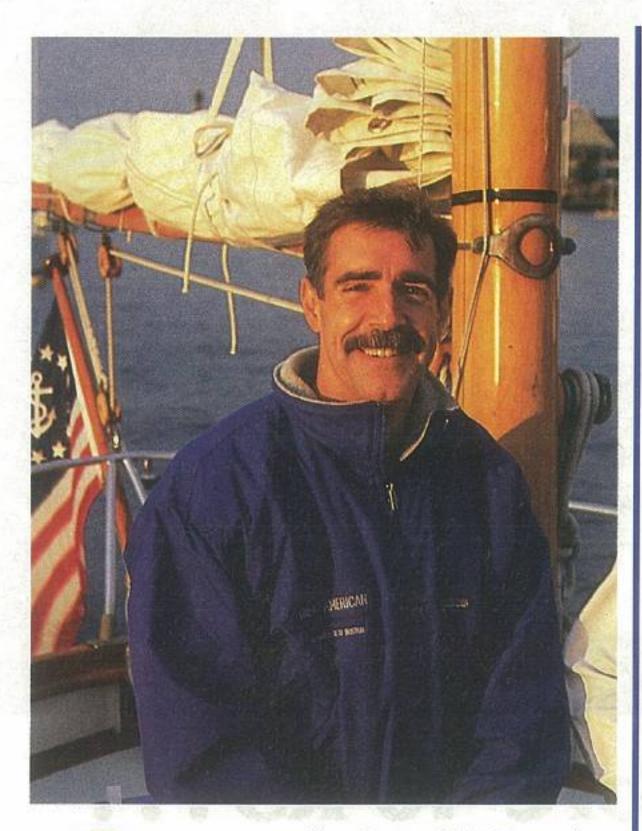
# ARE YACHT BROKERS WORTH THEIR SALT? A CAHNERS PUBLICATION \$2.50 S3.00 Conada OCTOBER 1991 式(引)引/李 Thrilling adventure off Cape Horn Fathers, sons, and sailboats New systems for simpler reefing

## SHAPINGCOURSE

From the editor

## The ultimate management skill



s we were sailing Boston Light home after the July Fourth weekend, we passed a 35foot sloop hard aground in Boston Harbor. The vessel was way off the channel, lying on her bilges, her keel resting on one of the big harbor's many ledges. She was not in danger. The 9-foot tide would soon be on its way up, the sloop had a dive boat standing by, her sails were furled, her crew seemed calm, and there seemed not much for us to do but wave in sympathy.

Making mistakes is part of sailing. It's so easy to end up aground. A careless moment, a buoy transposed, a badly set anchor—and suddenly there's not enough water. Keeping ourselves afloat where we meant to be is part of seamanship. And seamanship is really a management skill; it involves every aspect of sailing.

"Preparing to go offshore is like writing a business plan. Success is related to how well you have anticipated every eventuality. And only a rigorous respect

Rich Wilson aboard Holger Danske, the boat he skippered to an overall Bermuda Race win in 1980 for the sea can drive that level of detailed planning," says Rich Wilson, who, with his partner, Steve Pettengill, aboard the trimaran *Great American* in the fall of 1990 tried to break the west-to-east round-the-Horn record set by the clipper ship *Northern Light* in 1853 ("Cape Horn Capsize," page 59). The freedom inherent in sailing at first seems antithetical to the rigidity of planning, but in fact preparation lies at the heart of seamanship.

When I asked Rich the inevitable "Why?" he gave the inevitable answer: "Challenge. A challenge mentally because we had to prepare a complex piece of heavy equipment to thrive in a hostile environment and then sail it skillfully and competitively. A challenge emotionally, because help was not readily available. A challenge physically, because the workout was continuous."

A lean, fit young man, Rich is neither enormous nor aggressive in appearance. He knows brains rather than brawn is what matters on a small boat in a big body of water. He has learned that "hope has no role at sea," and after his adventure off Cape Horn, he believes more than ever that singlehander Francis Stokes was right on when he said, "The sea finds out everything you did wrong."

