UNC Sea Grant

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COAST WATCH

They all laughed when Cap'n Briggs went sailing

Just try to tell a hardworking commercial fisherman, supporting a $100,000 mortgage and a ton of gear, that he needs a sailboat. Tell him to "let the wind supply the horsepower."

He'll suspect a cologne-scented bureaucrat has been hatching memos again. Or, he'll laugh the whole thing off as a joke.

And that is exactly the way Captain Lane Briggs' career as a sailing waterman began— as a joke. Briggs is a native of North Carolina's mountains who says he knew he'd spend his life on the water "the first time I ever saw the sun rise over Wrightsville Beach." Since that morning, Briggs has put in 30 years as a fisherman, tugboat captain and professional waterman.

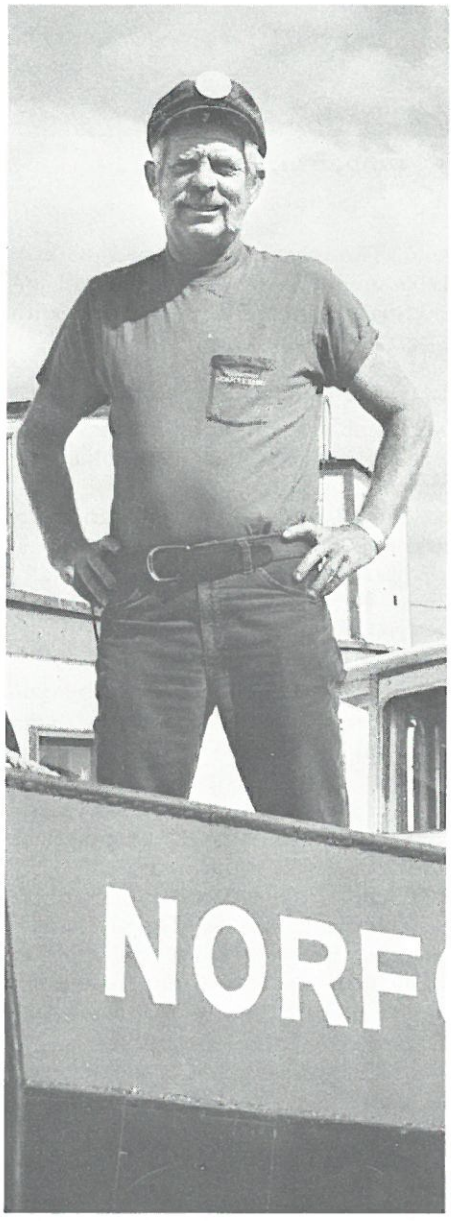
The joke? It began in 1975, when Briggs decided to throw a dockside crabs-and-beer blast, featuring a pre-party sailboat race.

"I wanted all the people around the dock to join in," Briggs says, "so I made a rule: 'If you want the crabs and beer, you have to race a sailboat.' "

That sounded fair enough until someone pointed out that Captain Lane Briggs did not own a sailboat. Briggs' company, Rebel Marine, does a lot of tugboat and salvage work out of Norfolk, Va., with some commercial fishing on the side. You don't need a sailboat for that sort of thing.

But Briggs is a sport, so he went to work on the *Steel Rebel*, his tug.

"It all started as just sort of a prank," he says. "I'd salvaged an old mast and some stuff, and just rigged up a squaresail on my boom, and also added a jib. . ."



Lane Briggs aboard his tug

The *Steel Rebel* was not the world's loveliest sailboat. For cloth, the crew hoisted an old parachute, a tablecloth and a few other odds and ends.

"You've never seen anything more peculiar than a tugboat rigged for sail," says Kathy Hill, Rebel's office manager and a member of the crew. "We ran up everything but the cook's underwear."

The *Steel Rebel* wallowed through the race like a sow among the swans. But she finished, with help from the diesel. The crabs and beer were fine, too.

"Then, a couple of days later, we were towing a barge on the bay," Briggs recalls. "We hadn't bothered to take down the masts and sails. We had a good breeze at our backs, and I looked down, and we were doing a full knot better than our usual speed. So I eased off the throttle and finished the job in less time with less fuel. After that, I made some adjustments and squeezed another knot out of her. We tried several different combinations of sails and rigging, and finally got to where we were going faster and using a lot less fuel."

Briggs says the gaff rig that he settled on lowered his fuel consumption about 30 percent. With a tow, it increased his speed 3.5 knots— even more on a light run. The joke was paying off, but there was still a lot of laughing on the waterfront.

"Everybody thought I was nuts for a while," Briggs says. "That was when fuel was still thirty or forty cents a gallon. Now that it's over a dollar,

