Martin, “Bowpickers,” *The Oregon Encyclopedia*, <http://www.oregonencyclopedia.org/entry/view/bowpickers/>.

⁷ Sam Johnson, Mike Soderberg and Jon Westerholm developed the categorization described here for the Columbia River Maritime Museum. Additional information provided by Bruce Weilepp.

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 feet 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 the boat could be crewed by one person.

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 feet or more. Reel boats are now built of plywood, fiberglass, or metal and used widely along the entire west coast of North America.

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: *Thresher* was built by Marvel Blix of Blix Boat Works⁸ at Welcome Slough on Puget Island in 1968-70. The owner was Tom Swenson, a local fishing legend in Astoria, who was living on Puget Island at the time. It is currently owned by Don Fastabend, owner of Astoria Marine Construction Company, and has been stored in the yard under cover for several years. The boat has been well cared for, last fished in 2007, and is still licensed to fish. It is mostly original.

It is powered by a 250 HP Chrysler Marine 318 V-8. Fastabend replaced it with a new engine of the same type as the original (225 HP) in 1990. *Thresher* was one of the early gillnet fishing boats built with a shallow, V-chined hull so it had the potential to plane. However, it was so heavily built that the overall weight prevented it from achieving a speed higher than 12 knots. Therefore, it could be considered a transitional stage between the traditional full-displacement hulls and the modern high-speed boats.

Fastabend recalled that the two Blix brothers built similar shaped boats, but Marvel planked the hulls with 7/8" yellow cedar and his brother Sankey used 3/4" plywood on the bottom and 1/2" on the sides, which resulted in a lighter boat. The planked version was fitted with 2" thick sawn frames cut from various hardwoods, set 12" apart. The frame depth increased from 3" on the topsides to 5" at the keel. After testing the *Thresher*, Marvel realized it was heavy and decided it could do with some more length. The next boat was 27' long and went faster with the same engine, according to Fastabend.⁹

Marvel Blix's father Sigurd Blix emigrated from Norway in 1904. By 1909 he had set up shop on Puget Island building boats.

With the Columbia River and its famous salmon fishing fleet running past his door, it was a natural that gillnet boats became his major construction activity. His sons, Marvel and Sankey, joined him by the 1930s when they began to specialize even more in gillnetters, both bowpickers and later the larger sternpickers.¹⁰

During World War II, Marvel worked as a shipwright in the U.S. Navy shipyard at Vallejo, California. He came home to work at the family business when the war ended, training his three sons who followed him in the trade. He died in 2000. The Blix Boat Works building still stands above the slough, but is no longer in use.

Besides experimenting with the hull shape, the Blix brothers also placed the cabin in the *Thresher's* bow, over the engine box, and installed a hydraulic net reel in the stern. The reel is 5' in diameter, 4'-6" wide, and made of fiberglass. This made the boat a "sternpicker – compared to

⁸ See Historic American Engineering Record (HAER), National Park Service, U.S. Department of the Interior, "Blix Boat Works," HAER No. WA-218.

⁹ Don Fastabend, interview, 16 June 2011.

¹⁰ Jon Westerholm, "Blix Boats," *Columbia River Gillnetter*, Winter 2010, Vol. 41, No. 1, pp.7-8.

the traditional Columbia River boats that were all “bowpickers.” The reel had first appeared on Canadian boats and revolutionized fishing in U.S. waters in the late 1960s.

Where to put the reel continues to be a question of personal preference, but whether it was installed in the bow or the stern, it completely changed the way the gillnet was set with the power roller, which still required effort to bring the net into the boat. The reel’s power significantly reduced the effort and increased the speed. The bowpicker was far less likely to catch the net around the propeller or rudder, but had problems backing up. The sternpicker had more room for fish, because the aft deck is wider than the foredeck, as fisherman Mark Shecker pointed out.

With the new faster boats, the reel, and better electronics, the industry was changing fast. Until the 1950s, “the canneries owned a lot of the boats, then the men had a business relationship with the canneries. In exchange for their fish, they would have a place to store their boats, store their nets, work on their nets, a haul-hitchout facility, a place to put the nets when they were treating them for, what we call Bluestone, really a disinfectant. A lot of guys have gear sheds now, whereas before, big buildings like that one that’s out there on the water, that was for net storage.”¹¹

By the 1960s, the canneries had sold their boats off to fishermen to cut down on their overhead. After a few years using an old cannery boat, a successful fisherman was ready to finance a new boat with improved features, and choose material, length and type of engine. “With all the new equipment being produced at the end of the 1950s and into the early 1960s, the designs of boats on the Columbia River and at Bristol Bay went through considerable changes before they got reels in these boats,” Fastabend explained. “Before that, you had a roller to help you, but you picked them by hand before they got reels in these boats.”

“The stern picker out there [*Thresher*] has got a big reel, a big net reel, and the whole net just rolls up on that. You didn’t pull the net in the boat, you pulled the boat under the net, because the nets were 250 fathoms long [1500 feet] and 35-40 feet deep. See, you can’t pull that, but you can pull the boat under the net. So when they got reels on these nets, then the nets’ depths started going deeper and deeper,” Fastabend added.

One other fact about the *Thresher* that Fastabend pointed out was the beam. “Blix built it over the legal towing limit of 8 feet. In the 1980s, we started towing our boats to the next opening, and the *Thresher* was over 9 feet, so you really needed a permit if you wanted to tow it legally.”

¹¹ Mike Soderberg, interview, 16 June 2011.

PART II: STRUCTURAL/DESIGN INFORMATION

A. General Description:

1. Overall: *Thresher* is a front-cabin, sternreel gillnet boat with a wood hull and a painted plywood deckhouse and deck structures. It has an aft-deck-mounted hydraulic net reel. Nets are laid and retrieved through stainless steel fairlead rollers at the stern.

2. Scantlings:

- a. Hull Planking: 1" yellow cedar
- b. Ribs: 2-1/2" deep x 1-3/4" wide oak
- c. Sheer Clamp: 1-1/2" x 7-1/2" oak with ribs let in
- d. Weather Deck and Cabin: Marine plywood

B. Mechanical Features:

1. Equipment:

- a. 250 HP Chrysler Marine 318 V-8
- b. Net Reel: Fiberglass
- c. Hydraulic Controls: Apex Equipment Inc., Seattle, WA, Model #A100 KR (Serial # A40639).
- d. Engine Controls: Morse Marine Engine Controls at main and working helms.
- e. Steering: Chain and cable to wheels at the main and working helm. A third wheel inside the cabin is slaved to the main wheel.
- f. Depth Finders: Datamarine LX 300, Interphase LC 200, and Capree Ensign.
- g. Radio: UHF radio receiver/transmitter.
- h. Galley Equipment: 2 gallon expansion tank for engine, 2 burner propane galley stove.

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