

BOATS & GEAR

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A BIG LITTLE BOAT

Just under 60 feet, the Shemya packs 172,000 pounds of cod, plus freezing and refrigeration equipment and a crew of 10.

JUST LAUNCHED and getting ready for Alaska waters, the longliner Shemya needs to take on fishing and processing gear plus fuel and water before she comes down to her lines.



FRED WAHL MARINE CONSTRUCTION

BY JENNIFER KARUZA

Near the tip of the Aleutian Chain, roughly 1,500 miles from Anchorage, is the windy and isolated Shemya Island, known by its inhabitants as "The Rock."

On the central Oregon Coast, 25 miles north of Coos Bay and four miles from the Pacific Ocean in Reedsport, Ore., a new

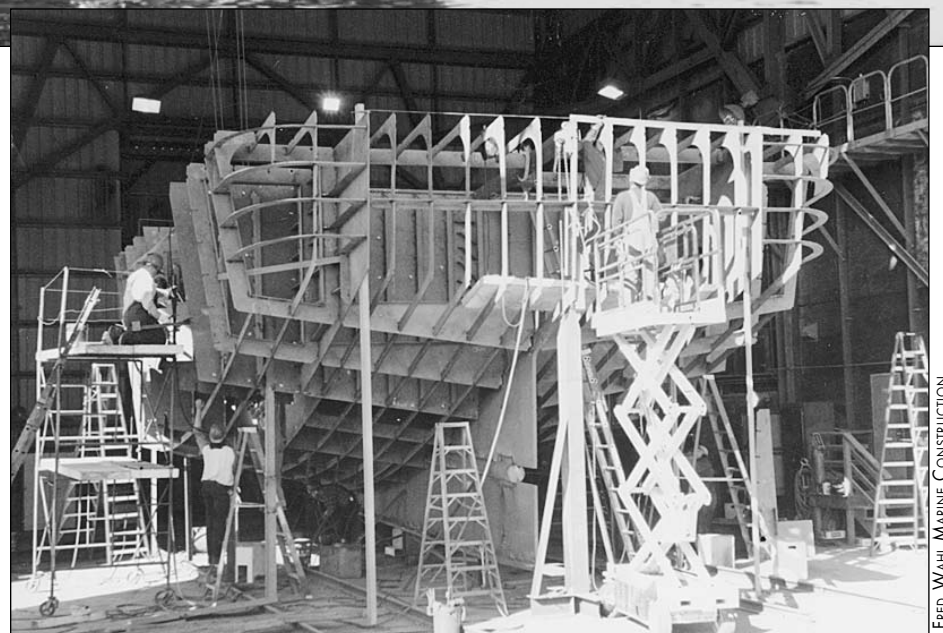
steel freezer longliner bearing the name Shemya left her builder, Fred Wahl Marine Construction, on Jan. 12.

With an overall length of 59 feet, 5 inches a beam of 28 feet, 6 inches and a depth of 14 feet, the 200-ton Shemya could also be called "The Rock."

Worth approximately \$2.5-million, The Shemya, homeported in Kodiak, will fish in Alaska's under-60 foot IFQ fishery for halibut, blackcod and Pacific cod along the Aleutian chain, the Gulf of Alaska and the Bering Sea.

"There is so much stuff jammed into this boat that we're not sure it's wide enough," says Fred Wahl, owner of Fred Wahl Marine Construction. "But it's for a specific under-60 foot area, so that's what you have to do, get creative. Every square inch of this boat has been utilized."

"To maximize



FRED WAHL MARINE CONSTRUCTION

BEHIND THE HULL PLATING of any steel boat is a complex skeleton of welded frames, beams and stringers, and the Shemya's framework isn't any different.

their payload, the only way they could go was wider, taller, and deeper to make up for the length," adds Mike Lee, the boatyard's production manager.

The Shemya was designed by Jensen Maritime Consultants in Seattle for Shemya Fisheries, whose owners, Nick Delaney, George Schile, Rob Wurm, Jon Smee, and

