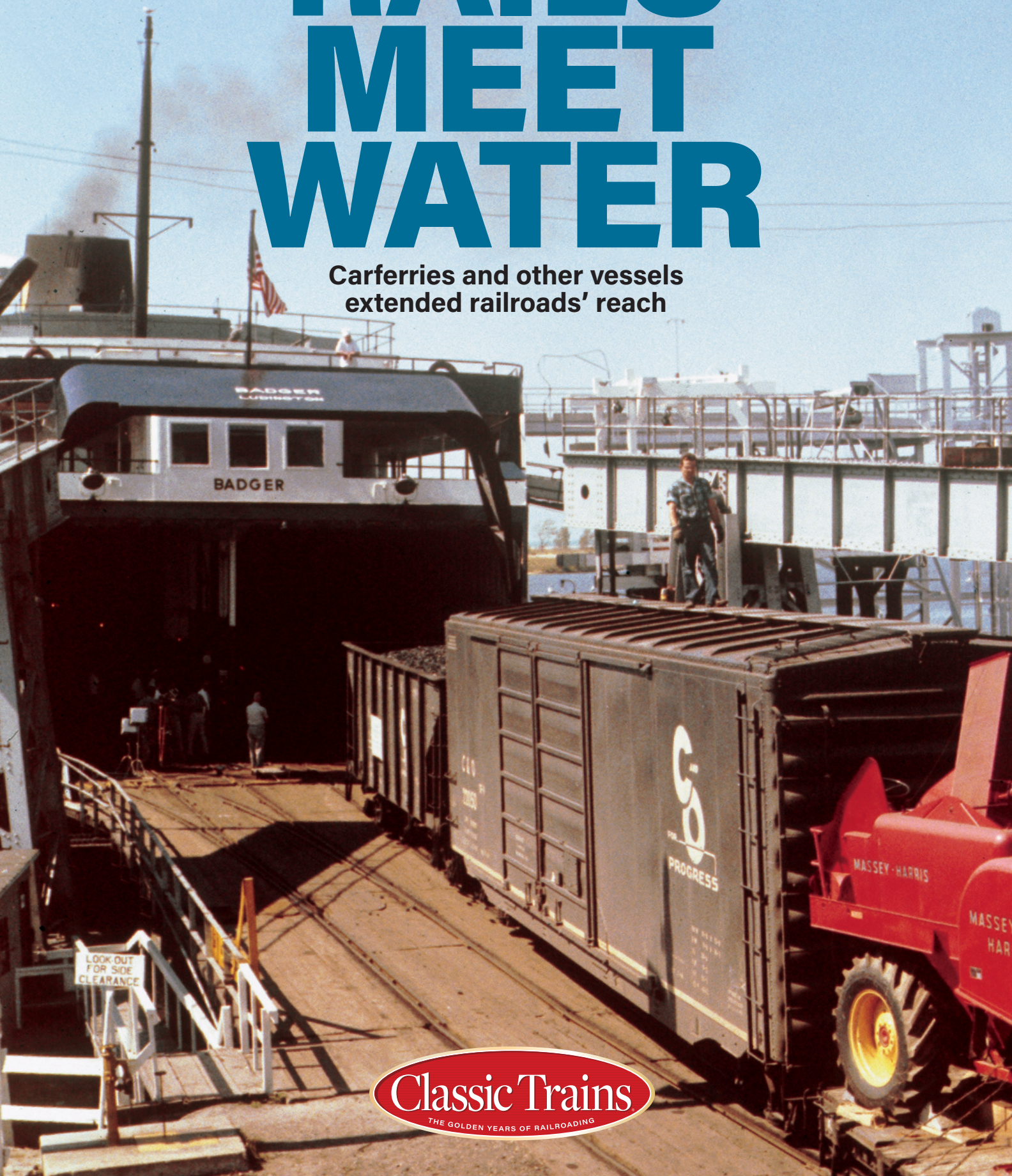


RAILS MEET WATER

Carferries and other vessels
extended railroads' reach

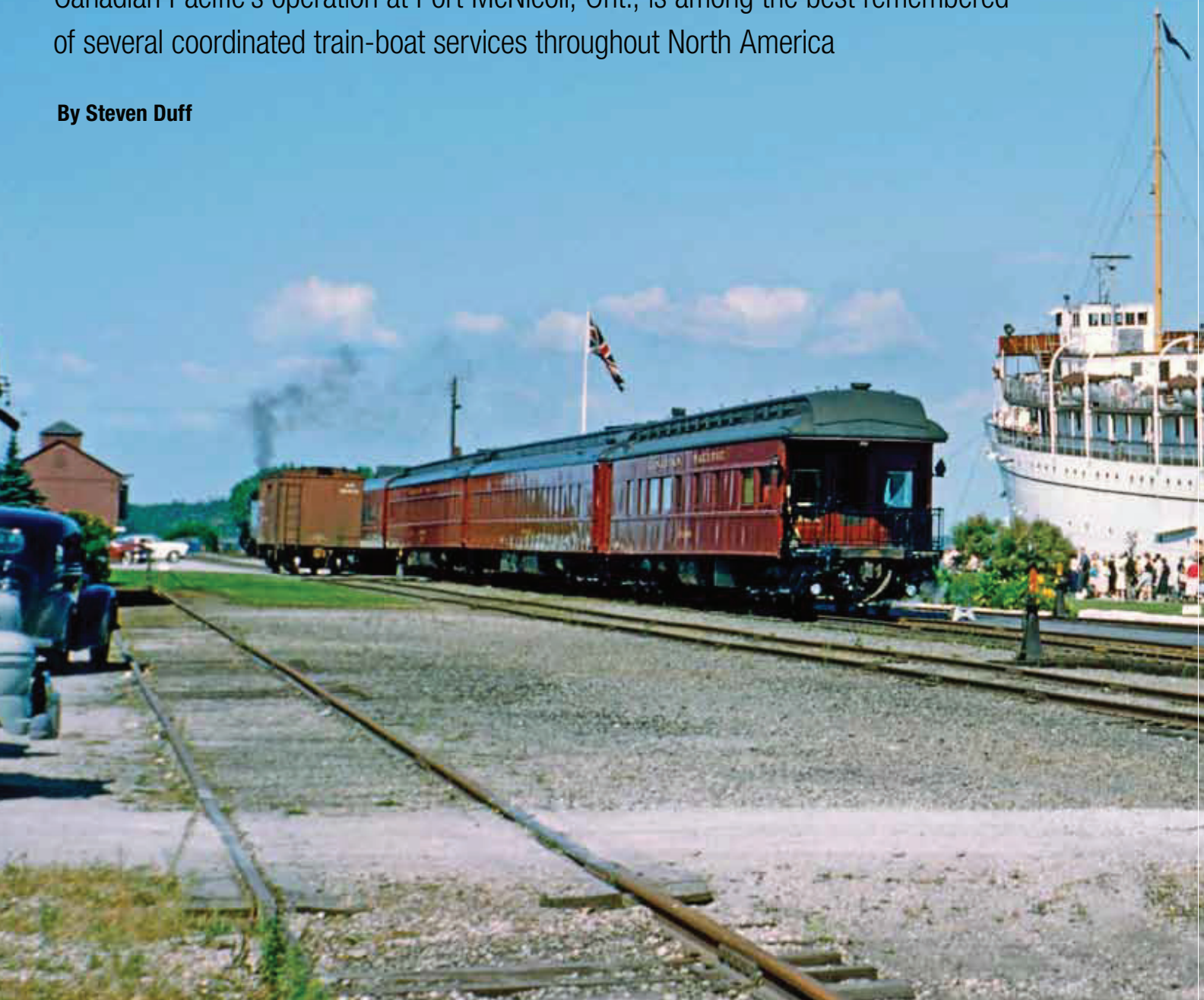


Classic Trains
THE GOLDEN YEARS OF RAILROADING

Rails to dockside

Canadian Pacific's operation at Port McNicoll, Ont., is among the best remembered of several coordinated train-boat services throughout North America

By Steven Duff



There's a certain symbiosis between trains and ships. Talk to a railfan and chances are he has at least a passing interest in marine affairs, and vice-versa. This being the case, it would be hard to imagine a more pleasant and civilized situation than to book a voyage in which you are taken by train right to dockside to board your vessel of choice.

So-called "boat trains" have long

been a European practice and, to some extent, still are. After all, there are some formidable bodies of water to be hurdled: the English Channel, the North Sea, the Irish Sea, and the Baltic. Road traffic and roll-on ferries, of course, have taken a big bite out of boat-train traffic, but vestiges still remain, thanks to Europe's comprehensive passenger-train network.

And, in a sense, vestiges remain here in North America, a case in point being

New Jersey Transit's rail-boat connections at Hoboken. But these are commuter operations, not a long-distance proposition, and, of the latter, nothing remains on this side of the Big Pond. Let us, then, look back and see what was available in Canada and the U.S. back in what we have come to think of as the Classic Era.

Before railways even came into being, travel between eastern Canada and the West entailed a voyage up Lake Huron and across the often-treacherous Lake Superior. Even after the railways began operation, however, a number of boats (mostly owned by or at least affiliated with the railways) kept running, partly out of practicality, but primarily as a cruising vacation or a pleasant interlude in the rail journey.

Outright ownership was, at least on the Great Lakes, the purview of the Canadian Pacific Railway, still a major North American freight railroad, but in days gone by self-billed as the World's Great-

CPR boat train 703 is still shiny after its run up from Toronto to meet the steamer *Assiniboia* at Port McNicoll in August 1957.

Robert J. Sandusky





CPR "Dayliner" RDC 9059, running as DAR's Halifax–Yarmouth, N.S., train 11, has pulled onto the Digby pier to meet Canadian Pacific's *Princess of Acadia*, soon to sail for Saint John, N.B., in July 1963. Thanks to Bay of Fundy's extreme tides, only part of the ship is visible above the pier.

Fred N. Houser



Before Pacific Great Eastern opened its line to North Vancouver, B.C., passengers rode Union Steamship Co. vessels from Vancouver up Howe Sound to the PGE dock at Squamish (above left), where they transferred to a PGE train for the scenic trip north, as seen in two 1953 photos.

Two photos, Fred N. Houser

