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Secrets of



THE DENTED shipping container chained to the deck of the rusty barge could pass for an abandoned 18-wheeler, but for the fact that the barge is floating near the center of Lake Michigan. Inside the container, a half dozen faces crowd around a screen, where a blip tracks the location of a miniature submarine diving deep below the barge. The container is the sub's command center, and the blip is an unsatisfying image for the group packed inside, still sweating from the two days spent scrutinizing sonar tracks and blurry video images for the exact location of the sunken ore carrier *Carl D. Bradley*, resting on the floor of the lake 380 feet below.

The screen shows the sub is less than 100 feet off the bottom, where the upper deckhouse of the wreck should just be coming into view. But the sub's lights, stabbing

The wreck of the *Edmund*

Fitzgerald is remembered in

a Gordon Lightfoot song. But

the sunken *Carl D. Bradley*

has gone uncommemorated.

Until now.



the Lakes

By Dan McCosh

into the darkness, are clouded by silt. The viewing ports have become useless opaque discs, glowing with the glare reflected from the murk. On the surface, inside the shipping container, faces fall when the audio link crackles: "Visibility is zero. We're coming up."

This kind of thing never happens to Jacques Cousteau, I'm thinking. But then looking around the container, which is packed with marine history buffs, scientists, divers, journalists, students, and the proprietor of the Boiled Frog bar in Pewaukee, Wisconsin, I figure that Cousteau probably never set out on an expedition quite like this one. Or if he did, he isn't telling anyone.

It is unusual deep-sea research, this diving expedition nearly a thousand miles inland from any ocean. We're

PHOTOGRAPHED BY EDWARD GAJDEL

looking for the remains of a ship that sank 37 years ago—a blip on the screen of maritime history. All of us want to find out exactly what happened that night of November 18, 1958, when the *Bradley* went down, pitching 33 men to their deaths in the icy waters of Lake Michigan. Only two men survived, and one of them, Frank Mays, is here today, peering at the sonar screen.

Bulk cargo carriers on the Great Lakes, some the size of oceangoing supertankers, are the bedrock of heavy industry in the Midwest, carrying the basic ingredients of steel making—iron ore, coal, and limestone. A big ship going down can have as much impact in Chicago, Detroit, or Cleveland as the crash of an airliner. And the treacherous Great Lakes have already claimed more than 5,000 ships.

When the *Edmund Fitzgerald* sank in Lake Superior in 1975, it inspired a popular Gordon Lightfoot song. By then, most people had forgotten the wreck of the *Carl D. Bradley*.

