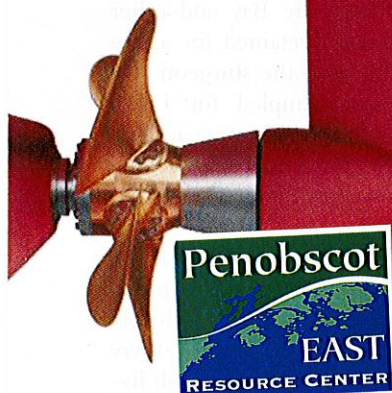


Best of BOATS & GEAR

2014



Promos Lite improves water flow off the prop to reduce fuel consumption.

This year's best slows down rolling, puts out fires and gives you a multiple-hull option

By Michael Crowley

National Fisherman's January issue is always the time to look back at the most interesting Boats & Gear ideas that ran through the our pages in the last year. This year we've got safety products; options for scallopers, seiners and groundfishermen; a sure way to make life at sea more comfortable; and a couple of ways to cut back on fuel, including a radical — at least for fishermen — boat design.

During this past June's Commercial Marine Expo in New Bedford, a visitor stopped at the *NF* booth to tell us that his product, after being featured in our Product Roundup section, had launched a sales rush from New Zealand to the North Slope.



The DSPA-5 put out an engine room fire in 7 seconds.

The DSPA-5 put out a simulated engine room fire in 7 seconds and a galley

fire in 6 seconds at Seattle's Fremont Maritime Training Center. The DSPA uses an aerosol system that breaks the bond between oxygen and the fire, while the oxygen level remains the same. The aerosol stays active for an hour to keep the fire from reigniting.

As the DSPA-5 increases your chances when things go bad, so too does Stearns'



Your own breath insulates the Stearns immersion suit and keeps you warm.

new immersion suit, the **Thermashield 24+**. What makes it different from other immersion suits is the patented air-circulation system.

You breathe into a hose attached to the top of the left shoulder. Your breath — about 88 degrees — inflates air chambers in the suit to keep you warm. Basically the air-circulation system acts like a radiator distributing heat. There's also a pouch on the front that warms your hands, with air coming out of the immersion suit.

The Canadian Coast Guard tested the Thermashield 24+, and with water and air temperatures at 32 degrees, people stayed in the water for 24 hours and 15

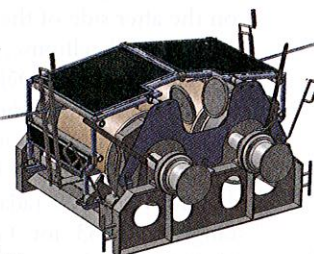
minutes. (That accounts for the "24+" in the product name.)

Safety isn't just something to think of in terms of vessel catastrophes like fires and sinkings. Even when the boat is floating along just fine, plenty of things can go wrong. That's especially true for Gulf of Mexico shrimpers. From 2000 to 2011, eight shrimpers died and 27 were injured on shrimp boats.

The trawl winch was the culprit — spinning catheads with protruding bolts, levers and bars that have to be operating while the fisherman leans over turning drums. Periodically, a shrimp gets hauled into the drum.

So the Alaska Pacific office of the National Institute for Occupational Safety and Health worked with Tool in Marblehead, Mass., to develop a **passive guarding system for trawl winches**.

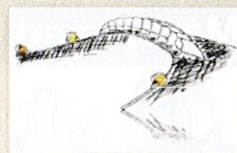
After looking at winches on more than 100 shrimpers, Tool selected the three most prevalent winches to design a safety system for. The first two were the McElroy 505 and 504 winches with short or long drums. The third was a Stroudsberg winch with dual



An early design for a passive guard from Tool keeps shrimpers out of the winch.

SHORT TAKES

MORGERE has a trawl add-on product designed to reduce fuel costs. The **AEROPLANE** is attached to the middle of the headrope and features a series of small kites made from canvas that's coated with PVC. The kites are shaped like vents, with the large opening at the front. The pressure that develops from water flowing through the vents provides lift to open the trawl. Drag is half that of floats. Contact North Atlantic Marine Supplies & Services, 101 Ilsley Ave. #4, Dartmouth, NS B3B, Canada; tel. (902) 431-6041; www.morgere.com.



