

WESMAR News Flash!

Substantial Fish Detection Improvements Achieved

HD800 Fish Detection Sonar Target Enhancement

WESMAR has three HD800 sonar target enhancement programs underway with field reports that are extremely favorable. The name of the game is clear and concise fish detection at the longest range possible. Following are reports on field experience.

1. HD800-110-10E Enlarged Detection Array

With this project we enlarged the sensor array with a 30% increase in total elements and 100% increase in the focused center section. The actual sensitivity improvement is doubled as echoes also return through this enhanced beam. The first HD800-110-10E soundome was installed in July 2000 on the *American Triumph*, a vessel with an extremely sonar literate crew that has tested a number of WESMAR sonar's innovations. This factory trawler fishes the relatively shallow Bering Sea for Pollock, a difficult sonar target in difficult sonar waters. Captain Lars Oterhals on the *American Triumph* was contacted by satellite telephone for a report on the new E-soundome. The Triumph also had a new power booster, installed as described below.

Lars reported excellent results with the boat loaded with fish at the moment. He was able to change the gain from the 70's with a pulse of 100% on the original HD800 to gains of the 40's and pulse of 25% with the new HD800. Not only did the range improve, but the resolution from the lower pulse setting was fantastic. The HD800-110-10E is a \$5,000 addition to standard sonar-an item that can be paid for several times each day through improved fish detection.

2. HD800 Power Booster

Power Boosters have been standard for several years on WESMAR'S large array of low frequency sonar's. Recent tests on the 110-10E used by Captain Lars Oterhals on the *American Triumph* and also by Henning Flatoy of Flatoy Electronics, Bergen Norway, on a standard HD800-110-10 indicate substantial sonar improvement.

Power Boosters are accessories to the HD800 sonar's that operate on separate 110 or 220 VAC power. The booster is installed next to the J-Box that contains the transmitter receiver board and hoist board. A two-meter cable is supplied for direct connection to the J-Box. The power booster will follow the power selected at the console (100%, 75%, 50%, 25%) and supply the correct voltage to the transmitter. The power booster performs its task by maintaining the transit pulse at full voltage with no visible sign of voltage drop throughout the life of the pulse. In fisheries where range is important and vessels with long interconnect cables, the power booster is a definite option.

Henning Flatoy installed a power booster on a standard HD800-110-10 sonar. He reported a range increase of an astonishing 32% with the addition of the booster. The customer was amazed, and Mr. Flatoy reports that he will now quote the power booster on all WESMAR HD800-110-10 sonar's. This is a \$3,500 USD option to the standard unit.

3. Target Enhancement Software

WESMAR has developed a new software mode for the HD800 sonar for easier detection of individual or dispersed fish. This software will add a sparkle to targets that otherwise may go undetected. How does this software work?

In the sonar mode there are 240 dots or pixels from the center of the screen to the outside range ring. Before color is selected for each dot, the console computer will take many samples of the target, average the samples, then select the color for display. On a single fish return echo samples will be of different colors ranging from blue to red. After the average, the color displayed may be green. This green target may look just like surface clutter, jellyfish or plankton. The real return from the fish should be red. However, a single fish some hundred meters away will not come smashing in red. That's life.

Target enhancement software, however, can help in target recognition. This is accomplished by using weighted averaging. It works this way: if four samples are taken on a single albacore and each sample is of a different color; #1 blue, #2 green, #3 yellow, #4 red, the color for the target on the screen will be green or yellow. Using target enhancement and selecting number 6, this number is only added to the red or clip color increasing its value to 10. Now the average of; #1 blue, #2 green, #3 yellow, #10 red equals 16. Of the four samples the average is 4. In this example any average greater than 3.5 will mark red or clip color on the screen. A difficult target like a single albacore tuna for example, will stand out from non-fish targets on the screen.

What do users of the new software say? Captain Andy Russo of the California Coast Squid *S/V Sea Wolf* says, "It's incredible! You can almost pick out individual squid." Captain Paul Daniels on the Oregon Shrimp Dragger *Lady Rosemary* says he loves the new software, "We're killing them this year."

In the HD800 software, target enhancement is called "target enhance" for short. It can be used in any fishery. To activate, select any number 1 through 10. This is the number to be added to the red or clip color only. It's amazing how well it works.

HD800 sonar's in the field can be upgraded for \$400 USD. On new systems target enhancement will come standard. This small and low cost software addition to the HD800 can make you even richer. Call WESMAR sales for immediate shipment of any of the above items.