Before Rich raced the 1988 Carlsberg Singlehanded Transatlantic Race he took his own advice. Seamanship begins with "listening, reading, planning, and doing," he believes. So he had "endless conversations" with Phil Steggall and Walter Greene, both solo veterans, "about equipment, rigging, and tactics." He adds, "An appealing aspect of the C-Star singlehanders was their universal humility. Each had been terrified sometime offshore and knew that there were forces there that could never be conquered, but that might be accommodated if you were well prepared."

Rich began preparing as a child when he raced onedesigns, cruised with his family in New England, and absorbed as much seamanship as he could from his father, John, "the best I ever saw in readying a boat to go to sea." For this voyage he and Pettengill put one manyear of labor into improving *Great American*, the New York-to-San Francisco record holder.

But Rich Wilson's story is not really about a race or about breaking records. SAIL is devoting seven pages to his exclusive account because it reflects so much of what sailing is all about. It involves bravery and resilience and endurance. It involves tenacity and risk taking. And best of all, it shows that, in the last ditch, it's seamanship that matters most of all.

Patronie Wales

A lesson in seamanship

By Richard B. Wilson

n October 22, 1990, the trimaran Great American (ex-Livery Dole IV, ex-Travacrest Seaway) left from San Francisco on a 15,000-mile marathon

New York-San Francisco record in 1989.

Besides the course record Wilson had additional goals: to share the adventure with the American public; to prove the viability of corporate sponsorship in sailing; to make people aware of asthma—Wilson is a severe asthmatic and the American Lung Association; to use the adventure

to teach schoolchildren (Student Ocean Challenge wrote and

race to Boston via Cape Horn. Skipper Rich Wilson and Cape Horn veteran Steve Pettengill intended to break the 76-day, 6-hour record set in 1853 by the clipper Northem Light.

Built in 1982 to a John Shuttleworth design, Great American was 60 feet long and had a 40-foot beam. Sailing her was like sailing a tennis court. Because of the "uncertainty" of Kevlar and carbon fiber, new materials for boatbuilding at the time, extra epoxy and

proved herself when, sailed by Pettengill and Georgs Kolesnikovs, she knocked 12 days

cisco at the start of her epic voyage

glass were added for strength. Compared to today's lightweight multihull flyers, she was bruisingly strong and could carry the gear and supplies needed for a threemonth, open-ocean battle. Great American had already

off the clipper Flying Cloud's Great American sails out of San Fran-



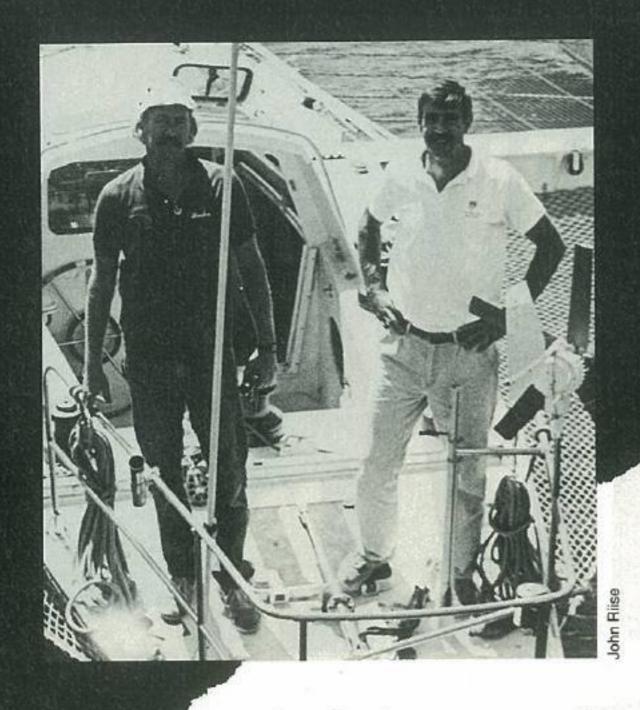
## Pettengill (left) and Wilson pause during preparations in California

On Friday the Southern Ocean chastised us with a dangerous spinnaker wrap. We untangled it in a wild three hours, but vowed to sail conservatively until our final approach to the Horn. Our three-day lead over Northern Light was enough; we wouldn't press for more now. We wouldn't press for more now. We would sleep more, eat more, and warm the cabin with the Balmar generator, because a low-pressure system was whirling frigid air north from Antarctica.