MUSTANG SURVIVAL has just the thing for fishermen who spend time on the water with their kids. The redesigned version of the **LIL' LEGENDS** line of PFDs features a cooling-channeled interior back panel and wicking fabrics to reduce heat stress. They are built around segmented AirSoft foam for enhanced mobility and comfort. And there's a head pillow. The Lil' Legends PFD comes sized for an infant, child or youth. Contact Mustang Survival to find a dealer: www.mustangsurvival.com.

GEMECO MARINE ACCESSORIES is the distributor for the **EMU-1** engine-monitoring unit from Actisense. The EMU-1 digitizes analog engine data, allowing you to monitor an engine on a NMEA 2000 display. It digitizes up to six gauge inputs, or four alarms, two tachometers and two auxiliary inputs and shares the information across the computer network. Settings within the EMU-1 can be changed to suit the engine it is working with. Contact Gemeco to find a dealer: tel. (830) 693-0777; www.gemeco.com.



STANDARD HORIZON offers the **GX2200 MATRIX AIS/GPS VHF** radio. A WAAS GPS antenna is integrated into the radio's front panel. The Matrix AIS/GPS radio displays AIS target information and lets you contact ships with DSC. The radio has a 30-watt PA and loud hailer with listen back and preprogrammed fog signals. The GX2200 radio saves up to 100 waypoints. The radio can also request and receive another boat's position on the display, or send the information to a chart plotter. Contact Standard Horizon, 6125 Phyllis Drive, Cypress, CA 90630; tel. (714) 827-7600; www.standardhorizon.com.

RADAR MARINE ELECTRONICS is the distributor for the **CHIEFMATE**, a navigation bridge alarm from R&D Marine Design. The Chiefmate has alarms for anchor drag, when the boat drifts beyond a preset limit, and a depth alarm when entering water that's too shallow. A watch alarm makes sure the guy at the wheel doesn't fall asleep. After an alert, if the reset button isn't pressed, the boat's main alarm sounds. Contact Radar Marine Electronics, 909 Squalicum Way #106, Bellingham, WA 98225; tel. (360) 733-2012; www.radarmarine.com.



GRUNDENS USA has a garment designed to help keep fishermen cool while they are working on deck. It's the **AXMAR T-SHIRT**, a combination of polyester, bamboo charcoal fibers and Elastan. Bamboo charcoal is antifungal and wicks moisture from the body four times faster than cotton; it's also more breathable while being soft and non-irritating. The Axmar T-shirt is soft like silk, machine washable and dryable. It's priced at \$39.95. Contact Grundens USA; tel. (800) 323-7327; www.grundens.com.

drums aligned diagonally.

The passive guarding system is attached around the winch to keep body parts and clothing from getting snagged, "and provide a barrier where a fisherman, if he were caught, wouldn't get pulled into the winch but would hit up against the guard," says Tool's Bill Liteplo.

Passive guarding systems are being tested on shrimpers. After the testing phase, drawings will be published that boat owners can take to a fabricator and have a guard built.

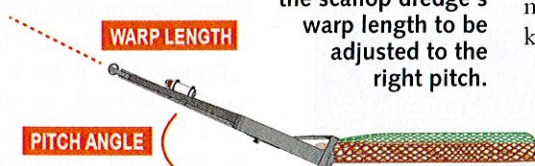
If you are engaged in any kind of trawl fishery, you have to be mindful of your and the crew's safety on deck, but you also want to know the gear you are towing is positioned in

the best way possible to ensure the boat returns home with a good trip.

To that extent, Notus Electronics developed a wireless sensor that lets a scalloper know the dredge's warp length, pitch, roll angle and depth.

The **Dredgemaster** was developed over an 18-month period while Notus worked with North Carolina fishermen on the scalloper Capt. Ryan. The results

The Notus Dredgemaster allows the scallop dredge's warp length to be adjusted to the right pitch.