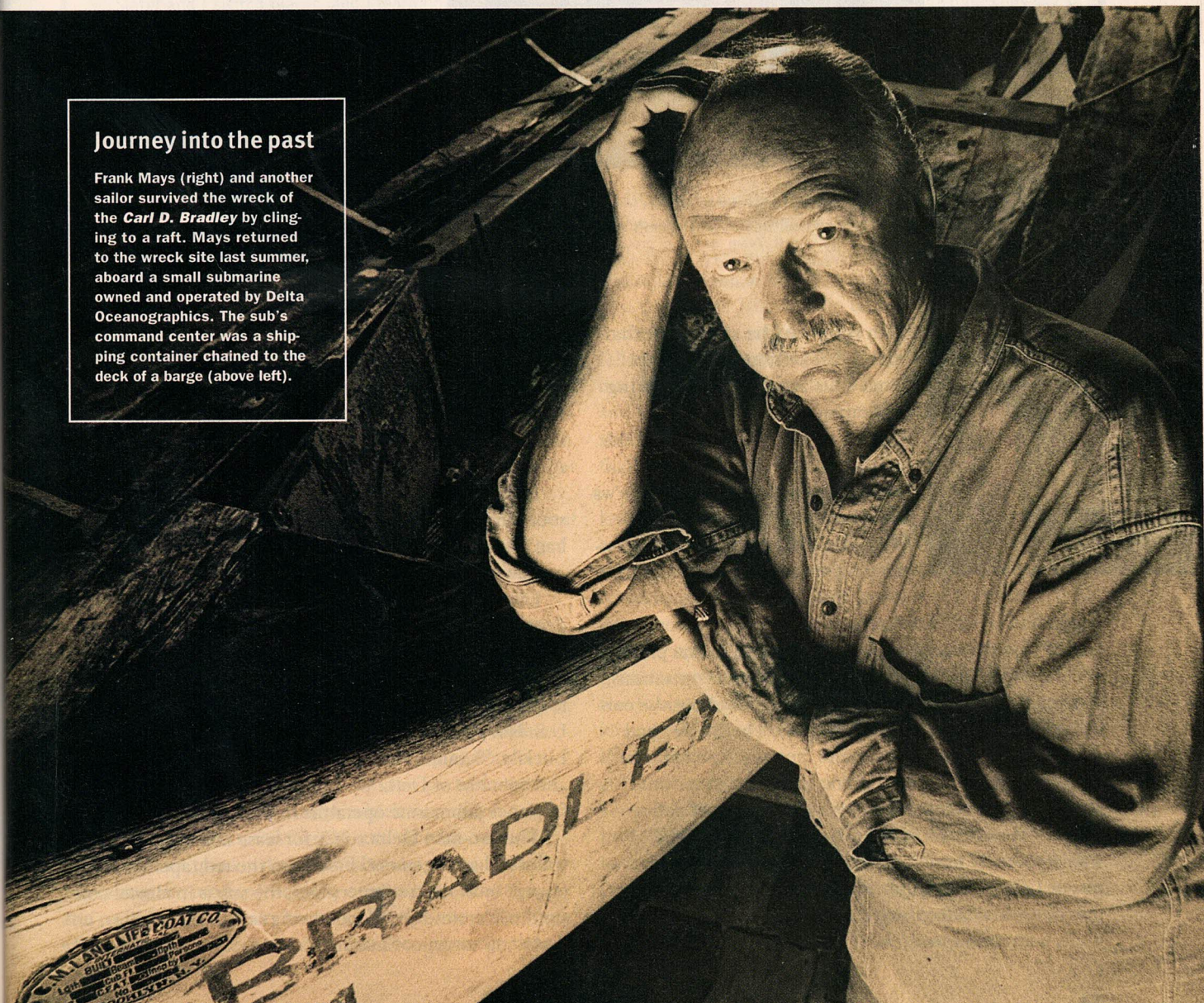
A 640-foot limestone carrier, the *Bradley* was one of the longest ships on the Great Lakes when she set out from Buffington, Indiana, on November 17, 1958, heading north for her home port in Rogers City, Michigan, some 350 miles away. The 30-year-old ship was only middle-aged by Great Lakes standards—fresh water doesn't corrode the exterior of steel plating. She was, however, due that winter for refitting of a rusted-out cargo hold, and a grounding two weeks earlier in a shallow harbor had ruptured a plate that had since been repaired.

A gale was funneling up the lake from the southwest, building waves across nearly 300 miles of open water. By the next day, as the *Bradley* began to cross the upper end of the lake, the storm had worsened and most ships had taken shelter. The wind hit 65 mph, and waves up to 30 feet high piled up at the stern.

Halfway across the lake, only a few hours from the

Journey into the past

Frank Mays (right) and another sailor survived the wreck of the *Carl D. Bradley* by clinging to a raft. Mays returned to the wreck site last summer, aboard a small submarine owned and operated by Delta Oceanographics. The sub's command center was a shipping container chained to the deck of a barge (above left).



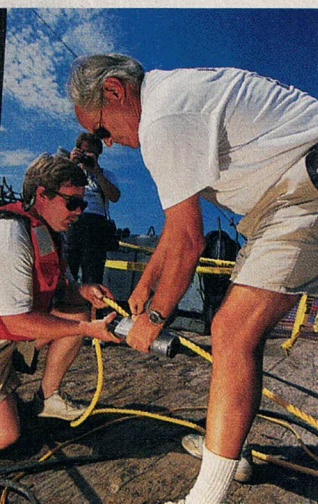
shelter of a group of islands, the deck cracked midships. Less than 15 minutes later, just as the sun was setting, the *Bradley* went down, tossing her crew into the frigid water. With no chance to launch a lifeboat, most died quickly. But Mays and three other men landed near an 8-by-10-foot wooden raft—more of a plank than a raft.

With the water temperature at 36°F, the waves washed over the four men clinging to the raft, until two lost their grip in the night. The first freighter on the scene, which took two hours to go two miles into the wind, nearly ran over the survivors, but the raft was invisible in the darkness because the last flare failed to ignite. Mays and first mate Elmer Fleming drifted until after daybreak, when a helicopter finally spotted them.