est Travel System. Within the memory of many of us, Canadian Pacific operated two graceful, yacht-like steamers, the *Keewatin* and *Assiniboia*, between Port McNicoll, Ontario (itself a creation of the CPR, 109 miles northwest of Toronto), and Port Arthur/Fort William, Ont. (now Thunder Bay, the adjacent cities having merged in 1970). At the ends of the voyage, CPR provided rail connections with Toronto and Winnipeg.

A 1956 CPR timetable—a repository of happy memories beyond reckoning—shows us these connecting boat trains: westbound, No. 703 left Toronto

Wednesdays and Saturdays at noon to deposit you at dockside at Port McNicoll 3 hours later. Two days hence, train 53 was waiting "at shipside," so says the timetable, at Fort William, to forward passengers and package freight to Winnipeg, an all-day journey.

Eastbound, train 8, on Fridays and Mondays, did an overnight run from Winnipeg to Fort William, arriving shipside at the unpalatable hour of 5:30 a.m. Presumably passengers were allowed a bit of a sleep-in; in any event, there was no screaming rush to board the ship, as she didn't sail until 12:30 p.m. This, of

course, was a golden opportunity for strolling about the harbor area, watching trains and boats and generally soaking up atmosphere. At the end of the voyage at Port McNicoll, train 704 waited alongside for an 8:15 a.m. departure to get passengers to Toronto by lunchtime. Nos. 703 and 704 were picturesque little trains indeed and, before the end of our story, we'll take a virtual trip on 703 to get a sense of what a boat train was like.

Another boat train service was operated by Canadian National Railways in connection with the Northern Navigation Co.'s route between Point Edward, Ont.

(a suburb of Sarnia), and Port Arthur/Fort William. This service was not a direct rival to the CPR, serving as it did a market from southwestern Ontario and the Detroit/Port Huron areas. Nonetheless, CNR ran connecting trains the 179 miles between Toronto and Point Edward; 1929 was the busiest year on that service, and CNR timetabled the outward train as No. 23, departing Toronto Union Station Tuesdays, Thursdays, and Saturdays at 10 a.m. for a dockside arrival at 4:10 p.m. The return service was No. 22 on Mondays, Wednesdays, and Fridays, leaving Point Edward at 8 a.m., following the arrival of the inbound steamer at 6:30 and reaching Toronto at 1:15 p.m.

At the western end of Northern Navigation's passage at Port Arthur, passengers proceeding west boarded a Canadian National boat train (operating Thursdays, Saturdays, and Mondays) to depart for Winnipeg at 7:30 a.m., arriving there at 9:10 p.m. Its eastbound counterpart was an overnigher, departing Winnipeg at 10:30 p.m. Fridays, Sundays, and Tuesdays and rolling up to dockside at Port Arthur at 11:25 a.m. Interestingly, both trains operated via Sioux Lookout, Ont., rather than the more direct route through northern Minnesota, presumably to avoid any complexities of crossing the border.