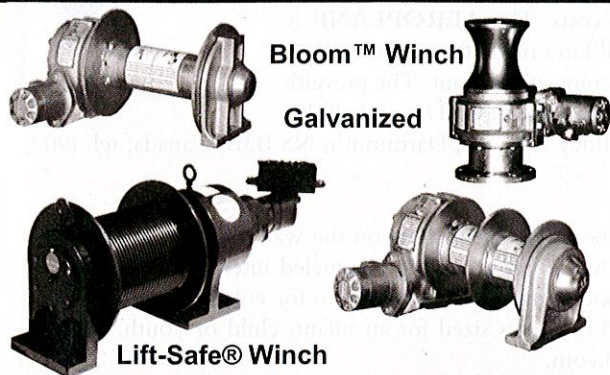
indicated that the pitch angle is the most critical factor in determining how well the dredge will fish, followed by warp length and roll angle.

For the Capt. Ryan the most productive pitch angle is 9 degrees, which resulted in a 22 percent catch increase. The optimal pitch angle will vary depending on the dredge's design.

The Dredgemaster features a 360-degree wireless sensor, which provides a solid signal back to the boat, through the mud, sand and debris a scallop dredge kicks up.

Simrad Fisheries got creative when they adapted a product intended for one fishery and made it work equally as well for another. When the

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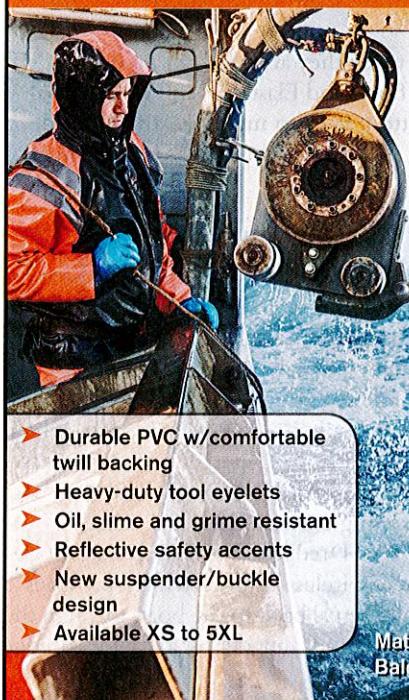
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DESIGN SHOWCASE

SN90 multibeam sonar was introduced it was marketed as a side-viewing sonar for seiners, displaying the net curtain and fish near the net.

But a group of trawlers convinced Simrad that it would work fine for them if it could be aimed forward instead of sideways. As a result, the first SN90 sold in this country went on an Oregon trawler this past June. Of course, you can still get the seining version.

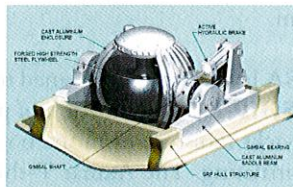
The SN90 has an operating frequency from 70 to 120 kHz, which allows the operator to find a good balance between range and resolution. There's also a steerable inspection beam that gives a detailed look at a group of fish before setting the net, showing numbers and fish size, which might minimize bycatch.

Simrad's sonar doesn't require a retractable hull unit, which should be an attractive feature for owners of small boats.

Assuming you've upgraded the safety items on your boat and have taken advantage of some of the latest fish catching technology, wouldn't it be good to feel halfway comfortable out on the grounds with a little less of this snapping back-and-forth business?

Paravanes aren't always the solution, especially in heavy weather. How about the **Seakeeper**, a control-moment gyro? The Seakeeper has been used on crew boats and Navy torpedo recovery boats, and was installed on what is probably the first commercial fishing boat in 2014 when it went into an older

West Coast salmon seiner.



The energy developed by the Seakeeper's gyro reduces a boat's rolling.

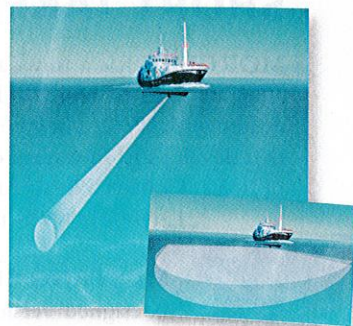
The Seakeeper is designed to reduce a boat's rolling by 70 to 90 percent. It has a large, heavy steel flywheel spinning up to 8,000 rpm inside a vacuum encapsulation. When the boat rolls, the encapsulation transfers the gyro's momentum and energy into the hull to hold it steady.

