



Story And Photography BY BILL PARLATORE

During a visit with Tom Sutherland at the Miami Show, he invited me to attend a two-day service school hosted by his company at its Taunton, Massachusetts, headquarters. Tom, Westerbeke's director of sales and marketing, is one of the driving forces behind this new program, now in its second year. It is a chance to get dealers and service technicians from all over North America to visit the Westerbeke facility to get the latest training in troubleshooting procedures, see company operations first hand, and meet many of the 80 employees who produce the bright red product lines of generators and propulsion engines. The program is a big success. Connecting names and faces with voices from the phone is enormously beneficial in a business that is as service oriented as this one.

With six classes scheduled this year and enrollment in each limited to 30 people, technicians come from far afield. Each class becomes a melting pot of like-minded tech folks. The reality is that distributors and dealers are the front line in customer service, and the program does an admirable job in keeping that focus.

Although Westerbeke is a small company, it connects into a large worldwide operation—with over 65 distributors globally and over 600 Westerbeke dealers alone in the U.S. to support the marine industry.

The morning of the first day I met men from Puerto Rico, New England, California, Toronto, and Arizona. After brief introductions of the instructors, the sessions soon delved into the guts of troubleshooting, installing, sizing, and other details of the Westerbeke line of brushless-exciter, brushless-capacitor, and brushless-transformer generators. (Yes, much of it was over my head, not surprisingly.)

It was impressive to hear one of the instructors, Russ Hagan, go over genset back-end issues with the brushless-capacitor version—the simplest and most basic of the three types of generators. Even I understood his lecture and the simplicity of maintenance this genset offers.



I quickly learned that Westerbeke tries hard to focus on training service personnel to be able to diagnose the actual problem rather than simply replace units or parts. In a world of modularity and consumable throwaways, if only a simple diode needs to be replaced, it is much better for everyone if such a diagnosis and repair can be conducted in the field by trained technicians. Swapping out an entire unit to have it diagnosed later at the distributor is a wasteful and expensive practice.



Fausto Goncalves (left) and Brian Bertocchi (right) represent the can-do attitude of the Westerbeke staff. These two men—who together hand build every Westerbeke generator over 15kW—are a wealth of experience and knowledge. Impressive.

And as back-end and rotor are produced as a matched set, this diagnosis philosophy makes even more sense. Raising the technical abilities in the field—in other words, on a customer's boat—makes for a happier boat owner.

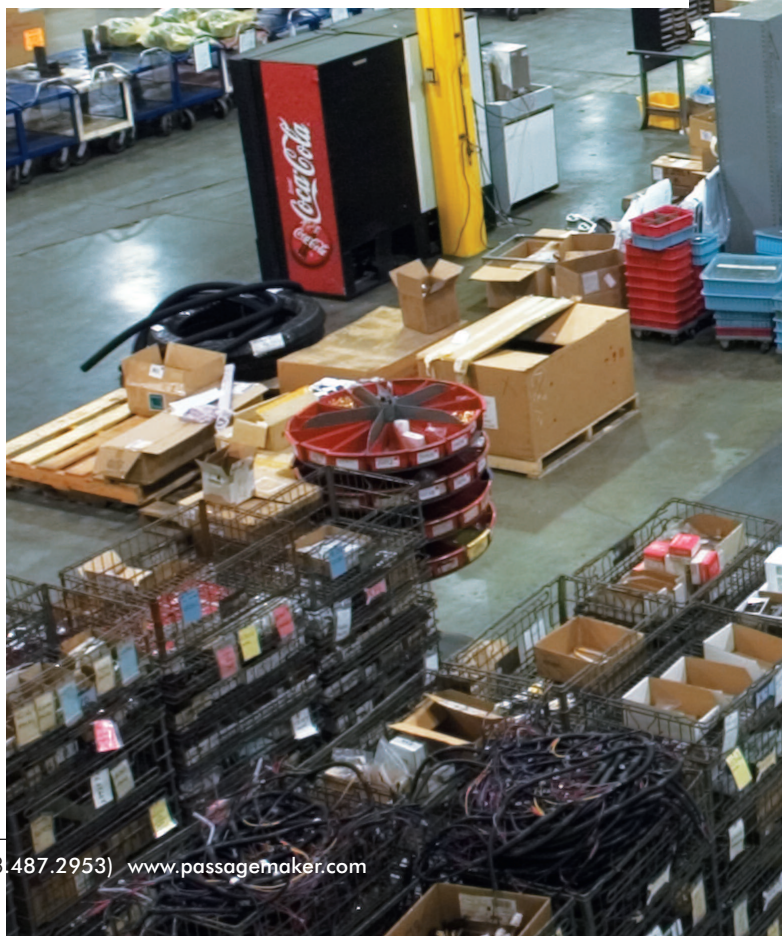
I also realized, from the nature of the questions asked by the students, the magnitude of issues that are out of the hands of field personnel. Service folks