Initially, three steamers operated CNR's Great Lakes link in the route to the west: the *Huronic* (built in 1906), *Hamonic* (1909), and *Noronic* (1913). The Great Depression took its toll, as it did with other civilized enterprises, and, by the end of World War II, just the *Noronic* was left, operating on irregular itineraries as a cruise ship. The connecting trains were also a casualty, having been suspended in wartime and not revived.

If the name *Noronic* rings an alarm bell, you are not imagining things. She fell victim to a catastrophic fire in Toronto in 1949 with the loss of 119 lives.

Bay of Fundy to Howe Sound

In a happier vein, let us turn again to Canadian Pacific, whose subsidiary Dominion Atlantic Railway operated a boat train between Halifax and Digby, Nova Scotia, to connect with CPR ferry *Princess Helene* across the Bay of Fundy to Saint John, New Brunswick. An entertaining account of this is to be found in David P. Morgan's story "D-I-E-S-E-L? Pronounce That, Please," first published in November 1953 *TRAINS*, with a welcome reprise in the 2007 *CLASSIC TRAINS* publication *IN SEARCH OF STEAM, 1953–1954*. Morgan did not care for the actual



U.S. boat trains: Until 1952, PRR's *Del-Mar-Va Express* (top) ran down its namesake peninsula to Cape Charles, Va., where it connected with a steamer to Norfolk. FEC's *Havana Special* and other trains met steamers to Cuba at Key West until a 1935 hurricane wiped out the line.

Top, The Mariners Museum collection; above, CLASSIC TRAINS collection

voyage across to Digby (which had him discussing seasickness pills with his traveling companion, photographer Phil Hastings), but took great delight in the connecting DAR boat train to Halifax. The Pacific-powered consist was as classic as it gets, replete with an open-platform observation car and a wooden, flat-roofed baggage car that looked like something out of the Civil War.

Of course, steam locomotives were in twilight when Morgan and Hastings rode the DAR, and a handful of years later the Halifax-Digby boat train was in the care of a pair of Budd RDC's. It wasn't the same, of course, but it was still a bona fide boat train. The RDC run lasted into the VIA Rail Canada era until withdrawal in January 1990.

The steam turbine-driven *Princess*

Helene served for another dozen years following Morgan's green-faced voyage and then migrated to the sunny climes of the Aegean Sea. The cross-Fundy service was assumed by CPR's *Princess of Nanaimo*, an émigré from British Columbia, in 1963; she was renamed *Princess of Acadia* for her new service, then gave way in 1971 to a brand-new, purpose-built *Princess of Acadia*, still with us under the aegis of Bay Ferries.

The tiny province of Prince Edward Island has been devoid of rails since early 1990, but in the times we remember with such affection, it supported a modest and delightfully rural network with junctions, inter-connections, and, yes, a boat train. This one, operated by Canadian National, took boat trains to the ultimate level in that the entire train rolled right



Canadian National's *Caribou* meandered 548 narrow-gauge miles across the island of Newfoundland, from St. John's west to Port-aux-Basques. At the port, the train, with sleepers on the rear, was backed to the bumpers only steps away from a ferry that crossed Cabot Strait to North Sydney, N.S. CN Marine also ran ships (like *Taverner*, seen from *William V. Carson*) out of Port-aux-Basques to points around the island.

Three photos, Fred N. Houser

onto the ship to continue its journey on the other side of the Northumberland Strait. Thus it was possible to take an unbroken train trip between Moncton, N.B., and Charlottetown, capital of Prince Edward Island. In fact, with a train change at Moncton, you could go all the way from Montreal or Boston to ride the rails to Charlottetown. If you came by sleeper from Montreal, you didn't have to change at all. Truly this was the Age of Enlightenment.

Imagination time: We board CNR train 40 at Moncton at 2:10 in the afternoon, arriving dockside at Cape Tormentine at 4:52, and our train is promptly rolled aboard the new motor-ship *Abegweit* (or, if we're really lucky, the elderly steamer *Prince Edward Island*). The voyage takes 55 minutes, and this is a handy

time to have dinner, as the train (at least as of 1956) has no dining car. Hopefully the crossing won't be too raucous, as the Northumberland Strait can be nasty, but today it behaves itself as the ship plows onward, accompanied by whirling, screeching gulls flying as air cover.

The ferry, being single-ended, must back into the slip at Borden, P.E.I.; the bow is specially strengthened for ice-breaking and so cannot be a roll-through operation. As a result, the train is now "backwards" for the run past Prince Edward Island's famous potato fields to a 9 p.m. termination in Charlottetown. The return journey sets out at 8 a.m. the following day with the same equipment.

Not far away was CNR's Newfoundland service. A daily ferry linked the island's 3-foot 6-inch-gauge railway with

the mainland at North Sydney, N.S., a 100-mile trip. Until it was discontinued in 1969, the trans-island *Caribou* train was scheduled to meet the ferry.

Out in British Columbia, the Pacific Great Eastern Railway partnered with the Union Steamship Co. to offer tri-weekly service between Vancouver and Prince George. Passengers boarded a boat at Union Pier at the foot of Carrall Street in Vancouver for a 3½-hour, 34-mile voyage up Howe Sound to the dock at Squamish, south end of the PGE at the time. There a PGE train was waiting to carry them north. Extension of PGE rails from Squamish south into North Vancouver in 1956 ended the need for this arrangement.

Now to the U.S., which hosted some notable boat-train operations, although

most had vanished by World War II. Two famous examples were the Fall River boat train, operated by the New Haven between Boston and Fall River, Mass., where passengers boarded steamboats for New York, and the Florida East Coast *Havana Special*. In the latter case, the railroad literally went to sea on Henry M. Flagler's daring Key West Extension, opened in 1912. In those simpler times, one could take the train to dockside at Key West to board the stately steamer *Governor Cobb* for the 90-mile voyage to Havana. A hurricane in 1935 damaged the causeway too badly for further train operation, and a roadway succeeded it. The Fall River Line's fleet of legendary paddle-steamers ceased running the following year, and with them vanished the Fall River train connection.

The last comparable American boat-train operation we know of was the Pennsylvania Railroad's *Del-Mar-Va Express*. Originating in New York (at 7:30 a.m.), the *Del-Mar-Va* took the PRR main line to Wilmington, Del., then peeled off on a secondary line down the Delmarva Peninsula, so called for its being in the states of Delaware, Maryland, and Virginia. The train rolled into a somewhat ramshackle dockside facility at Cape Charles, Va., where a connection was made with the ferry to Norfolk, Va. The voyage across Chesapeake Bay took 2 hours 20 minutes. If you wanted to take an exotic routing to Norfolk, this was certainly the way to do it. At any rate, it saved residents of the peninsula a roundabout journey.