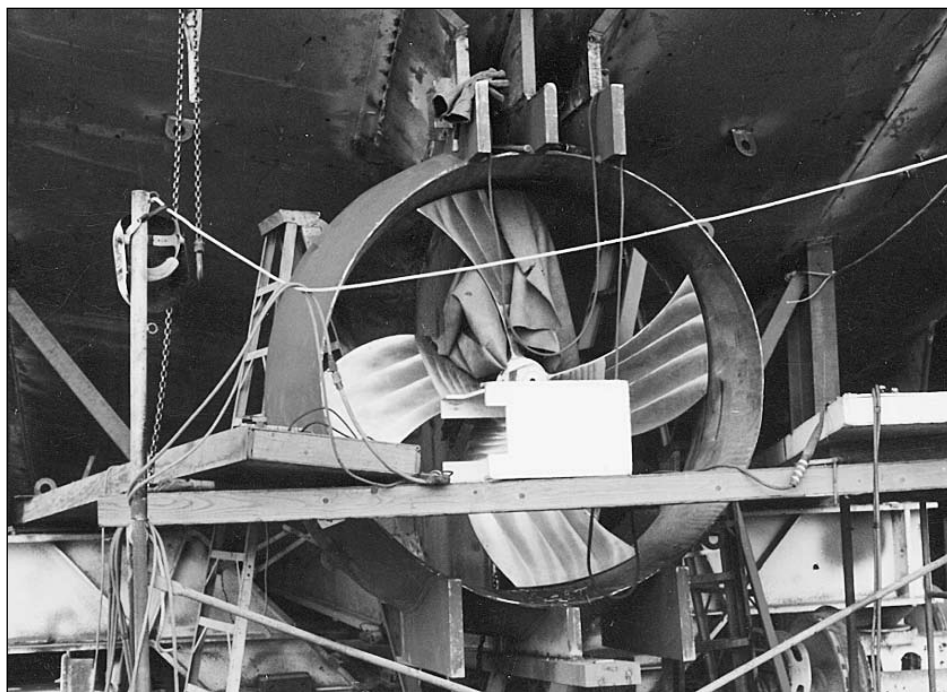
Jorg Schmiesser, are all longtime Alaskan longliners.

Jonathan Parrot, Jensen Maritime Consultants' director of engineering, says there's only one other boat like the Shemya, the 59' x 24' 6" Krusof. "The Krusof is a similar concept, but the Shemya has so much more capacity because of the extra



JENNIFER KARUZA

WORKING TOGETHER on completing the Shemya were builder Fred Wahl (right) and George Schile, one of the boat's owners.



PLENTY OF THRUST will be generated by this four-bladed prop inside its 68-inch Kort nozzle. Attachments for three rudders are located on the top rim of the nozzle.

beam, and the Shemya is a house forward boat," whereas the Krusof has a house-aft design, Parrott says.

Shemya's additional beam gives it more hold area, but the extra space is mostly for the processing and freezing areas. "It gives you room to move around on the processing deck," Parrott says. "There's a lot of machinery crammed in the processing deck, but you've got 24 to 30 inches clear walking space all the way around. You don't have to worry about bumping into machinery, and it makes working more efficient."

"We'll fish about 100 miles out in the spring and summer, and stay closer to the islands in the winter. We'll be making one- to two-week trips," says Schile, who, with two other owners, will operate the boat on a rotating schedule.

Like most boats under construction, the Shemya underwent a few changes during the course of its lofting, building and launching. The longliner was originally

set to have a 28-foot beam, but another 6 inches were added, two generators got bigger, and the original manual baiting system was exchanged for an automated one.

"This thing has been final about a dozen times," Lee says. "They maximized use of the space big-time."

The additional beam helped gain space. And since the owners want to operate the refrigeration and hydraulics at 100 percent capacity with a single generator, the power of one generator was boosted to 320 kW, a gain of 100 kW, when a Caterpillar 3406 was chosen to power the genset instead of a Caterpillar 3306, which had been the original choice.

For the second, smaller generator, 190 kW was needed to handle the electrical load during certain fisheries, so an additional 40 kW was picked up by going from a naturally aspirated Caterpillar 3304 to a turbocharged and aftercooled Caterpillar 3304.

The Shemya will need the additional generating power to operate the plate freezers — with a daily freezing capacity of 36,000 pounds — and to keep the temperature in the 4,100-cubic-foot freezer hold at minus-30 degrees for up to 172,000 pounds of Pacific cod.

The fish hold is divided by an insulated steel bulkhead so that when the Shemya is taking part in halibut and blackcod fisheries, those species can be iced down in one part of the hold, and bait kept frozen in the other section.

To help the hold keep the cold in and the heat out, 4 to 5 inches of moderate-density foam was sprayed on the side walls and vertical framing. Then 1 to 2 inches of high-density foam was added and covered with a finish coat of fiberglass. The ceiling has 6 to 7 inches of polyurethane foam. Sabroe freezer coils hang from the overhead.

To promote air circulating from the top to the bottom of the hold, 1" x 1" battens on 12-inch centers are set into the fiberglass. "They spent an extra amount of money doing the freezer compartment with the air-circulation systems, the grating on the floor and radiuses in the corners," Wahl says.

When it's time to unload the fish, a remotely operated, deck-mounted North American crane will be used. With a remote harness, the crane operator watches the hook-up in the hold and maneuvers the crane on his own, without a rigger giving him hand signals. "It's real handy," Lee says. "It takes a three-person operation and turns it into one."

Obviously, the Shemya is a big little boat, and to that extent, Wahl admits, "There has been a lot of [suspicion] that this thing won't get out of its own weight, but I think it will do the same as any big, wide-bodied 59-footer."

Parrott says the longliner makes between 8 and 9 knots, "which is typical for a boat of this size. If you wanted to push it any faster, you'd really have to ramp up the horsepower." The Shemya beam makes her quite blunt in the bow, which, Parrott says, will slow her down in heavy weather — by a knot or two.