On Saturday we slowed Great American to a 200-mile day, but the next day we let her speed up to improve steering and tracking. Two hailstorms chattered on the deck, and 35 knots of wind built 20-foot seas.

The weather deteriorated through

The low that capsized Great American was centered 1,000 miles west southwest of the boat's position in the early evening of Tuesday, November 20. In 24 hours it "exploded" (the National Weather Service's word) into a 940-millibar storm and raced 850 miles at 35 knots to put the tri in its worst quadrant. The inset map below shows Great American's position at dinnertime on Wednesday, November 21. In the Southern Hemisphere lows rotate clockwise and in these latitudes move west to east. The windlest quadrant is to the northeast of the center. Heartbreakingly, the trimaran did not capsize until about 1030 local time Thursday, November 22, after the low had passed and the boat was in the northwest quadrant. The capsize occurred at 55°9'S, 79°11'W, about 400 miles west of Cape Horn.



a grade-school curriculum). Here is Wilson's gripping story.—Ed.

#### Racing against a ghost

A track coach used to tell me to start out fast, pick it up in the middle, and kick it home. We followed that advice: Great American sprinted quickly to a 20-hour lead over her "competitor," the clipper Northern Light, as she rushed south along longitude 126°W. But as we skirted hurricanes Trudy and Vance, heading west out of Mexico, and lost the northeast trades in their lee, Northern Light, clouds of sail billowing in our imaginations, surged past us to a 150-mile lead on the tenth day out. Two days later the lead changed hands again; as we crossed the equator, we caught Northern Light lying 350 miles east-northeast.

For five days we bashed into the southeast trades, pressing for speed. But our push took its toll on the boat. A crossbeam fairing cracked from the bow-wave onslaught; we fiberglassed it over. Shackles failed in the mainsail leech reef system, requiring ever larger replacements; and, incredibly, the 8-inch stainless-steel mainsail headboard carriage peeled back like a pop top. We re-engineered it with threaded rod and shackles.

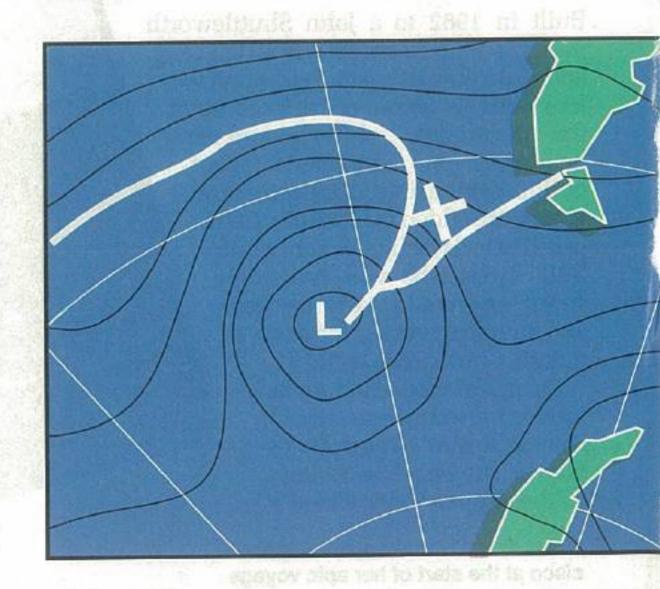
Between Easter and Pitcairn islands we sighted our only vessel, but could not raise it on VHF. We did reach Mr. Martinez's fifth-graders at the Miraloma School in San Francisco, who had visited us at the dock before the start, and were rewarded with their wonder and excitement. Through our daily calls to 1-

900-820-BOAT (to record messages so the public could follow our progress by phone and to fund the ALA and SOC) we befriended operators in New Jersey, Florida, and Sydney, Australia. San Francisco was 5,000 miles astern, Antarctica 2,000 miles ahead, Chile 2,000 miles to port, and Australia 3,000 miles to starboard. The Southern Cross constellation rose and beckoned us to the lonely Southern Ocean.