In the final years of the ferry service, the vessel of necessity if not choice was the elderly *Elisha Lee*. Her predecessor, *Virginia Lee*, had been requisitioned by the government for war service in 1944, and the only ship available to fill the gap was the rakish but elderly *Richard Peck*, formerly operated by the New Haven on Long Island Sound. The PRR purchased the steamer, renamed her *Elisha Lee* after a late vice president of the company, and pressed her into a very demanding schedule, as naval operations in the area were in white-hot gear. The *Elisha Lee* carried on through the 1952 season, at which time there was still a respectable traffic. However, she failed her 1953 safety inspection and, because of her age and condition, was judged not worth the cost of repair, so the poor old ship was dispatched to a scrap yard. PRR faced an enormous fine for suspension of the service, but was still money ahead. As for the *Del-Mar-Va Express*, it still waddled along, last appearing in the *Official*



Three July 1963 photos show Canadian National's Prince Edward Island ferry operation. In a view from inside train 40 from Moncton, N.B. (top), cars are loaded aboard the *Abegweit* at Cape Tormentine. After the short voyage to Borden, P.E.I. (middle and above), a GE 70-tonner uses idler flats to retrieve the cars, which, still as train 40, will continue to Charlottetown.

Three photos, Fred N. Houser



World's Greatest Travel System: Passengers and a ship's officer watch from the rail as the *Assiniboia* or *Keewatin* eases up to the dock at Port McNicoll in about 1953. The lovely gardens and tidy depot are a welcome sight, as is boat train 704, waiting to depart for Toronto.

Canadian Pacific, James A. Brown collection



In an early 1950s view from Port McNicoll-bound boat train 703, which is stopped in the siding at Palgrave, Pacific 1259 approaches on the main track with Sudbury–Toronto local 26.

Fred N. Houser

Guide in 1957 but on such a passenger-unfriendly schedule (overnight with no sleeping cars) that we can only assume Pennsy just wanted to kill the service.

All aboard for Port McNicoll

Now let us take another virtual journey on a boat train, and we'll choose one close to the writer's home, CPR's Toronto–Port McNicoll service. Let's imagine it's 1956, when No. 703 is still steam-powered and Bill Haley and the Comets' music is great in the land.

Up the stairs we go to track 9 of Toronto Union Station, and on our left is a gleaming sonata (not a symphony—it's too short) of polished burgundy. Reading from back to front, we have two heavy-weight parlor cars, *Antigua* and *Bermuda*, and, because of a lucrative summer job, we have decided on first-class travel and have a reserved seat on *Bermuda*. Before boarding, we need to check forward. Ahead of the two venerable parlors are a pair of lightweight coaches and a lightweight combine, and on the point is a G5 Pacific. The five-car train is polished to a high gleam, front to back.

We board *Bermuda* and find our deep-cushioned swivel chair, to sit and wait for departure at one minute past noon. We idle away the time, watching a wagon load of block ice on the platform quietly dripping away in the August heat. Then, “Awww! a-bow! a-bow!” “Board!”

A door slams, something hisses, and we’re away, past the outer reaches of Union Station. The varnished, plush interior of *Bermuda* is a quiet place, as restful as it gets, and we soon get dozy. But this is not a time to sleep, so a trip to the water cooler is in order, with a couple of good slugs from the little pointed paper cup that, if you hold it too firmly, will gush cold water all down your front.

No. 703 makes the suburban stops of Parkdale and West Toronto. And then, with farmlands and wood lots replacing suburbia outside the window, the train blows through Woodbridge, Kleinburg, and all succeeding towns until Midhurst, where we pick up a couple of passengers from nearby Barrie. More pastures, meadows, silos, country road crossings. Then on to Medonte, where we depart the main line for the branch to Port McNicoll. In the process, we meet a trainload of grain powered by ancient Consolidation 3722, for Port McNicoll is a major trans-shipment point for grain brought by boat down the Great Lakes.

The landscape grows stonier as we approach the shore of Georgian Bay; soon, tantalizing glimpses of blue-and-silver water show to our right. The train makes a long curve to the north as it crosses the 2,141-foot Hog Bay trestle, the longest timber bridge in Canada.

We pass an enormous grain elevator on our right, and there’s the harbor, and the *Keewatin*. Oh, she’s a beauty, with a big Canadian Red Ensign at the taffrail, the checkered Canadian Pacific house flag at the main mast, and a Union Jack fluttering from her bow staff. Another Union Jack floats above the gardens by the station, for the British Empire is alive and well. Speaking of which, it’s 3 p.m. and it’ll be tea time aboard ship.

No. 703 rolls to a halt and we alight, sea bag in hand, cross the dock, present our tickets at the gangway, and go aboard, into a library of smells you find only on a steamship: floor polish, varnish, a slight fishy tang, and the hot, oily smell of the engine room. From the rail, we have a fine view of the station area and the lovely train that brought us here.

It’s all gone, of course. The rails are gone, the grain elevator is gone, the station and its beautiful gardens are gone,



In the early 1950s, before conversion to oil firing resulted in her smokestack being shortened, *Assiniboia* stands at Port McNicoll. Sister *Keewatin*, never converted, retained her tall stack.

Fred N. Houser



By July 4, 1964, *Assiniboia* was burning oil and the boat train from Toronto, renumbered 303, was diesel-powered, in this case by RS18 8782. This charming service quit the following year.

James A. Brown

the *Keewatin*’s sister *Assiniboia* is gone, and the Maple Leaf flag has supplanted the Union Jack. A condominium development now stands on the old station grounds, breathing new life into the old port village.

And boat trains? Surprising as it may seem, there still is one in North America, and, two days a week, it operates in steam! And it’s narrow-gauge! Now, it may be argued that it isn’t a legitimate boat train, since one takes a ship to get to the train rather than the other way around, but the train does indeed meet the ship at dockside. This, of course, is

clear across the continent on the 3-foot-gauge White Pass & Yukon, whose passenger traffic has grown prodigiously thanks to the boom in cruising, and dockside in Skagway, Alaska, can be a mighty busy place when four cruising behemoths are in port at the same time.