Mays went to work in a lumber yard, on dry land, after he got out of the hospital. Today he is retired in Florida. “You know, after five years or so, you just go on



The two-person Delta sub (above) is lowered into Lake Michigan for its descent to the *Bradley* wreck. Team members prepare the sonar equipment used to locate the sunken ship 380 feet below the surface.



with your life,” he says about that night. But an inquiry that challenged his account of the sinking still rankles him.

Mays and Fleming witnessed the *Bradley* break in two, with one half violently throwing them into the water, where they clung to the raft while the stern section rose perpendicularly into the air before going down. But later, an investigation

conducted by U.S. Steel, the ship’s corporate parent, concluded that the *Bradley* was on the bottom in one piece.

The wreck site, too deep for normal scuba operations, was never thoroughly explored, and doubts about the condition of the vessel remain to this day. The *Bradley* had gone down in a storm, to be sure, but exactly what was down there? It was an intriguing question to maritime history buffs, but one that could only be answered definitively by viewing the wreck. The secrets of the *Bradley* would probably have remained immersed in the deep waters of Lake Michigan for all time, save for the interest of a pair of unlikely adventurers: marine artist Jim Clary and underwater entrepreneur Fred Shannon.

Clary paints pictures of ships—more often than not, ships that have sunk in the Great Lakes, or are about to sink. He has an eye for wind, waves, and imminent disaster, capturing in acrylic and canvas the exact moment when a vessel is about to be overwhelmed. This talent has earned him a dedicated following of collectors drawn to the drama and historical accuracy of his work. Clary’s paintings are based on thorough research, including interviews with survivors and witnesses, and sometimes even on his own experiences.

Once, while working on a painting of the World War II attack by Japanese dive bombers on the aircraft carrier *Enterprise*, Clary negotiated a ride that included a tailhook landing on the carrier’s pitching flight deck. A series of paintings of the *Titanic* led to joining a miniature-submarine expedition that eventually located the wreck in the North Atlantic. “I paint storm waves differently since that trip,” he says.

After the *Titanic* expedition, he met Shannon, who shares his enthusiasm for maritime history. A longtime sport diver, Shannon had an urge to explore deep wrecks in the Great Lakes that are out of reach of normal scuba gear. For most people this would be an idle daydream, but Shannon doggedly pursued it, founding a company called Deepquest Ltd. and attracting a small but fervent group of fellow divers, students, and supporters. In 1994, Deepquest organized a minisub dive to the wreck of the *Edmund Fitzgerald*. For Clary, that dive yielded a series of paintings of the famous wreck as it appears on the bottom of Lake Superior.

The success of that expedition moved Shannon to plan another: to explore the *Bradley*, again using a minisub to see the wreck firsthand. Clary would chronicle the expedition and produce another series of paintings. At least that’s what he said when he called to invite me along.

How could I refuse? I could already hear the hissing sound of compressed air blowing ballast. “Bring a sleeping bag,” he said. “And maybe a lawn chair.”

Lawn chair?

Clary and Shannon had already discovered that an underwater expedition isn’t the easiest thing to put together on a budget. For one thing, research submarines are scarce in the Great Lakes. In fact, research submarines are tough to come by almost anywhere, if you aren’t wired to the U.S. Navy or one of the big oceanographic institutes. Luckily, Shannon linked up with Rich Slater, part owner and operator of Delta Oceanographics, one of a handful of freelance submarine operators in the world.

The two-man Delta sub is for lease in a sort of have-sub-will-travel arrangement. Free from the red tape required to engage most deep submersibles, the sub is in almost constant use around the world: diving on oil drilling sites, undertaking surveys of marine life, and exploring earthquake

Learner's Permit

LOWERING MYSELF THROUGH the narrow conning tower of the Delta submersible feels like going down a sewer, a feeling reinforced when the dome-shaped hatch slams shut. No place for claustrophobia, I'm thinking, as I get ready for a dive with David Slater of the Delta research team.

I squirm into a prone position that becomes surprisingly comfortable with the help of a pillow. Circular ports give me a view ahead and below. Slater slides into the upright seat above me, where he has a view through the conning ports.