#### ■ Approaching the Horn

The Horn is the Horn because it is a bottleneck. The Chilean Andes sweep south and the Antarctic Peninsula reaches north to form between them the 600-mile-wide Drake Passage,

through which weather and wave systems funnel. At these latitudes low-pressure systems tend to march west to east one after the other, with hardly a break in between. The rotation of the South Pacific High forces any mariner rounding the Horn from the west to jump into the Southern Ocean westerlies far upwind. Thus, on November 15, the Thursday before Thanksgiving, we lined up our approach to Cape Horn from 2,000 miles to the west-northwest.



SAIL OCTOBER 1991

Monday, but slowly enough to let us build our defensive position. The mainsail went from two reefs to three reefs to four. At last we took the main down altogether. It would never reappear. Only the staysail clew peeked out from its roller-reefed furl around the staysail stay.

We payed out five knotted warps over the stern to slow the boat even more, but with 45 knots of wind now driving 30-foot wave slopes, *Great American* still surged to 16 knots. Warps six, seven, and eight accumulated critical drag, slowing us to 9 knots—fast enough to steer and to limit being pooped; slow enough not to bury the bows, trip, and somersault. Our intent was to "stretch" the boat down seas and wind to aid steering: front-wheel drive to pull the bow forward, warps to drag the stern back.

The map from the Furuno weatherfax showed a low-pressure area ahead trailing a cold front behind us. Its undramatic isobar compression and bend offered a regular wave pattern.

After comparing the three "players," the gravity of *Great American*'s undertaking and the miracle of her crew's rescue become clear.

Great American had an LOA of 60 feet, a beam of 40 feet, a draft of 11 feet with the board down (3 feet with it up), and a sailing displacement of 10 tons. Her mast rose 75 feet above the water, and she had a crew of two.

Northern Light had an LOA of 200 feet including bowsprit, a beam of 36 feet, a draft of 21 feet 9 inches, and displaced 1,021 tons. She had 10 times the sail area of Great American and carried a crew of 58.

New Zealand Pacific has an LOA of 815 feet, a beam of 105 feet, a draft of 30 feet, and displaces 62,000 tons loaded. Her deck is 35 feet above the water. She carries a crew of 36 and loads 2,200 containers.

Our conditions reflected the weather map and our daily radio forecasts from professional meteorologist Bob Rice and shoreside router and interpreter Bill Biewenga, both back in New England. Our barograph descended gently. We were on course for our waypoint, off the continental shelf 60 miles south of Cape Horn.

#### ■ The low grows

Tuesday evening the barograph took a 45-degree dive. A Buenos Aires weatherfax failed to explain the drop. At midnight *Great American* broached, the daggerboard in the main hull grabbed, and I was thrown from the bunk to land flat on my back 5 feet down. I checked to make sure I was unhurt, then forced myself to laugh to break the tension.

Since we had already raised the board as far as we could using its cockpit-led control lines, I had to go forward of the mast to raise the board further and reduce its lateral bite in the water. The 40-foot seas were so menacing that it took me 20 minutes to get up the nerve. Even though I was tethered by my safety harness, if a sea swept the deck I would be in danger, while if the boat capsized I would be fastened underneath. Acutely focused, I crawled forward and raised the board 18 inches.

Wednesday morning we broached again, but we sideslipped smoothly. Raising the board had helped. By afternoon 70 knots of wind pushed seas to 50 feet. The barograph dove past 29 inches and headed for the cellar.

Conditions worsened markedly later in the day. The wind howled at a soprano's pitch. The anemometer readings became erratic—had a cup blown off? Waves crested into 15 to 20 feet of white tortured tumult at the

top; then the foam blew off. Two hundred monsters per hour threatened to overturn *Great American*.

What a sport! No time-outs when the game plan goes awry; no substitutes when exhaustion sets in; no referee to keep things fair—just another thousand 50-foot-high walls of water that want to do you in.

