

THE CHANGING ART OF SAILMAKING

Before →

It can be hard to decide when to replace an older sail.

← **After**

But when the new sail is hoisted, the difference is clear.

SAILMAKERS HAVE SEEN A LOT OF CHANGES IN RECENT YEARS—AND NOT JUST IN SAIL DESIGN AND MATERIALS

+ BY DIANE SELKIRK

It was an afternoon sail that made us aware we had a problem. We were working our way to windward in near perfect conditions: 12 knots on the nose with moderate seas. All around us sailboats were heeled over and tacking smartly up the channel, while we were just loafing along. After trimming both sails repeatedly, and still making no progress, we admitted defeat. We turned on the engine and motorsailed shamefully to our destination.

As a catamaran, we don't expect to point like an America's Cup boat, but we do expect to get upwind in favourable conditions. So our poor windward performance either meant our boat really sucked and we were destined for a life of downwind sailing, or it meant the secondhand re-cut sails that came with *Ceilydh*, our Wood's Meander 40-foot catamaran, were due for replacement. ▶



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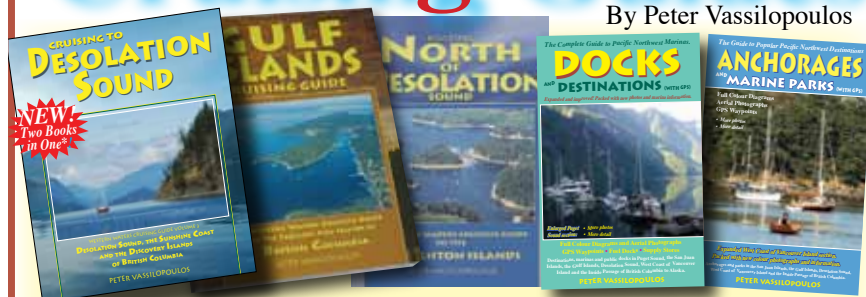
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[Left] A North sailmaker applying carbon-fibre thread to a high-tech sail. **[Below]** A 3DL mold in North Sails' plant in Minden, Germany.

Almost any sailor can tell you a fresh set of sails will make an old boat as nimble and lively as a little girl in a new party dress. But as I looked up at our foresail, which to my uneducated eye looked like your typical genoa, I realized I had absolutely no idea how to tell if our sails were worn out.

Fortunately, the Pacific Northwest is home to a number of experienced sailmakers including Dave Miller, whose family has been making sails in the area since the 1950s. Miller, who now represents North Sails, says cruising sails can last 20 years or more in our northern latitudes, but they can begin to lose strength after just a few seasons. Miller explains that sail material breaks down two ways: through UV exposure and when the fibres are repeatedly bent over time.

"It's a gradual process," he says. "As the fabric ages and stretches, the sail loses shape, gets fuller and the position of the draft moves further back. When a sail is really old it can tear like paper."

While our sail fabric seemed intact, it was clear our performance was suffering. Miller says if we were a monohull with worn out sails, we would have found ourselves heeling over more and we would have noticed that our increased weather helm was causing more leeway. In our cat's case, the clue we needed new sails came when we noticed our tacking angle had become comparable to that of a square-rigger.

Sailmakers have been around for as long as there have been sailing ships. Most sailors can appreciate the beauty of a well-designed and well-cut sail, but it's harder to fully understand the role a sailmaker can play in optimizing the performance of a vessel.

Even with a common production boat, fitting a boat for a new main or jib involves far more than hoisting a mass produced sail. Dave Cross, who's been a sailmaker with Quantum Sails for the past 11 years, explains that each boat is



different, and every owner has distinct needs. He says the sailmaker's job is to build a sail with a custom fit, and it's important for the sailmaker to measure every boat in-person, keeping an eye out for things like how a boat is rigged and if there's any added equipment (such as a dodger) that could affect the sail.

The sailmaker will also want a clear idea of what the boat is used for: serious racing, day sailing or cruising offshore. From there they take into account your budget and try to get an idea of how long you expect your sail to last. Cross says a common error boat owners make is deciding on the exact sail they want and trying to make sense of all the material options out there before even speaking with a sailmaker.

"Sailmakers are there to help boat owners narrow down the choices," he says, adding that material construction is a bit of a black art. "Sailmakers have a feel for what cloths will work with their designs."

Changes in the Industry Despite new high-tech rigs and boats, the basic sail shape, which uses aerodynamic >

WHAT HAPPENS TO OLD SAILS?

▶ Sail cloth is bulky and lasts a very long time. Dave Cross says that sending the old material to take up room in landfills is something they avoid at Quantum Sails. While sails that still have life left in them can be re-cut and sold to other boat owners, sails that have done their time need

more creative solutions. Cross says he's worked hard to network with several community groups that can make good use of the unique material, "It's very strong and light, and some

of it is very colourful. We've sent it to school art programs, preschools, theatre groups and movies sets."

Some sail material makes its way to companies such as Red Flag Designs www.redflagdesign.ca, which turns old sail cloth into cool new bags.



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lift to propel a boat, has only evolved in subtle ways. But while sail shape has remained fairly constant, the fabrics that sails are made from have undergone a revolution. The new materials (which range from tried and true Dacron to a variety of complex proprietary laminates), are now stronger, more stable and control stretch much better than ever before. But Tim Knight, a long-time sailmaker with UK-Halsey Sailmakers, points out that some of the premium priced high-tech fabrics simply don't last,

"They're more sizzle than substance."

At the same time that sail fabric has become more technical, sail production has also changed. Not only do the new materials require high-tech systems of manufacturing, but computer advances have made robotic plotters and computer-controlled laser cutters mandatory equipment in nearly every loft.