Back in Port McNicoll, there’s something of a renaissance. In 2012, after an absence of 47 years, the *Keewatin* was returned to her old berth. She’s the centerpiece of a new, historically themed hotel/restaurant/convention center located where the rails once ran to dockside—see “Classics Today,” page 76. ■

Icebound off

BACK WHEN railroad employment was well over the 1 million mark, there were hundreds of workers directly involved in the movement of freight cars who never had to concern themselves with block signals, ruling grades, or Form 19's.

They were the crews of the Great Lakes carferries, those bulky, steam-powered, and thoroughly loveable craft that offered a shortcut to circuitous, time-consuming all-rail routings. In keeping the cars moving, the carferries' masters and mates, oilers and deckhands faced challenges unknown to their counterparts ashore.

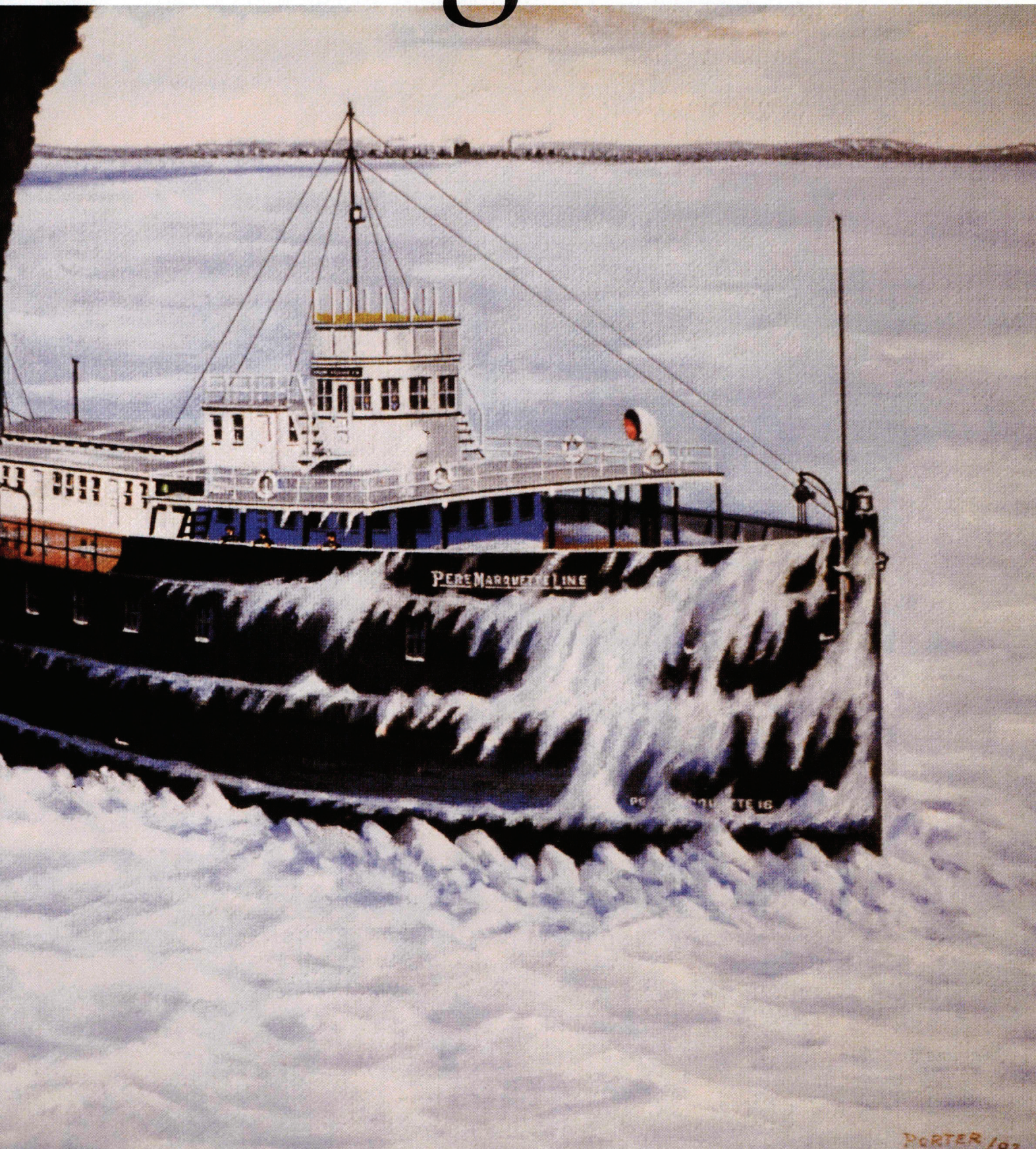
Gales, groundings, fire, collisions, and fog were dangers at any time of the year, but winter brought a special peril—ice. In wooden-hull days, it could crush a boat, but even after steel took over, it could make navigation difficult, even impossible. On the east side of Lake Michigan, particularly, where pack ice was pushed against the leeward shore, a carferry could become stranded for days—or weeks—before another boat could come to her aid.