have little control over how a boat is built, especially when it comes to electrical systems. Managing the loads on the various legs of power generation is hard to modify after construction. This makes life interesting for service technicians when a generator is improperly sized and installed. Being put in the middle between builders and owners is a fact of life for these technicians.

As a spectator of sorts in this service school, I observed a most fascinating phenomenon. As the level of technical difficulty and gearhead intensity increased—inverse to my ability to follow along—so did the interest level of both students and instructors. The class members sat on the edges of their seats as Russ Hagan answered field questions about testing and replacing the six diodes of a rotor out of a brushless-transformer generator. I followed as best I could, but exciter windings and resistance values—and their relationship to a bridge rectifier and

its back-end circuit paths—flew over my head. I can assure you, however, from my experience with these 30 men, that Westerbeke service technicians know this stuff really, really well, and that they show genuine excitement when exploring this subject matter.

As I noted this observation, I heard that reversing polarity by accident, when manually exciting the rotor circuits, will result in smoke...and maybe flames. That brought a roar of laughter, and the faces in the class looked at each other with knowing smiles. Everyone's done it once, it seems.



Top: Diesel engines as they arrive from several manufacturers, awaiting conversion to become Westerbeke products with the use of additional components from around the world. Above: Westerbeke parts go onto the engine in a subsequent station in the assembly. This worker will also check the work done by the previous station and keep track of any issues or problems found. This quality assurance process works well. Inset: Pumps and other essential parts are stored in bins for use in the assembly process. The company's just-in-time philosophy means that there are dozens, not thousands, of such parts kept in the Taunton facility.



I guess becoming a generator-service technician isn't on my list of New Year's resolutions. I would need some serious training to get to the levels of those sitting around me. Troubleshooting complex equipment can't be reduced to easy-to-follow consumer procedures—the complexity and inherent high-voltage danger is real.

Left: The first step in assembly is to remove parts and gear not used in the final product. Below: A view of the assembly floor, just one end of Westerbeke's 110,000-square foot facility.





In my experience, many service technicians—computer techs come to mind—just keep trying things to make it work again. They may eventually fix the problem without really knowing what they did. (The previous night, I had tried to get WiFi to work on my laptop in my hotel room. Two hours later and two calls to a help center, and it just started working...not sure how. But that's another story.)

If computer troubleshooting is akin to carpet bombing, the Westerbeke approach is closer to laser-



Top: Old conventional manufacturing equipment still has a productive life at Westerbeke, and employees have the craftsmanship to use it on a regular, if not frequent, basis. This is a band saw from the early 1900s. Above: The latest computer-controlled drilling, shaping, and other tooling equipment allows for precise and consistent production of custom parts for the Westerbeke line.

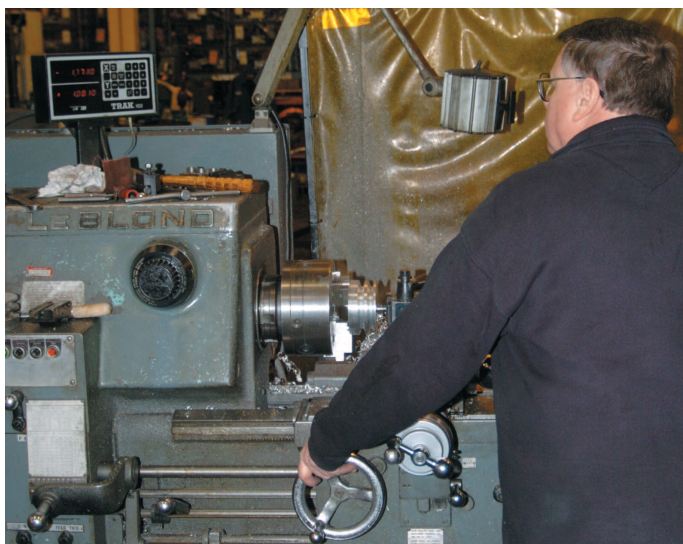
guided munitions to take out a specific floor in a chosen building.