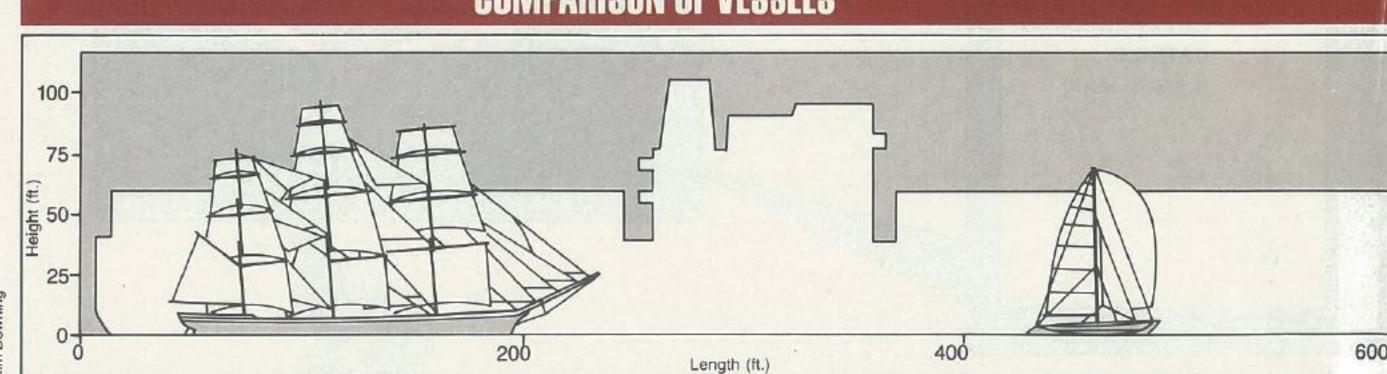
We kept our ham radio sked and joked blackly that the barograph was running out of paper. We radioed our weather advisers, whose forecast we interrupted at "You should see 54 knots" with "We've got over 70." We were running out of options.

Great American was 500 miles west of Cape Horn and 400 miles off the Chilean lee shore. On course for our waypoint, we took the seas 10 degrees off our starboard quarter. If we slowed further, we risked being pooped and broaching from reduced steerage. If we straightened downwind, we would close faster on the Chilean shore and need a sharper and more dangerous hardening up later to make our waypoint. An escape course to the north would roll the boat over.

At midnight the barograph tracer hit the bottom lip of the recording drum and flat-lined across it at 28.35 inches. That was a first! The mountainous seas pushed our bare-poles average to 12 knots. Steve added four more knotted warps to the eight we already trailed astern to bring the speed back down to 9 knots. The nightmare ran through the graveyard watch. The wind shrieked; seas broke like thunder; splotches of white foam invaded from the blackness, then faded to blackness again.

Thanksgiving morning, November 22, a monstrous sea roared aboard and stripped the two Aerogen 3 wind generators, one of its blades and the other

#### **COMPARISON OF VESSELS**



Kim Downing

of its tail. A sleet storm slicked the decks. The trim tab came unpinned, threatening to overpower the powerful Robertson autopilot. We took turns going out to reset, pin, and lash the tab. The zero-degree wind chill made a simple job numbingly difficult.

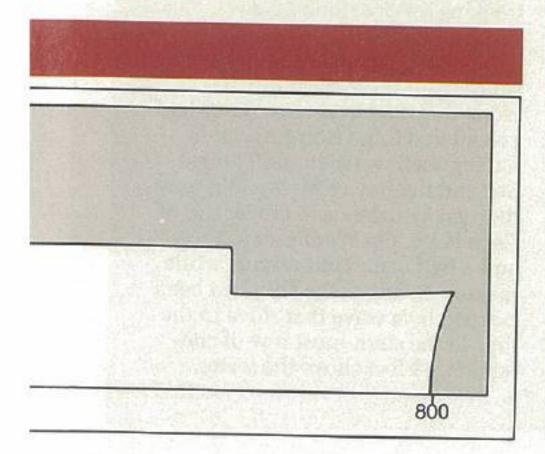
Safely back inside, I plotted our position as 55°S, 79°W and stared at the weatherfax map. It didn't show anything like this. I leaned over to the barograph, dead on the bottom of the drum for 10 hours. Things couldn't get much worse; pretty soon they'd have to start getting better. The Trimble GPS had us still on course. Steve heated some soup.

Soon Great American rushed down another mountain and slewed to starboard. She heeled alarmingly, as far as she had when I was tossed from my bunk. Then she kept going. I braced myself in horror. Gently, she went farther, paused at the point of no return, then kept going and turned upside down.