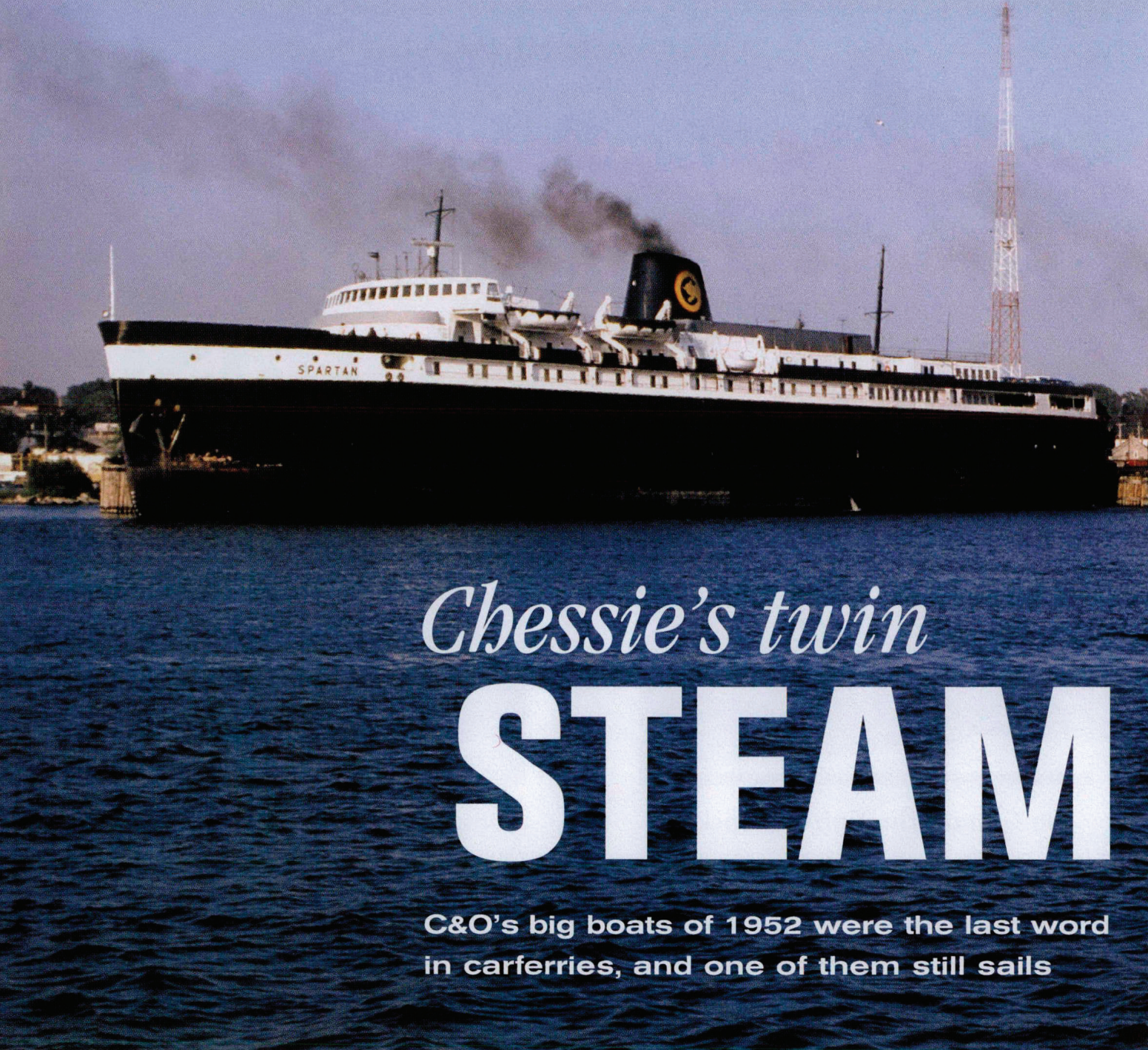
That's what's happening here with two Pere Marquette boats off Ludington, Mich., in a scene created by railroad and maritime artist Russ Porter. It's a scene foreign to a Santa Fe, Katy, or Seaboard, but all too familiar to the likes of PM (and successor Chesapeake & Ohio), Ann Arbor, and Grand Trunk Western.—*R.S.M.*



PAINTING BY RUSS PORTER

Ludington





Chessie's twin **STEAM**

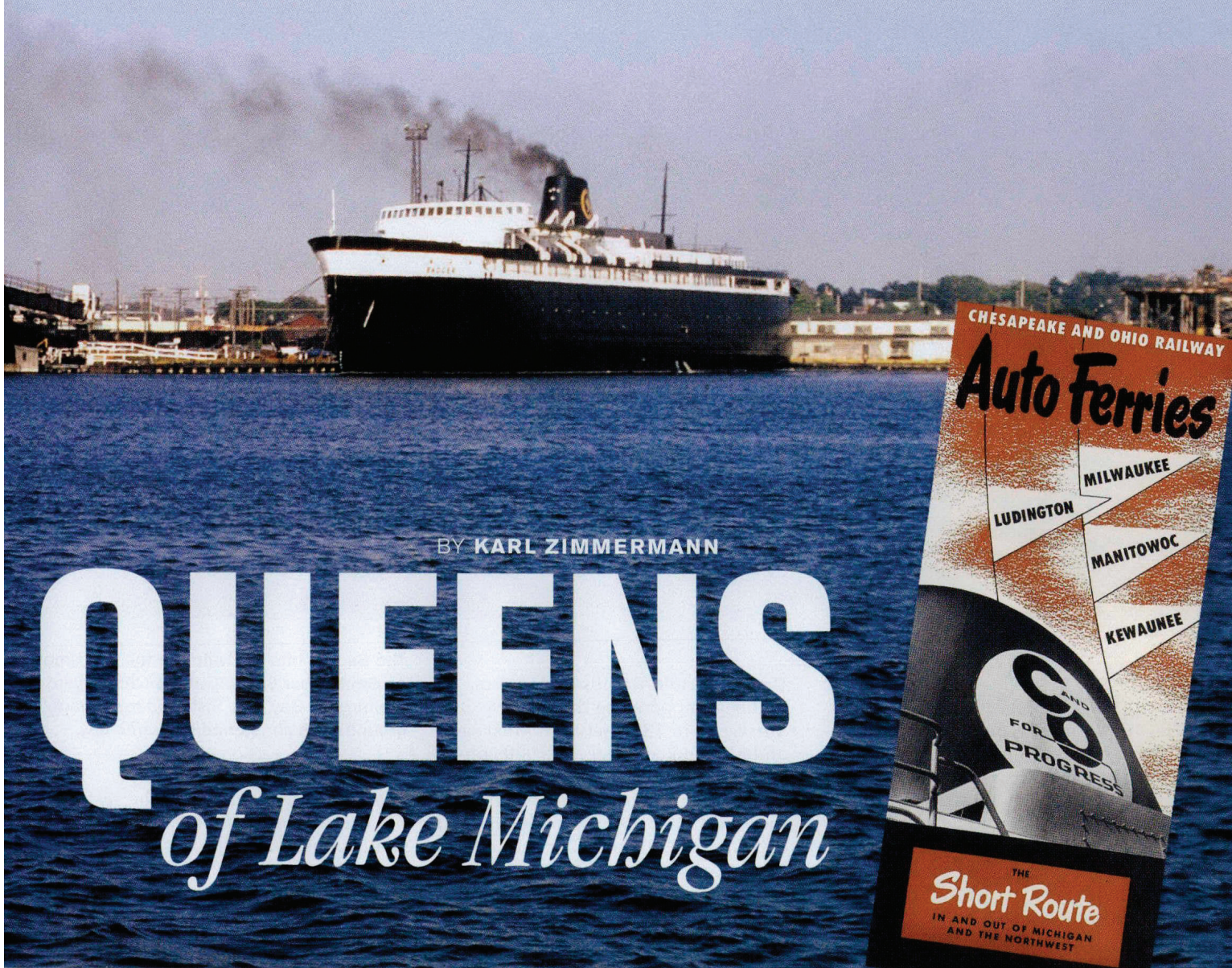
**C&O's big boats of 1952 were the last word
in carferries, and one of them still sails**

HERE'S AN ANOMALY. In 2003, over 40 years after America's mainline railroads ceased using steam locomotives in regular service, steam engines still power a former Chesapeake & Ohio Railway steamer in everyday use over one of the routes it was built for over a half century ago.