Joe Joyce somehow kept my attention while discussing electronic governing, and Tom Sutherland covered exhaust systems, a big problem in some installations. The instructors had over 100 years of collective experience, and it was very evident. The service school provided lots of pertinent information

with loads of technical grist. It was well worth the trip to New England for all of us.

ON THE FLOOR

Later, we got a full tour of the 110,000-square foot facility the company moved to in 2000. It was a real treat to see firsthand the 50 people on the floor who take engines from Kubota, Mitsubishi, Mazda, Isuzu,



and Tohatsu, and create a Westerbeke product. The full line of Westerbeke power and generator products includes 56 models of diesel- or gasoline-powered generators and propulsion engines, with 75 percent of its production in power generation. Each model is fully marinized, engineered for rugged service, and built to balance performance with reliability. The back-end gensets are built to Westerbeke specifications in Italy. In fact, global sourcing is a part of most manufacturing today. (Westerbeke buys components from 12 countries.)

Even using parts from around the world, about 20–25 percent of a genset is made up of custom Westerbeke components.

The individuals on the floor have specific roles in the assembly process, representing the manufacturing

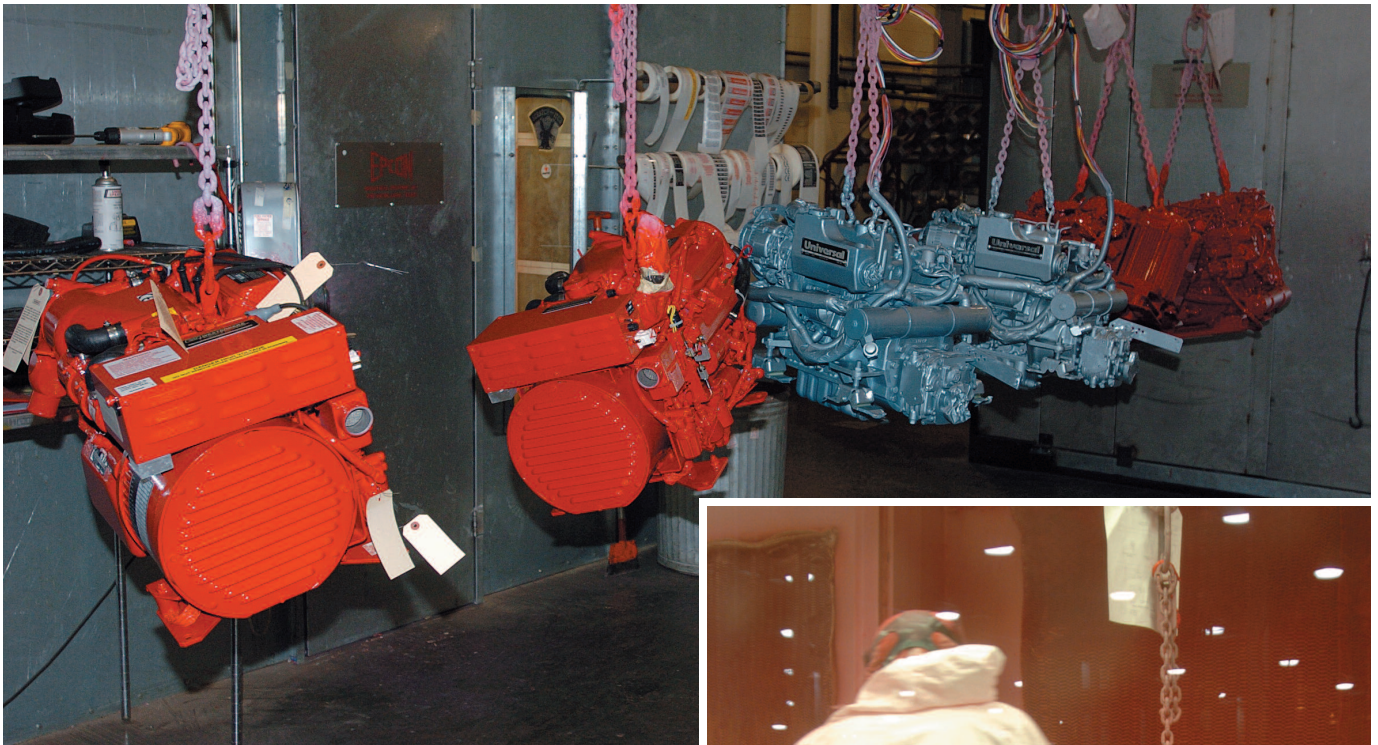


philosophy of the 70-year-old company, started by the late Jack Westerbeke in 1937. Once a worker completes his or her task, the unit moves to the next station in the assembly process. The worker receiving the unit checks the work of the previous person, and so it goes through the entire assembly. Viewed this way, each subsequent station is “the customer” of the previous one, and the quality of work is checked as the unit moves from one station to the next. It is a system that works. All discrepancies found are noted on a white board. At the end of each day, the supervisor makes note of all reported problems or issues and manages quality control accordingly. It is a statement of Yankee pride.

As I talked with workers performing their tasks, I learned that most of them have decades of experience. The head of mechanical subassembly, veteran employee Art McAllister,



Top: George Shaw crafts a pulley on an enormous lathe that is older by decades than this author. Middle: Every engine and generator is run for an hour on a dyno in a special room. Computers collect data on each engine, and every factor of the engine or genset is evaluated before it continues toward completion. Bottom: Preparation for painting includes masking parts and giving the unit a thorough washing.



Top: Coming out of the baking oven that cures the paint, every engine and generator receives its various labels, model plates, and other tags. Above left: Bolted to a pallet, another new Westerbeke unit is readied for shipping worldwide. Above right: Inside the elaborate and high-tech paint shop, a generator is painted in the familiar bright red that has become Westerbeke's signature.