#### Capsized and righted

Scrambling instinctively, neither of us was hurt. Although we were stunned, we couldn't afford the luxury of panic. The Southern Ocean had ripped the companionway door off, filled the wheelhouse, and covered the main-cabin ceiling. Standing shin-deep in 40-degree water, we grabbed our survival suits and helped each other to struggle into them. The Lexan escape hatch let in enough light to see by. A lens had been knocked from my glasses; I found my spare pair. The swell of the waves into the cabin compressed and decompressed the air, hurting our ears. The water level stabilized.

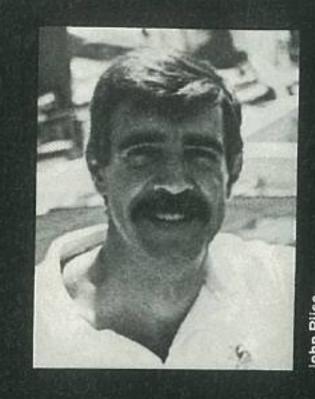
Grim reality replaced shock. We were 400 miles west of Cape Horn, in a little-used downwind trade route.



Upwind help from Chile would have to wait for calmer weather. We turned on the ACR 406-MHz EPIRB. The strobe was flashing, and we hoped the signal was good. The stern deck-mounted Argos satellite transponder was unreachable; we planned to swim later to retrieve it. An hour later, Steve was sitting on the underside of the shelf that was the foot rest for the chair in the doghouse. I was standing on the main cabin ceiling. We were taking a breather while sorting debris, and neither of us was braced. With no warning, the grandfather of all waves wrenched the water-laden trimaran out of the water, spun her, and slammed her violently back down, upright again. Thrown on my head, I was submerged in suddenly much-deeper water in the cabin and didn't know which way was up. Trying every direction at once, I burst through the surface, and heard Steve yelling. My spare glasses were gone. Amazingly, again, we were not hurt.

The 1,900-pound rig, intact upside down, had acted as a 75-foot-deep keel. It was now draped across the aft starboard crossbeam and dangled into the water. The huge aluminum section was not just buckled, but torn into separate pieces at the gooseneck and the first spreader. The gooseneck was ripped off the mast stump, and the massive boom lay in three distinct pieces. The hanging mast weighted the stern down and kept the boat dead in the water with her starboard quarter to the seas. The cockpit was awash, the winches at sea level. Every wave rolled through the cockpit, burst into the open companionway, then swept through the wheelhouse and the length of the cabin.

Everything had broken free down below. The water column contained tools at the bottom, clothing in the middle, and food, books, and, hurrah, my contact-lens case and asthma inhaler at the top. A box of plastic wrap

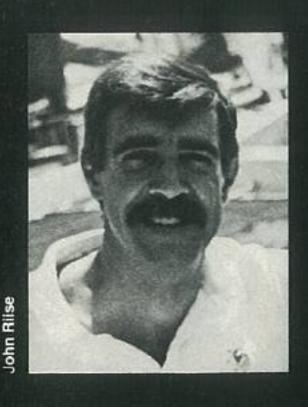


WITH NO WARNING, A
"GRANDFATHER" WAVE
WRENCHED THE WATERLADEN TRIMARAN OUT
OF THE WATER, SPUN
HER, AND SLAMMED HER
VIOLENTLY BACK DOWN,
UPRIGHT AGAIN

unrolled, streamed, and twisted in the surge, threatening an unbreakable entanglement.

With the main cabin neck-deep in water, we wondered whether we had been better off upside down. But now we could retrieve the Argos and life raft lashed behind the aft starboard crossbeam, and we could confirm the integrity of the hull (we found all 10 compartments in floats and crossbeams were still watertight). An athwartship bulkhead amidships walled off a forward compartment, which was divided into a port sail locker and a starboard stores locker. Forward of this bulkhead, water filled the deep bilge and spilled only slightly over the floorboards.

We moved the Argos, EPIRB, flares, and life raft forward, lashing the solar-



**INSTEAD OF A HOT** THANKSGIVING DINNER, **WE HAD COLD CANNED** HAM ON WASA BREAD **AND FRUIT JUICE** 

on deck. The bulkhead separating the chain locker would be our last line of defense. Great American's watertight compartments and awesome strength gave us utter confidence that she would not sink. Our worry was hypothermia. We kept our survival suits on to our waists and our Splashdown foul-weather jackets on top since their inflatable bladders gave us valuable insulation. Through the night we huddled together in the

sail locker on the spare genoa under a wet sleeping bag. The EPIRB was propped to starboard behind the daggerboard trunk to shield our eyes from its strobe. It happened to be just beneath the Lexan hatch-a coincidence that was more important than we could have imagined.