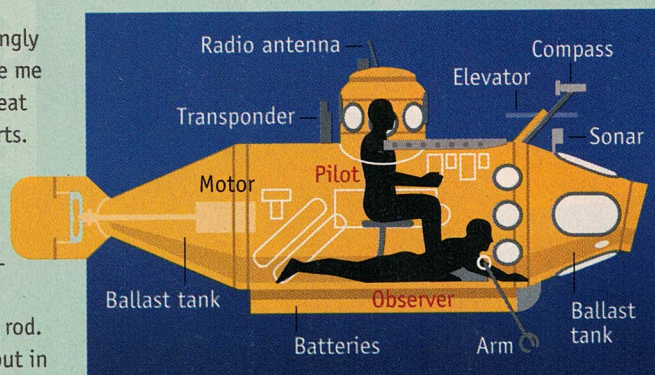
I ask him how much air we have. "Three days," he says, "six if I kill the passenger." Thanks.

Lying on my stomach, I can manipulate the grappling arm, a rod that slides in and out through a swiveling seal that looks like a cue ball with a hole in it. Two levers actuate the three-pronged claw at the end of the rod. I try to pick up a rock. It's easy at this shallow depth, but in deep water the outside pressure can slam the arm back into the sub like a hard shot with a pool cue.

Slater and I switch places, and I learn how to balance the two ballast tanks by venting compressed air. You'd think a small submarine would be as maneuverable as an airplane, but it isn't. The speed—a knot or two most of the time—kicks up to three knots when you hit a switch that doubles

the battery voltage, but even that doesn't generate much flow over the rudder or diving planes, so controlling the sub takes a lot of anticipation.

The biggest hazard is stray wire or rope. If the sub be-



comes entangled, its propeller and aft section can be cut loose, like a lizard shedding its tail. But open hatches and holes in the hulls of sunken ships can provide other ways to become trapped in the tiny sub, which is small enough to sail through a doorway.

Like I said, it's no place for claustrophobia.—D.M.

faults off the Pacific Coast of the United States. "It's the Jeep of the deep submersibles," Slater says.

The sub packs neatly into a shipping container that can be air-freighted to a dive site. The container also doubles as a command post, housing all the necessary equipment for communicating with the sub. Shannon's plan was to fly the Delta sub to Michigan, dive for three days, and then, to offset the cost, sublet the sub to a utility company for a survey of an underwater electric line. The *Bradley* dive would be the 3,687th for the sub. At least that was the plan.

The organizers of Deepquest 95 quickly discovered that even after finding a submarine, you need some way to transport it to deep water. The sub itself weighs only about 5,000 pounds, but it needs a mother ship to operate from. The vessel chosen was a massive work barge from a marine construction outfit, mounted with a monster crane big enough to heave a loaded concrete truck onboard. The crane hoisted the sub into a cradle welded to the deck, alongside the command-center container.

By now, the expedition had swelled to some 35 people. Accommodations for the participants included a rudimentary shed erected from two-by-fours and a plastic tarp; a pickup truck with a camper top; and two portable toilets. The floor of the barge's interior, which normally housed spare parts and tools, was hastily covered with outdoor carpeting that quickly disappeared under sleeping bags. Surveying the jumbled sleeping quarters, the reason for the reclining lawn chairs became obvious—they offered a reasonably comfortable alternative to sleeping on the floor.

With the expedition loaded, a short-lived storm delayed our departure but added to the sense of anticipation. Finally we headed out onto the lake. The tug *Margaret Ann* pushed us along at about six knots as we plodded slowly past the Beaver Island chain that stretches along the route to the wreck site, nearly in the center of the lake. We were following a track set by preliminary explorations conducted with the aid of Global Positioning System receivers and bottom-tracing sonar—the kind of equipment available today in a local marine-supply store. Fishermen use it to find lake trout and whitefish.

I was amazed at how much could be accomplished with low-cost gear, some of it improvised. The wreck was located by tracking a small boat back and forth until a hump showed up on the depth sounder trace. Then an ingenious underwater camera designed by Bernie Hellstrom, a local electrician and diving enthusiast, came into play. Salvaged from a home security system, the camera was housed in a pressure-resistant watertight steel case. The whole affair was lowered to the bottom by a long length of polypropylene water-ski tow rope with the video cable threaded through its center.