The new equipment is expensive, but Miller explains many companies are managing the increased manufacturing costs by centralizing production.

"I'll meet with a customer and find out what they need, measure the boat and then send the plan off to a designer," says Miller.

From there, depending on the sail, it can end up travelling across a continent or two before it gets back to the boat. The sail plan might go to a cutting facility where all the cloth is cut and the sail materials are assembled, after which the material may be sent off to be sewn at a large production site.

Miller says the large-scale centralized production means every customer has access to the best designers and the best equipment, so the resulting sails are the highest quality and best possible value for the customer. Miller, who's been in the business for decades, says the shift to more efficient production began in the early 1980s. Before then, he worked in his family loft and completed the entire process; from measuring, to making, to hoisting the finished sail himself. But these days he says he's more of a salesman than a sailmaker.

Knight feels that traditional sailmaking is in danger, but not because they've moved production offshore. He says the real risk is from sail lofts that sell on the Internet or try to build sails as cheaply as possible.

"Sail lofts should be in places that have a sail making culture," says Knight. "Where sails can be made by someone who knows what a sail should look like."

Knight adds that when companies set up lofts wherever labour is cheapest the workers often end up being exploited and sometimes the consumer ends up with a sail made from unknown materials. Knight says an offshore loft like the one UK-Halsey has used in Hong Kong for the

[Below] Two sailmakers making repairs in the Sidney UK-Halsey loft.



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past 20-years are well proven and use the right fabrics and the best hardware.

Cross, who continues to build sails in-house at the Quantum loft in North Vancouver, says the pressure is always on them to centralize production as well.

"It's important to us to stay true to that idea of complete service," he explains. "And I guess I'm attached to the

romantic image of what a sailmaker is."

Cross discovered his love for sailmaking as a racing junior who discovered he could make his boat go faster by re-cutting his own sails, and says that sailmaking is a bit of a dying art. Miller agrees, noting fewer and fewer people are interested in learning the trade.

Cross estimates the Vancouver area has lost about five lofts in the last decade and notes that the entire West Coast is down to roughly five or six lofts where sails are still built in-house.

"A lot of the little lofts have fallen by the wayside. They couldn't compete against the pressure of centralized manufacturing."

One problem Cross sees with offshore manufacturing is in the gradual loss of sailmaking knowledge and skill as more and more sails are built offshore in huge factories by people who have never even sailed.

"We have lots of experienced sailmakers in town, with a wealth of knowledge," but Cross explains with so much ▶

RECUTTING OLD SAILS

▶ Not every old sail needs to be replaced. Dave Miller, from North Sails, says that after two to three seasons, racing sails may be good candidates for recutting and reshaping, and after five to eight seasons, cruising sails should be looked at.

A typical re-cut costs between \$100 and \$500, and most lofts in Vancouver can still do this work in-house. The best way to get the most out of your re-cut is to take several pictures of the sail when you're hard on the wind and bring these images to the sailmaker.

TO PHOTOGRAPH YOUR MAIN Lay under the boom midway between the mast and the clew. Angle the camera so that when you shoot up at the head of the sail, you get as much of the sail in the image as possible. Take pictures in a range of wind strengths.



FOR THE JIB Lay on the deck at the mid-point between the tack and the clew. Angle the camera so that when you shoot up at the sail, you get as much of the sail in the image as possible. Take pictures in a range of wind strengths.



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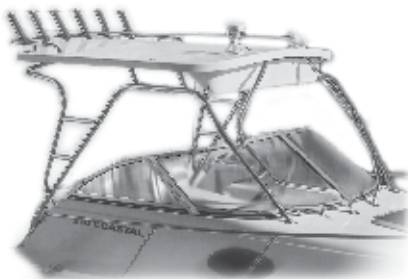
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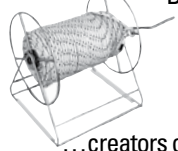
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sail production moving offshore that no one is coming up through the ranks to take the old sailmakers' places. "What happens when people like Dave Miller step down? We'll be left with people who call themselves sailmakers who don't even know how to sew."

[Above] Attaching mainsail track slides by hand in the UK-Halsey loft.

The last step in having a sail built is when it is returned to your boat and hoisted. If you look at any sail, you'll see a history lesson. Within the cut of the draft and the curve of the seams you'll see the layers of knowledge and skill that each generation of sailmakers added to the cloth.

I thought about this as we unfurled

our new genoa for the first time. I admired the softly billowing shape and watched it become taut and sleek as we winched it in and headed up. Then I held my breath as we tacked and then tacked again.

We made our way smartly and quickly up the channel. And I began to cheer as our new sail allowed us to tack past a monohull. He may not have known we were racing, or it may have been time for him to see a sailmaker, but with our new sail we beat the pants off of him. ☺

SELECTING A SAILMAKER

► While it can often come down to price when choosing who should build sails, Tim Knight points out that the caveat, 'you get what you pay for' holds true for sails too. While it's important to keep to your budget, he says there's more to selecting a sailmaker:

INTERVIEW THE SAILMAKER

While they should ask what you need you should also be asking questions about what

their service includes, where their sails are made, what type of hardware is used on the sails and what type of fabric the sails are built from.

DON'T BUY INTO A SALES PITCH Take all the info you're given and take your time doing research, a good sailmaker will make sure all your questions are answered.

VISIT THE LOFT Even if your sails are built elsewhere,

they'll be repaired or recut locally, so check out the facility.

ASK FOR REFERENCES, AND NOT JUST FROM HAPPY CLIENTS Ask to speak to someone who had a problem that needed solving.

GET A SECOND OPINION Talk to more than one sailmaker and see who fits your needs most closely.

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