The vehicle, of course, is not a locomotive but a ship—or “boat” as even the largest fresh-water vessels are typically called on the Great Lakes. A onetime railroad carferry, the vessel is the *Badger*, which carries trucks, automobiles, and passengers across Lake Michigan in the warm months between Ludington, Mich., and Manitowoc, Wis. Launched in 1952, the *Badger* and identical sister *Spartan* were the final enhancement to a cross-lake railroad-car shuttle begun in the late 19th century. Today the *Badger* flies the flag of Lake Michigan Carferry, which returned her to cross-lake service on May 15, 1992, after a hiatus of almost two years.

Although railroad cars will never again fill the *Badger's* deck, the ferry betrays the time and aegis of its construction in many ways. Not only is she steam-powered, she's a reciprocating steamer—an “up-and-downer,” as such vessels were known on the Lakes before they were made obsolete by steam turbines and then diesel engines. Further, she is coal-fired—a sure tip-off of her C&O heritage. The vessel has other railroad-related features as well, such as a streamlined aesthetic typical of 1950's trains. Anyone occupying one of the *Badger's* 44 cabins will be put in mind of a Pullman car by beds that fold out of the wall, sofas that make up into berths, and the staterooms' general compactness.

RAILROAD FERRIES across Lake Michigan date to 1892, when the Toledo, Ann Arbor & Northern Michigan (after 1895, the Ann Arbor Railroad) began service from Elberta (Frankfort), Mich., to Kewaunee, Wis., where



BY KARL ZIMMERMANN

QUEENS *of Lake Michigan*

ABOVE, KARL ZIMMERMANN; BROCHURE, CLASSIC TRAINS COLLECTION

connection was made with the Kewaunee, Green Bay & Western. Ann Arbor's railroad ran from the lake port diagonally across lower Michigan to Toledo, Ohio, so the carferries were integral to its operation. Eventually, AA established routes to other west-shore cities: Manitowoc and Green Bay, Wis., and Menominee and Gladstone, Mich. (later abandoned in favor of Manistique).

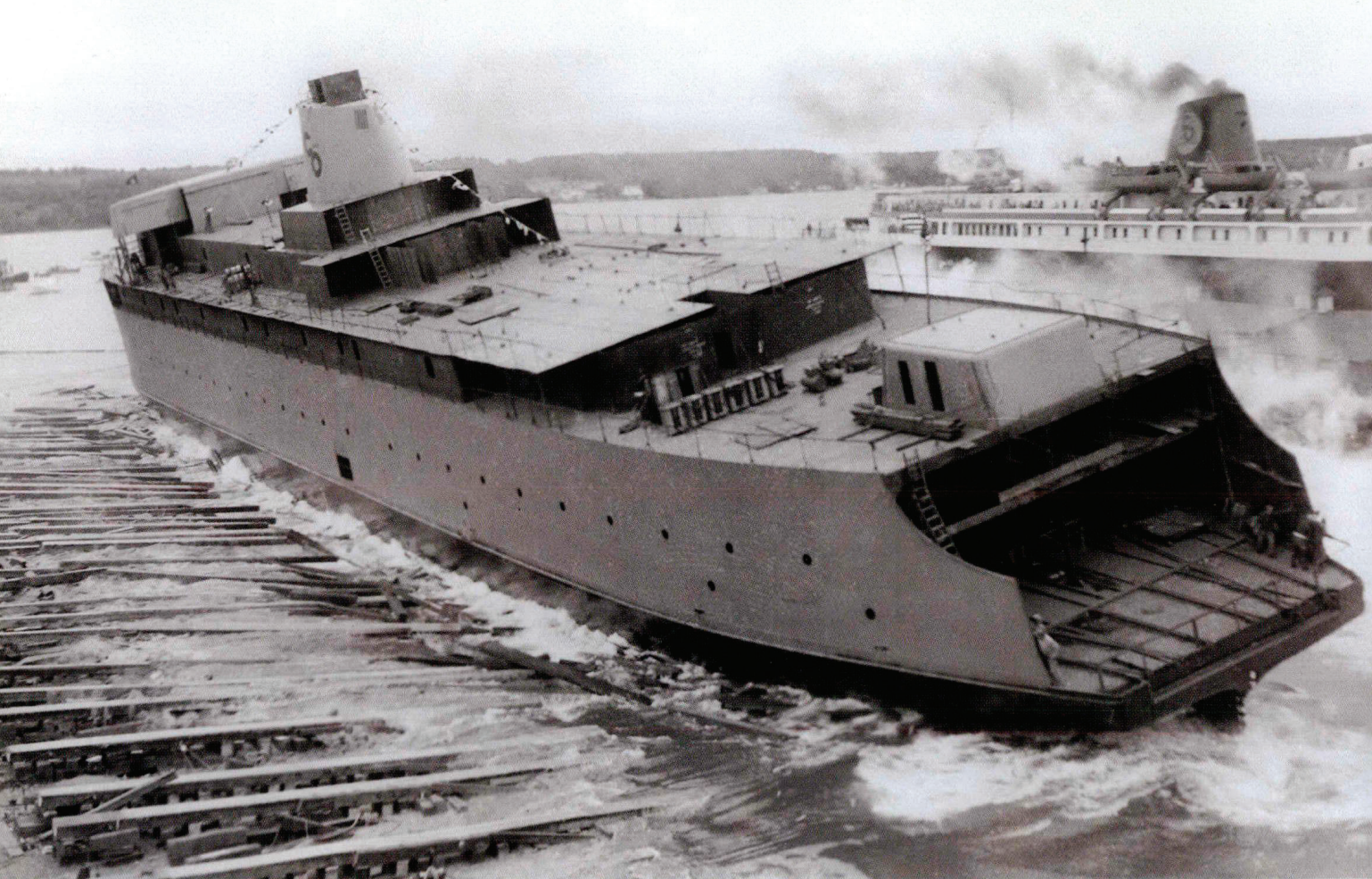
Ann Arbor's first boats were two identical wooden-hull vessels; each could carry 24 freight cars. Carferries built for short trips across relatively sheltered waters, such as the Straits of Mackinac, loaded cars through openings in the bow. The AA boats were stern-loaders, in deference to the open waters they would cross. All the Lake Michigan carferries that followed would share this characteristic.