shared the strong personal connection of this team. "We're like Harley Davidson," he told me, "We build just a few products but really well." And it goes deeper than that, as he commented, "It's just people here. You just like to be here."

The unusual blend of conventional machinery and computer-controlled equipment is the product of a conscious attitude of using what works best for each purpose. I saw a 100-year-old Armstrong-Blum band

saw that still cuts stock for pulleys from long bars of metal. The cut pieces then go to an ancient English lathe, where 19-year veteran machinist George Shaw uses them to make a freshwater pulley.

Manufacturing Manager Bob Bisanti later told me that the older equipment is ideal for low-volume production, such as producing a replacement pulley for a 40-year-old engine, and he assured me the company still has the craftsmen to do that.



Every assembled engine or generator is tested for one hour on a dyno, and, in the case of gensets, a load bank.

It takes about 2 days to build a generator from start to shipment-ready, and the pace of assembly matches the volume of units leaving the facility to distributors worldwide. A safety stock of each model is kept just in case of unforeseen demand, but there are not hundreds of completed generators and engines sitting on shelves hoping to be sold. It is just-in-time manufacturing.




“We are a major player, but we’re a small company,” Tom Sutherland said as he explained that the company produces 5,000 to 6,000 completed engines and generators a year. We then walked over to one area where I met Brian Bertocchi and Fausto Goncalves. These two guys hand build every Westerbeke generator over 15kW. They perform every aspect of assembly up to the dyno testing bench. To do their jobs, they must know every model of every genset inside and out—and they represent the heartbeat of Westerbeke Corporation: commitment, accountability, Yankee pride. And it’s all about pride.

Someone told me that Jack Westerbeke would routinely tell his employees, “I don’t care if we make a million dollars this month, as long as we pay our bills and we all go home with a paycheck.”

And that attitude continues today. As Tom Sutherland explained his company philosophy, he summed it up rather well: “We’re small enough to listen, but large enough to get it done.”

The statistics prove it, too: Westerbeke’s staff of 80 manufactures up to 6,000 units a year. That statistic says a lot.

Thanks, Tom, for an opportunity to see things come together at Westerbeke Corporation, and to show us that not all marine products come from giant corporations with a mechanized lack of personal involvement. Big Red is all hands-on. 



Top: Russ Hagan going over troubleshooting procedures for the full line of diesel and gas generators. Above: Service techs take a tour of the facility, with tour guide Bob Bisanti explaining the progression of activity and answering questions from the group.