Reducing some of the bow resistance as the longliner plows her way through Alaska storms is a 7-foot diameter bulbous bow. The bulbous bow, which Parrott says is about 6 inches larger than what would normally be found on a boat of this size, makes for a finer entrance than the boat would have otherwise and provides needed buoyancy for the weight of the machinery that's in the Shemya's forward sections.

The power to move the Shemya at her 8- to 9-knot speed comes from a 615-hp Caterpillar 3412 main engine that's hooked up to a 6.4:1 gear that spins a 4-bladed prop inside a 68-inch Kort nozzle. The nozzle has triple rudders attached to its backside. For maneuvering in tight spaces, there's a 16-inch American bow thruster.

In the engine room, along with the main engine, are the 320- and 190-kW gensets and a 105-kW genset for hotel power.

INSIDE THE SHEMA

- **Boatbuilder:** Fred Wahl Marine Construction, Reedsport, Ore.
- **Designer:** Jensen Maritime Consultants, Seattle.
- **Owners:** Shemya Fisheries, Kodiak, Alaska
- **Dimensions:** 59' 5" x 28' 6" x 14'
- **Hull plating:** 5/8 inches
- **Stem:** 1-inch plate
- **Keel:** 1-inch plate forward and 2-inch plate aft of amidships
- **Transverse frames:** 1/4-inch with a 3-inch flange, averaging 8 inches to 9 inches deep. Frames are 3 feet, 6 inches on center.
- **Longitudinal stiffeners:** 3" x 3/8" flatbar on 18-inch centers
- **Deck plating:** 1/4 inch
- **Deck beams:** 3" x 3/8" flat bar running longitudinally and 1/4" x 3" flat bar running transversely
- **Bulkheads:** 5/16-inch plate with 3" x 3/8" flat bar and 4" x 3" x 1/4" angle for stiffeners
- **Bulbous bow:** 3/8-inch plating
- **Main engine:** 615-hp Caterpillar 3412 main engine with a Reintjes 6.048:1 gear spinning a four-bladed wheel inside a 68-inch Kort nozzle

Up on the shelter deck, in an area roughly 32' x 28', there's a processing area, two plate freezers, and hauling, setting and baiting equipment (see sidebar).

Space is at a premium in a boat of this size, so refrigeration equipment including two refrigeration compressor units, a low-pressure receiver and a refrigeration-cooling pump are in the lazarette. In case of an ammonia leak, a ventilation system is designed to vent any fumes out through the main deck and into the atmosphere.

The crew quarters and galley area are forward and under the wheelhouse. There's a six-man stateroom and a three-man stateroom.

In the wheelhouse is the captain's stateroom (complete with TV, VCR and DVD player) and head. The wheelhouse holds over \$120,000 in electronics and two pilot's chairs ordered from Denmark.

Schile, who will be one of the captains,

has longlined in Alaska waters for 11 years on the Bristol Leader and the Alaska Leader (which are owned by some of the partners of Shemya Fisheries) as well as several other Kodiak-based longliners. He had been in Reedsport monitoring construction on the Shemya.

Although Schile will be operating a boat that's state-of-the-art and expensive, he attributes his fishing style not to the size and capacity of the boat, but to the crew. "It's a good crew that makes the difference. We try to have a solid crew and make sure there is always a job for the crew to go to." ■

For contact information on companies mentioned in this article, see page 77.

40,000 HOOKS OVER THE SIDE

The decision by the Shemya's owners to change from a hand baiting system to an autobaiter was made when two of the owners, Nick Delaney and George Schile, saw the Mini-Circlematic Baiter from Marco at Seattle's Fish Expo/Workboat Northwest show this past November.

"We decided to go with automated gear because we've got a small crew of only 10 to 11 guys, and you have to turn out a lot of gear to make it viable. We started adding up the numbers and realized with manual baiting, we'd probably turn out 25,000 hooks a day. With the autobaiter, it will be closer to 40,000 hooks per day," Schile says.

Marco's Mini-Circlematic Baiter retails for \$120,000. That includes 120 magazines (At press time, Shemya's owners were considering carry 152 magazines, if space could be found.) with each magazine holding 800 feet of ground line and 225 hooks. The Mini-Circlematic Baiter is the newest generation of Marco autobaiters, smaller and more streamlined than earlier models.

On the Shemya, the ground line is set out the stern through the autobaiter and hauled back over an amidships starboard-mounted roller. From the roller, the ground line goes through an 8-inch stainless steel tube to the stern and then through a Marco Circlematic Slack Taker, which unwinds the gangions from the groundline and slides the hooks back on the magazines. Then gear is overhauled (hooks sharpened or replaced, and gangions replaced if need be) and placed on the storage racks, ready to be set out again.

The fish are stripped from the longline inboard of the roller. Pacific cod are bled, headed and gutted, sorted by size and quality, packed in aluminum pans, and loaded into minus-40 degree plate freezers. Once frozen, the fish are glazed, bagged and put into the minus-30 degree fish hold.

The heading and gutting line is removed for black cod and halibut and replaced with a traditional butchering table for gutting the fish. The fish go from the butchering table into an iced fish hold.

— J.K.