

NOTE: After this article was published the name of the batteries changed from Meridian to ENERGY 1

Sea Circuits



Double the Power or Half the Space?

We recently dropped by Boat Electric (on Westlake Avenue in Seattle) to visit with Harris Allen of Meridian Marine Progressive Products. Meridian Marine Progressive Products is the marine distribution and marketing arm of the Northstar Battery Company. Boat Electric has been selling the Meridian Marine batteries, and business is so brisk that employees have resorted to hooking the Meridian batteries on display together with zip ties.

“We had a lot of people tearing apart the display to get to the batteries,” said a Boat Electric spokesperson. “We were having to rebuild the display all the time, and we would really rather sell a battery out of our storeroom.”

We wanted to know why these batteries are becoming so popular with NW boaters, and Harris Allen proved to be very informative. Allen shared a general outline of the company history and the specific battery technology employed in the Meridian Marine battery.

NW: What can you tell us about the company itself?

HA: Northstar Battery was formed three or three and a half years ago by an international group of battery company executives. Many of them were from



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Europe. They had the idea that they wanted to build a better battery. They went out and raised \$60 million in venture capital and built the most advanced battery manufacturing plant in the world in Springfield, Missouri. They built the

Harris Allen of Meridian Marine Progressive Products:

plant in Missouri because the two largest lead mines in the US are located there.

The founders realized that if they were going to build an improved battery, they would have to go outside the traditional manufacturing processes used by all the other manufacturers. A new approach was required, and they adapted technology from aerospace, automotive, and other industries to get the robotics that they needed to assemble these batteries.

NW: With all of the batteries on the market, why would a Northwest boater want to specifically consider yours?

HA: One of the most remarkable things about the Meridian Marine battery is that any unit with amp-hour capacity equivalent with a traditional 8D battery is only about half the size. It is slightly taller, but our battery is only five inches wide. We can effectively put two of these in the space of a single 8D. In fact, many people put two new Meridians into the same battery box that previously held only one 8D. I ask prospective customers whether they would prefer to recover half the space currently used by batteries, or enjoy double the

Clockwise from top left:

Two 210-amp Meridian batteries fit into the same space as a conventional 8D.

840 amp hours stored on a compact stainless rack.

420 amp hours in a traditional 8D space.



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power. It's a win-win decision, no matter how a boater decides.

The Meridian Marine battery is a premium product. They cost a lot more to manufacture, and to buy, than some battery purchased off the shelf in an auto parts store. Although the initial cost is higher than an off-the-shelf 8D, the Meridian battery will have a service life that is almost four times as long as the cheaper product.

NW: Is it correct to assume that your batteries utilize AGM technology?

HA: Yes, that's correct. You can call it AGM, for "absorbed glass mat," but it is also referred to as a "starved electrolyte" battery. Layers of lead plates are separated by layers of glass mat, and the mat is soaked with electrolyte. Once assembled into a bundle, the alternating lead and glass bundles are compressed as part of the manufacturing process. Most manufacturers achieve about a 10 percent compression. Through the use of robotics, Northstar Battery has been able to come up with over a 30 percent compression. This means that we can get a huge amount of plate area into a smaller space. The critical consideration is the amount of plate area in contact with the electrolyte, so the bundle can be compressed without loss of capacity.

Another advantage of a Meridian Battery is that if you should split the case, the battery isn't going to leak. All the electrolyte is contained in the glass mat.

NW: Isn't it true that an AGM battery can be installed in any position, except maybe upside down?

HA: You can't install one upside down. You'll notice on these particular batteries that there's a unique feature. Any sealed battery has valves in it, and falls into a class we call "valve-regulated lead-acid batteries." If you reach a case pressure of (in our case at least) five psi, then the vents open. It takes a serious overcharge to reach a case pressure of five psi, but when you do you're venting hydrogen gas. On our particular battery, if the valves should ever open the gas will go into this vent chamber, here on the top of the battery. The vent chamber is an excellent feature, and we go a step beyond that. We have two plastic nipples on the vent chamber so we can install plastic tubing. We can use the tubing to daisy chain the

batteries together, and then drain the gasses overboard anywhere we want.

In Fort Lauderdale, we do a lot of Feadships and other big boats. Most of them fall under SOLAS, GMDSS requirements, which means they have to have a back-up battery bank for their electronics. Typically, that's under the helm, where all the electronics are.

When we have batteries under the electronics, we don't want to run the risk of the battery charger going crazy and venting corrosive gas onto the electronics. In a case like that, we use the remote venting feature and vent the batteries out the side of the boat.

NW: Are the vent tube fittings fairly well exclusive to the Meridian Marine product line?

HA: Yes, it's a very unique solution. It allows us to do rack-mount installations. Rather than have batteries stuck all around the engine room, we just weld up a stainless rack, install a number of batteries on their sides, and use a single vent for all of them.

NW: Do Meridians make good starting batteries?

HA: Yes, because of the compression factor we have a tremendous amount of plate area in the battery and that gives them excellent starting power. Take a look at our 115-amp model for example. Most people would consider that a very compact battery, its four and a quarter inches wide and 15 inches long. We just did a refit on a 150-foot Trinity, with a 53-litre, 1,800 hp 3512 Cat. The starting bank consists of two of these batteries combined to create 24 volts.

Take a look at our 210-amp model. As you can see, it is rated at 1830 cold cranking amps, and most 8Ds are rated at about 1200. We have about 50 percent more cranking power in a battery that occupies only half the space.

NW: What are the sizes most commonly purchased by pleasure boaters?

HA: We just follow the standard marine ratings. We sell a lot of 115-amp, 130-amp, and 210-amp batteries to boaters. By putting two of those 210-amp batteries into an 8D box, all of a sudden you have created a 420-amp battery.

Most of the 8Ds are 200, 210 or 225 amps, depending upon who built the battery. The term 8D refers to case size. Our 210-amp battery is sort of in the middle, capacity wise, with most of the 8D batteries on the market, but it's only half the size. Putting two of these into the space traditionally occupied by an 8D creates a battery that is about double most 8D units. That's why I ask people whether they would prefer to have twice the power, or only use up half the space.

NW: How about deep-cycle durability?

HA: Consider the typical, off-the-shelf flooded cell 8D battery. At 50 percent discharge, you're looking at 200 to 250 recharge cycles before that battery is done. With a Meridian, you can get over 800 cycles from 50 percent discharge. The deeper you discharge a battery, the fewer cycles you are going to get. A standard 8D discharged to 80 percent would be lucky to survive more than about 100 cycles. A Meridian discharged to 80 percent will last for over 500 recharges.

NW: How has the marine market responded to your product so far?

HA: Well, Boat Electric is a good example. They waited a little while and studied the idea before they turned in their first stocking order. Sales in the Pacific Northwest have exploded, with batteries all but flying out the door. Boaters love these. We're providing batteries to many manufacturers, including Hinckley, Palmer Johnson, Direktor Shipyards, Lyman Morse, and nearly all the high-speed, custom sport-fish guys.

While most Pacific Northwest boaters won't be purchasing a Hinckley in the immediate future, it's fun to realize that our boats could rather realistically have a battery in common with such a prestigious craft. Next time the batteries wear out, it might be well to consider a newly relevant question when replacing them: "Do I want to use half the space, or enjoy double the power?"

For more information about Meridian batteries, please call Boat Electric at 206-281-7570. ■