It basically puts "right-angle torque down to the stringers" to counteract the rolling, says Brooke Stevens with Seakeeper.

Rolling or not rolling, it's always helpful to reduce the amount of fuel your diesel is burning. On large boats, that's what **Promas Lite** is designed to do. It's an integrated propeller and rudder system that should reduce fuel consumption by 5 to 15 percent, with a payback period of just two to three years.

Rolls-Royce developed the Promas Lite. It has been retrofitted to a number of cruise boats but went on the first commercial fishing boat in November 2013. That was the 376-foot factory trawler Alaska Ocean while it was in for routine dry-docking.

Promas Lite is made up of three components. There's a stainless steel hubcap, which acts like a hydrodynamic fairing and is bolted to the back of the propeller hub. On the rudder, a Costa bulb is retrofitted behind the stainless steel hubcap.



The SN90 has both vertical and horizontal views.

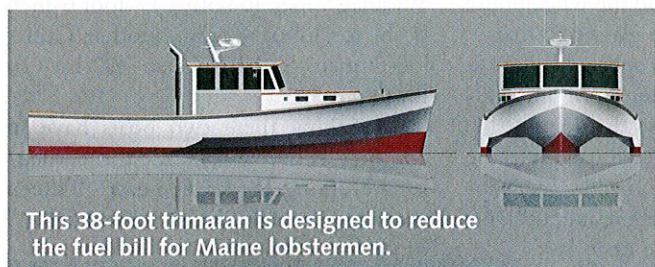
The bulb and the hubcap allow the water to go smoothly off the propeller blades and out the back of the vessel.

The third element is the propeller. The addition of the bulb and the hubcap means the prop can be rebladed or a new one installed that allows maximum loading on the blade tips, which gives maximum efficiency.

Fuel savings was also the driving force behind the concept for an entirely new lobster-boat design. Visit Maine boatshops and you will find differences in the lines of a hull from one builder to another, but one thing has remained unchanged: Ever since the first lobsterman dumped a trap over the side of his row boat, they've all been monohulls — from rowboat to sailboat to modern diesel-driven lobster boats. A single hull has always been roomy enough for a couple of fishermen, an engine, bait, traps and a cedar bucket.

Along comes Penobscot East Resource Center, a nonprofit group based in Stonington seeking to ensure a future for Maine's fishing communities, to challenge that single-hull concept. Think three, says the Center's Robin Alden, as in three hulls, better known as a **trimaran**.

What drove the trimaran notion was the rising cost of fuel, which represents about 30 percent of a lobsterman's operating budget. That makes it difficult for some fishermen to sustain themselves as owner-operators of small fishing boats.



This 38-foot trimaran is designed to reduce the fuel bill for Maine lobstermen.

Simply put, a beamy monohull lobster boat creates a lot of drag and that means more fuel burned. A multihull, however, creates less resistance going through the water.

An advantage of the trimaran over the catamaran is the trimaran has a large center hull. That allows a fisherman to stick with a single engine and carry a full keel. It's also a nod to the traditional engine arrangement fishermen are familiar with.

The trimaran is more than just a vague notion of Alden's and that of the naval architect Penobscot East teamed up with, Doug Read, a professor of engineering at Maine Maritime Academy in Castine.

The trimaran model was tank tested against a monohull model twice at the Webb Institute in Glen Cove, N.Y. Then the two were tested in open water in the harbor at San Diego. The final tank test was at the Stevens Institute of Technology in Hoboken, N.J.

The testing showed that at 16 knots the trimaran had a 20 percent fuel savings and 10 percent at 20 knots. "The sweet spot is 16 knots," says Read. Currently Penobscot East is looking for capital to build a 38' x 15' x 4' trimaran lobster boat. NF

Michael Crowley is the Boats & Gear editor for National Fisherman.

For contact information on companies mentioned in this article, see page 45.

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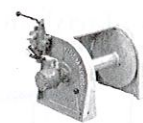
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