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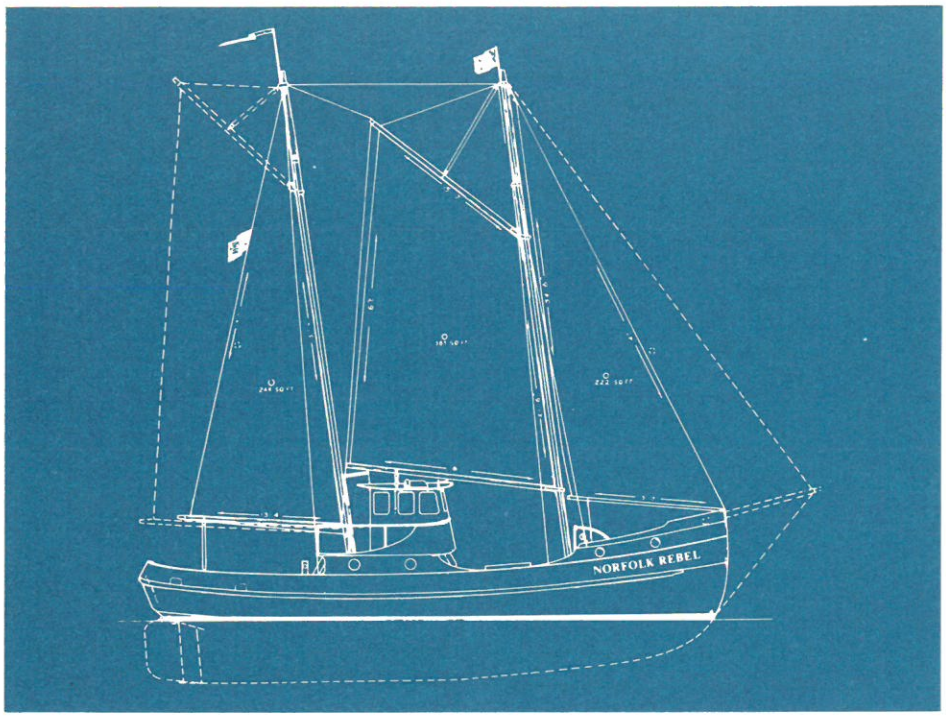

The "Tugantine," with spars or "gaffs" supporting its sails

they're taking a little more notice."

One of the people who took special notice was Merritt Walter, a naval architect from Norfolk.

"He kept telling me my boat couldn't sail, according to all the rules," Briggs says. "But since it was sailing, he said 'just think what we could do if we had a boat designed to use sail.' "

The old *Steel Rebel* did have a serious limitation: because of the hull design, she could not sail upwind. But Briggs was so convinced the wind was saving him money that he told Walter to design a new boat. The vessel was to be a diesel-powered, sail-assisted tug set up to double as a commercial fishing boat.

Financing was the first obstacle. Briggs was proposing a $300,000 risk—a newfangled design with no track record.

"The bank took a good, hard look at it, and decided to go along," Briggs says.

The keel of the new boat was laid on April Fools' Day, 1978. Not since Noah began his Ark had there been such chuckling.

The *Norfolk Rebel*, a steel-plated, light tug, 51 ft. long, was launched May 22, 1980. From the water line down, she's a sailboat, trim, with a full keel. But she also sports a 320-horse V-8, assorted electronic gear, and a fish hold. The masts are designed to carry 1200 square ft. of gaff-rigged sail, including a foresail that can be used with a retractable bowsprit.

Walters and Briggs had conceived neither a sailboat nor a conventional workboat, but a hybrid for which there was no nautical term. They coined the name "Tugantine."

"We all held our breaths during the first trials," Kathy Hill remembers. "With a new design, you never really know how it will perform. But it worked beautifully. She was practically turning on a dime, and wasn't squatting or digging in the way you might expect a sailboat to do under that kind of power."

"Our idea is using sail to assist the diesel," Briggs says. "It's not all sail. I don't think that would be practical, with the work we have to do."

There are a few disadvantages to the sails, Briggs admits. Getting under some of the bridges is a problem. For some of the deck work, the main boom has to be raised out of the way. And, Dacron sailcloth is expensive.

But Briggs says that in the first year he sailed the *Steel Rebel*, he saved enough on fuel to more than pay for the sails and rigging. He claims that he can bid a job lower and make more profit. And, the extra time devoted to sailing, he says, is counted in minutes, not hours.

Based on his experience with the first boat, Briggs expects to use the *Norfolk Rebel's* sails about 50 percent of the time he's working, saving about 40 percent on fuel.

"I feel I can sail to and from the fishing grounds, and put less running time on the engine," Briggs says. "And, if my engine breaks down, I don't have to pay somebody to tow me in. I sail home."

He'll try longlining and bottom fishing, mostly, since the longer the run, the better the efficiency under sail.

Rebel Marine has been awarded a $72,000 grant from the National Marine Fisheries Service to rig the boat with sail.

"Captain Briggs' project is the first we've supported this way," says Ed Loughlin, energy coordinator for the NMFS office in Washington, D. C. Loughlin says the government's backing for the project is based on the belief that sails offer some hope to the nation's commercial fishing fleet, which is being hounded, nearly to extinction, by the cost of energy.

Loughlin estimates that, for trawlers, about 57 cents of every dollar in overhead is spent on fuel. The average shrimper burns a gallon and a half for each pound of shrimp he hauls home, Loughlin says.

In exchange for the grant money, Briggs has agreed to formally analyze and document the performance of the boat. He has gotten help in doing so from the Sea Grant program at the Virginia Institute of Marine Science (VIMS). Sea Grant specialists at VIMS helped Briggs write the grant proposal. Part of the grant will be used to pay a researcher on the project.

"We want to see how the boat performs over a range of wind conditions and working conditions," says John Lucy, Sea Grant's marine recreation specialist at VIMS. "We also want to find the optimum ratios of diesel and sail assist, to spell out what combinations might save a fisherman the most money."

"I think you're going to see a lot more fishermen trying the idea," Briggs says of wind power. "When fuel was cheap, they just went ahead and designed boats for brute power and carrying capacity. But who can afford the fuel anymore? Sometimes, you just get to hurtin' so bad you have to change, whether you want to or not."