Steve, to his credit, actually slept. I couldn't, but used the time to plan. We didn't know if the beacons were transmitting, so we had to plan on rescuing ourselves. We would drop the rig over the side either with bolt cutters or by pulling pins, thus lightening and lifting the stern. We would stream the warps and spare sails from the bow to pull it into the seas and shield the cockpit. We would lash plywood across the companionway to seal the cabin. Then we would pump out the 20 tons of water, either electrically (the gel cells still had a charge) or by hand. With an unburdened and intact hull, we could maneuver under jury rig. In the dark, the maelstrom continued.

#### ■ Rescue

At 0230 I gradually realized that a new sound had joined the cacophony outside. This one was different-it was

powered Argos on deck. For four hours we pumped by hand until the forward bilges were dry. With every wave the main bulkhead flexed from the weight of water in the main cabin, but we gained confidence that it would hold. The surge forced air through wire holes in the bulkhead, making an annoying whistle.

We were cold and wet and tired and scared. We didn't talk about the scared part, but we did talk about resting and trying to get warmer and drier. We had capsized two hours before our intended hot Thanksgiving dinner of foil-packed turkey stew; now we had a holiday meal of cold canned ham on Wasa bread and fruit juice. It wasn't what we'd hoped for, but we were alive and unhurt, and for that we were thankful.

We had seven weeks' worth of food, 6 gallons of fresh water, and shelter. If the bulkhead let go, we were poised to move forward to the chain locker, although we would have to enter from

WHAT IF...

After our Argos distress signal had been received and plotted, New Zealand Pacific, 100 miles southwest of us, was contacted via SAT-COM.

NZ Pacific, the world's largest refrigerated containership, diverted, doglegging her course to keep from rolling the deck containers overboard. Captain David Watt reported Force 12 winds with seas a "shocking" 20 meters high (65 feet). The ship arrived at our location in darkness and found nothing. We were not expecting speedy assistance, so we were resting and not attempting to keep a lookout.

Just as NZ Pacific turned to move off until dawn, an engineer looked out the window of the officer's lounge and saw the strobe of our EPIRB less than 50 yards away. If we had not placed the EPIRB under the Lexan hatch, he would not have been able to see it. The engineer alerted the bridge. The ship arduously circled, approached,

blasted the horn, and picked us off.

The next day the story of the rescue unfolded. The EPIRB, misregistered as a land unit, had signaled Scott Air Force Base; puzzled by the oceanic position, they alerted Coast Guard New York three hours later. Argos, set off when the second wave righted us, signaled a base in France, which called Coast Guard New York, reaching them first. AMVER, a shiptracking service, found New Zealand Pacific.

To a man, the ship's professional sailors said these seas were the worst they had ever seen. They had considered Cape Horn overrated, having seen worse in the Tasman Sea and the Bay of Biscay. But now they gave credence to the legend of Cape Horn. On Wednesday, a day and a half before our rescue, while making 22 knots, the ship had been pooped by a wave that stove in the tops of the stern-most row of containers, 43 feet above the water.

-R.W.

low and uniform. It had to be manmade! I jumped up, waking Steve, and opened the hatch. To starboard shone the superstructure lights of a wildly rolling ship. Its spotlight illuminated us; it was there to find us.

Great, I thought, there's a ship here—but how are we ever going to get on it? Aboard Great American we were safe. Boarding a rolling ship in these appalling conditions could be deadly. We might miss the transfer and go in the water, or we might be crushed between the two vessels if they surged together at the wrong time. Both of our hand-held ICOM VHFs had been lost, so we had no communication. We didn't know what its crew was going to do. Whatever it would be, we had to be ready.

We briefly debated whether we should wear survival suits or foul-weather gear for the transfer. Survival suits would be better if we went in the water, but their clumsy mitts made it hard to grip a line or ladder; foul-weather gear would improve our grip, but only until our fingers were numbed. Survival suits got the call.

