

Keeping users informed

Equipment analysis and predictability are key



Carling Technologies' Rick Sorenson

Richard W. Sorenson is President & CEO of Carling Technologies Inc., a major manufacturer of innovative monitoring and control equipment and systems for a variety of industries, including marine. Carling has long had an ownership relationship with Maretron, which it strengthened in early 2019. At that time Carling merged the NMEA 2000 product manufacturer into its corporate structure, continuing Maretron's product line as a brand of Carling Technologies (see *MEJ* Jan/Feb 2020, p. 44).

Sorenson is also an avid yachtsman who has been known over the years to press his personal boat, the 120 foot motoryacht *Sandrine*, into service as a test platform for various electronics and electrical equipment.

Our goal in talking with the boss was to tap his unique combination of technical experience and passion for boats for a wide-ranging discussion about marine electronics. Sorenson graciously sat down with us at METSTRADE—the Marine Equipment Trade Show—in Amsterdam last November.

Q In today's environment where just about everything electronic is connected 24/7, and then you stir in AI (artificial intelligence) and AR (augmented reality), where does monitoring and control begin and end?

Sorenson There's been a total revolution and not only in marine—it's in virtually all areas. Monitoring and control are all based on information from everything. The more information you can gather the more areas you can address to provide a benefit. You have to go for the whole pie and gather everything you can—see what you can use now and in the future. We're seeing that not only in the marine business but, of course, in automobiles like the Tesla, where everything is monitored all the time—what the vehicle is doing, what road it's on, what's the driver doing and so on.

The more information you have the more you can apply AI to improve your analysis and predictability of various things that are happening so you can let the customer know—that's key. Things like, you're going to have a problem here that needs to be addressed. Or you can do something better now because we have learned what you want. Information is key—that's where the revolution has led. With our system we're able to incorporate much more information—learning and determining what we can do with it to better serve the customer.

Q Any discussion about monitoring and control has to include talk about automation. What is your definition of automation and how is it manifested?

Sorenson To me it's taking the human element out of an area where something is produced. There's a need for flexibility and ability to learn. With robotics, automation has become more sophisticated. By applying AI and greater computing power automation has also become more sophisticated and better and ultimately, I believe, will replace people to a huge degree. We're partnering with a company—Palladium Technologies—that is extremely well versed in AI. We will provide electrical systems for super megayachts. We're putting more capability in our system to gather information.

In the first quarter of 2020 we will introduce in our AC breaker panels the ability to monitor current. Every breaker can monitor the current for that load and report it. We're incorporating AI for predictive analysis—it will let you know if an air conditioning compressor or refrigerator motor or whatever is headed for failure and should be replaced before it breaks. This gives you awareness and safety before a breaker trips. It will plug in seamlessly with our existing panels. You get awareness and safety ahead of time.

It's the same with automation. The more information and processing power that's there and the more experience the software gets, the more we can determine better ways to do things. That's where we're heading—AI will become a huge factor. Mike Blake at Palladium feels that ultimately a lot of software won't have to be written by a software writer but rather you can define what you want the software to do and a computer with AI can provide the best program to accomplish the job.

Q I hear that Carling is supplying electrical components for cruise ships.

Sorenson We're in the process. Our current system operates primarily on NMEA 2000® for vessels up to 140 feet. Our sweet spot is 25-foot center consoles up to around 140 feet. Palladium is in a different league. They've been addressing super megayachts and now small cruise ships. We have bids in with Palladium on programs that are in development. One that's in place is for a cruise ship that's over 200 meters long with 15 decks. We'll manufacture for Palladium's Titan

System distribution panels where the ship will have one main panel (that we won't be doing) that will feed out to distribution panels with 12 of our 4-pole F-Series breakers. Each one of those panels will feed 12 Octoplex breaker panels. On this bid there are 84 of these distribution panels—all of the 20,000 circuit breakers will be monitored at the same time and can be turned on and off remotely. One of the benefits is that it will save 20 tons of wiring.

Q *With many boat builders and manufacturers using their own in-house installers rather than traditional independent dealers—what's your take on the future of the servicing dealer?*

Sorenson The key is for dealers to develop extremely knowledgeable and capable personnel who can address service issues. Many dealers sell products but don't have anyone who knows how to use a NMEA 2000 test meter to see what's happening on the bus. We see it all the time.

For distributors going forward, they have to have people who can address the problem. For manufacturers like us there's nothing worse than going through a distributor that can't service the equipment and the customer is furious. That's why we have to be tough and qualify our distributors better. They have to take NMEA courses and have the right tools.

Q *From the perspective of the installer what is the biggest challenge to building your systems into a vessel?*

Sorenson A big challenge is that often the sales team doesn't have the knowledge to serve the OEM builder and help them install the system because things have become so sophisticated. We see that sophistication more in AC applications—there's a huge safety issue because of the dangerous power source. It needs to be handled correctly. We've taken the approach at Carling to do the service ourselves. Now with Maretron we have taken on a dealership organization so we have to qualify dealerships. We have held back the AC portion because of the liability issue. If we do it directly we're confident it's done right.

Q *Who trains Carling's installation/service crews?*

Sorenson Training comes from within our factories. We put together a good training program. We'll be training dealers the same way.

Q *If things go wrong in one of your installations, where will that likely occur?*

Sorenson Could be a lightning strike, which would cause a problem for the end customer. We've had software go out that had glitches we didn't catch. We had to put in more stringent controls, but nothing's perfect all the time. If that happens we take care of it, even if that means sending people out to do the job. The customer has to be served in the best possible way. We have field application people around the globe.

Q *It's well known that occasionally you use your boat Sandrine to test equipment. Do you still do this?*

Sorenson Yes. [In one test] we went way beyond the parameters that NMEA 2000 had in place as far as number of nodes and cabling for the network. We went with dual bus communications for safety backup—one for our equipment and one for other manufacturers. We found tremendous conflicts in the early years. One large manufacturer had a certified product that shut down the bus—and they didn't want to admit it. The other bus kept working. They finally admitted the problem and fixed it.

Q *There's a lot of interest here at METS in alternative power sources for propulsion. Looking down the road, what's your take on hybrid electric and electric technology aboard vessels?*

Sorenson For marine, it will be hybrid with generators running on fuel. With all-electric the massive storage required without generators to recharge would be too great. Automobiles are different—they can be recharged easily.

Q *With all of the sophisticated interactive and autonomous equipment and systems that are central components of modern vessels, what are your thoughts on the boat of the future?*

Sorenson Autonomous operation. Tell the boat where it's going and it will avoid obstacles. You can program it remotely and the boat does everything itself. **MEJ**

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