The electronic gear on the Delta submarine was considerably more sophisticated. A transponder on the sub's hull matched another lowered into the water from the barge, to provide an audio linkup. The two units used water's natural sound conductivity to get a range of several miles, which meant you could monitor the conversation simply by sticking your head underwater.



ing into a chop that sloshed water over the bow. Not promising, but our last chance. The lake was calming as we arrived at the site in mid-afternoon, and we waited as the wreck was relocated and the guide line retied. Hope for a lengthy series of dives, and a thorough view of the wreck, had evaporated. Now Mays was going to make the first dive, with Slater in the pilot's seat. Attached to the sub's grappling arm was a plaque honoring the lost crew of the *Bradley*.

The descent line worked as intended, guiding the sub to the *Bradley's* deck. A section of the rail jumped into view, startling Mays and Slater. A minute later, the nameplate on the hull suddenly appeared in the viewing port—positively identifying the wreck. The sub dropped the plaque on the ship's deck, and returned to the surface. Mays popped out of the sub's hatch, his face beaming. "I was there," he said.

Artist Jim Clary (left) tours sunken ships in a submarine to collect information for his paintings. Below is Clary's depiction of the sub's visit to the *Bradley*.

With the meter running on the sub, which had to return to the West Coast soon for another job, hopes for the original goal—a thorough survey of the wreck site, which for Clary would provide the detail for his paintings—were fading rapidly. But Clary

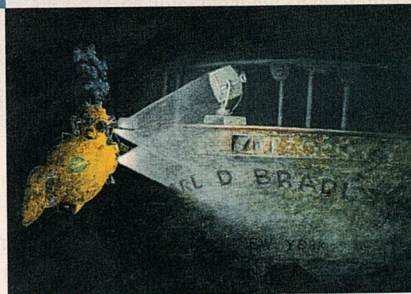
In the command center, a tracking device integrated the signal from another sonar transponder on the sub with a Global Positioning System unit on the surface. That's how those of us on the surface could tell where the sub was.

We crowded the rail of the barge when the sub splashed over the side on the first dive. Hopes were high on-deck as the sub descended rapidly. The plan was to go to the bottom, then head in the direction of the wreck until it came into view. Disappointment came when the crew entered a layer of suspended silt about halfway down; it thickened to a dense fog at the bottom. With less visibility than the length of the bow, the sub could hit an underwater obstacle before the operator could see it. In the tangle down there, the poor visibility was just too dangerous. But why the murk? The camera had a clearer view only a few days earlier.

No one really knew the answer, but Slater studied the soundings on a chart of the area, noting that the hull was in an underwater valley, several hundred feet deeper than the surrounding lake bottom. It could be a place where sediment naturally flows and tends to stay murky. It was only one theory, but not encouraging. We remained hopeful that the silt would settle in a day or two.

The wind kicked up at night as we huddled behind a nearby island. The next day the weather cleared somewhat, and we tried to hook a line directly on the wreck itself, by lowering the video camera to get its position and then sending down line. It took hours of work with the camera, fishing it along the bottom, with an occasional lake trout flitting across the monitor screen, before the task was accomplished. There was no time for a dive before darkness fell.

The final day, we left the harbor at 1:00 a.m., push-



JIM CLARY

squeezed into the hatch for a second dive.

He and Slater landed on the deck, near the same spot, and an eerie spectacle, later replayed on videotape, unfolded as the sub slowly followed the rail. Open doors appeared in the dim light. Then the sub clanked hard against the hull. Slater again cut the dive short and headed for the surface. "Too dangerous" was the conclusion, and further dives were suspended, although the goal of finding the break in the hull wasn't accomplished.

Which you could argue meant the expedition was a failure, I mused, as we dropped a memorial wreath in the water, and the tug's engines started up. That is, if you insisted that the final goal was the only point of the effort.

Shannon and Clary were already making plans to return, maybe later this year. Shannon envisions tour submarines someday cruising the deep waters of the Great Lakes, viewing shipwrecks in comfort.

For the rest of us, the struggle with the weather and the glimpses of the alien lake bottom had transformed the story of the *Bradley* wreck from an historical anecdote to something more personal. I wasn't too surprised to find out that a local folk singer on nearby Beaver Island had, in fact, written a song about the wreck of the *Bradley*.

But you have to go there to hear it. ♦