The ship turned upwind, revealing boxes on her stern—a containership. Her bow was very far forward—a really big containership! How in the world were they going to get us off? I felt like a spectator at my own rescue.

The ship drove to within 300 yards. The lit name New Zealand Pacific appeared. Good, I thought, knowing the Kiwi seafaring reputation. A lit door opened in the ship's side, 20 feet above the water. Four silhouetted men worked in earnest, not frenzy—another confidence boost. Closing relentlessly, they revealed their intention. In 40-degree, 45-foot seas, in pitch-black darkness, in the 60-knot gale, this huge containership, rolling through 50 degrees, was coming alongside—and it was coming alongside now.

When the ship was 200 yards away, the lit door disappeared as a sea broke into it. The door reappeared. One hundred yards, then 75 yards, and the door disappeared again. This was going to be exciting!

The captain maneuvered his ship brilliantly, perfectly triangulating forward drive with drift to make the door come straight at us. Fifty yards, 30 yards, and two heaving lines snaked through the darkness across our main hull to land, accessible and un-

### **SCOREBOARD**

Our entire effort on *Great*American ought not be judged only by the final drama. We achieved 3½ of our five goals:

- Although no record was set, we did sail to a 5-day lead halfway, averaging 9.3 knots for 6,800 miles.
- We did bring the story to the American public, generating 175 million impressions.
- Although no corporate sponsor took advantage of that exposure, nine equipment sponsors did.
- Through promotion of my story, the ALA made 70 million impressions and reached 2.5 million asthmatics.
- Student Ocean Challenge brought 750 grade schools (150,000 students) to *Great American's* class.—R.W.

tangled, in the netting between our main hull and our far float. A voice shouted to us, telling us to tie the lines around ourselves with bowlines. I shouted to Steve that it was time to go, climbed out of the hatch, and crawled to the aft heaving line, hugging the boom. Steve followed and grabbed the near line. We clumsily tied our bowlines, with the massive black wall of steel now only 15 yards away. We clambered over the boom and mainsail to the starboard float.

The containership's crew dragged an oil bag to calm the crests. They hung a ladder from the door and draped netting next to it. Four seamen on deck readied tethered life rings in case we missed and went in the water. We later learned that the starboard engine had been shut down to protect us from the propeller. Two seamen at the stern had a six-man raft ready to deploy in case we slipped past.

Ten yards, 5 yards, and the ship kissed the float, precisely parallel and with the door centered between our two crossbeams—perfect! The trimaran rebounded; on the next wave, she rose up the side of the ship. The moment had come! It was like all the old Navy movies. The ship is going up

and down, the boat is going up and down, there's the ladder, you jump, you've got one chance. We jumped. I went for the ladder and Steve for the netting. I nailed a good grip on the sides of the ladder, hung on, raised my left foot to the bottom rung, and climbed. Steve got firmly into the netting and climbed too. Friendly hands helped us in the door.

We turned to watch as the great trimaran *Great American*, down by the stern but with her bow held proudly high, slipped slowly down the side of the ship into darkness. She had been our third shipmate; she had delivered us from danger; and we would never see her again. I looked at her one last time, and then the bosun

closed the pilot door.

Richard B. Wilson became the youngest skipper to win the Newport-Bermuda Race in 1980 aboard the wooden Aage Nielsen-designed Holger Danske. Winner of Class V in the 1988 Carlsberg Singlehanded Transatlantic Race aboard Curtana, a 35-foot wingmasted trimaran, he is seeking sponsorship for the 1992 C-Star and for another go at Northern Light's record.

### POSTLUDE

For 18 days we were given the redcarpet treatment by the dedicated officers and seamen aboard *New Zealand Pacific*. Our time on board was an education and a privilege. The crew were our rescuers, and now they are our friends.

We landed in Vlissingen, Holland, on December 10, and Steve and I flew home to New England. I assumed that little would be salvageable from *Great American* and that she would soon hit the South American coast. By New Year's Day, 1991, reports from the still-functioning Argos unit showed that the boat had rounded Cape Horn without us! I moved to organize a salvage. A salvage tug from Punta Arenas, Chile, was available on January 31. Then, on January 25, 300 miles south of the Falkland Islands, the dogged Argos simply stopped. Even if she were still afloat, there was no hope of finding Great American.—R.W.