The *Badger's* lineal descent goes back almost as far as the Ann Arbor boats. When the Pere Marquette Railway was formed in 1900 by the combination of three roads, two

Wearing Chessie System heralds on their funnels, C&O carferries *Spartan* (left) and *Badger* steam at Ludington in August 1978. A brochure from 1953 promoted the C&O boats to motorists.

were already operating carferries on Lake Michigan. The Flint & Pere Marquette Railway, chartered in 1857 to haul lumber from Flint, reached its namesake Lake Michigan port of Pere Marquette in 1874, by which time the town was being called Ludington. The following year F&PM got on the lake with a chartered sidewheeler, and by 1890, it had built its own fleet of five "break-bulk" steamers, boats that required transloading of commodities.

When lumbering played out and F&PM shifted emphasis to its cross-lake connection, this transfer became increasingly problematical, and in 1896 F&PM launched the



CHESAPEAKE & OHIO HISTORICAL SOCIETY COLLECTION

ferry *Pere Marquette*. Its main advance was a steel hull, a key for ice-breaking, important for maintaining year-round service. This vessel proved a prototype that nearly all Lake Michigan carferries would follow for decades: twin stacks and a single cabin deck. With four tracks, the *Pere Marquette* was 337 feet long and 56 feet wide, with a capacity of 30 standard 40-foot freight cars—numbers that would change little in the decades ahead. The *Badger* measures 410 feet, 6 inches by 59 feet, 6 inches and could carry 34 cars on its four tracks. Tight turning areas and shallow depths at the ports were the limiting factors for these dimensions.

The *Pere Marquette* plied between Ludington and Manitowoc, a route that stayed important

for *Pere Marquette* and then C&O after it took control of PM in 1924 (C&O fully merged PM in June '47). Meanwhile, another PM predecessor, the

Detroit, Grand Rapids & Western, had begun operating the carferry *Muskegon* in 1895 between Muskegon and Milwaukee. After the 1900 consolidation that created the PM, this vessel became *Pere Marquette 16*, and the *Pere Marquette* eventually received the suffix 15. By 1903, four similar sisters were in the fleet.

Early in the PM era, the Milwaukee boats were shifted from Muskegon to Ludington. When Kewaunee was added in 1903, the three routes that would remain to the end of service (by then operated by successor Chesie System) were in place.

In 1924, "on-line" Manitowoc Shipbuilding Co. designed and delivered *Pere Marquette 21* and *Pere Marquette 22*. Similar to the earlier PM boats but slightly larger, they would be replicated four more times, as *Ann Arbor No. 7* and the Grand Trunk Western trio *Grand Rapids*, *Madison*, and *City of Milwaukee*. (The *Milwaukee* survives in preservation, currently in Manistee, Mich.) GTW subsidiary Grand Trunk Milwaukee Car Ferry Co. had begun Lake Michigan service in 1903, to Milwaukee from Grand Haven, later switching to Muskegon as its Michigan port when the Pennsylvania Rail-

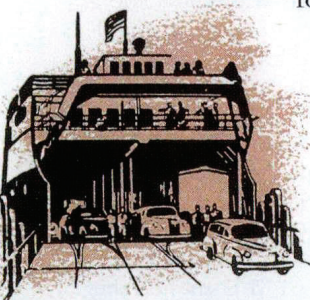
The *Badger* hits the water for the first time on September 6, 1952, at the Christy yard in Sturgeon Bay, Wis. Sister *Spartan* (background) was christened the same day.

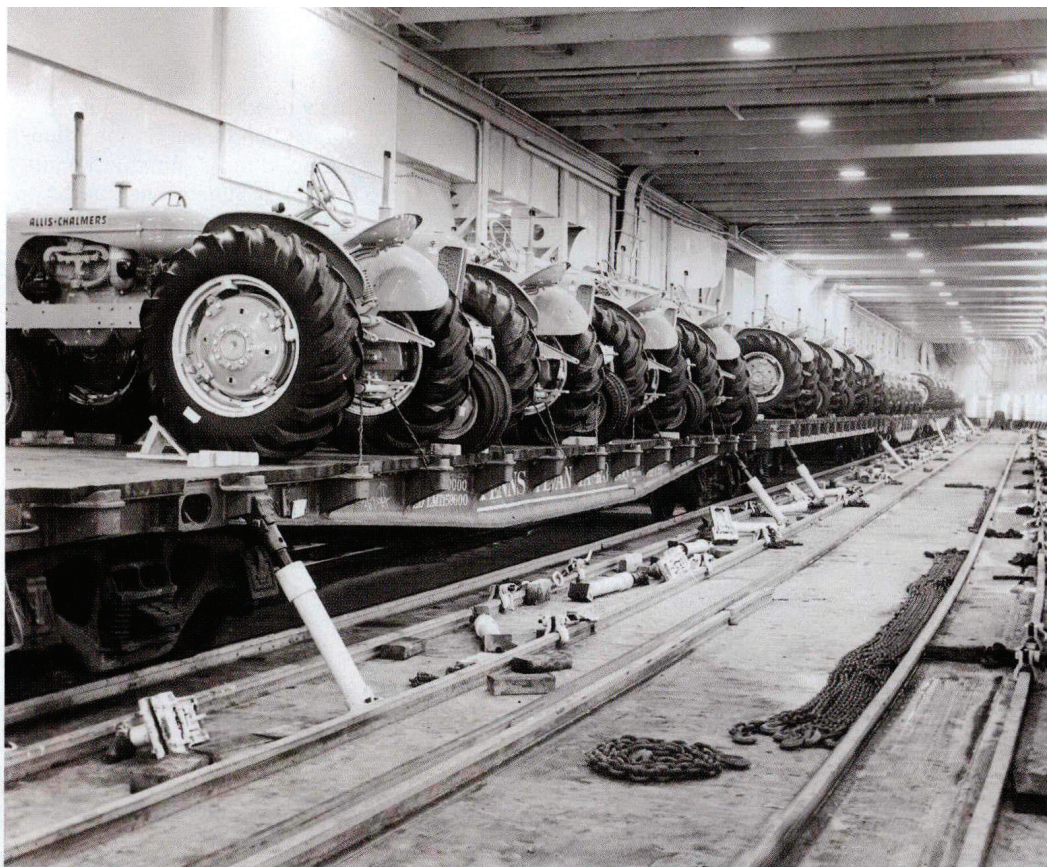
road became a partner in the service.

The six were elegant vessels, especially considering the design restrictions. Car decks had to be level, eliminating the possibility for the graceful, sweeping sheer that enhances the best marine architecture. The need for four parallel tracks to fill as much of the hull as possible enforces a certain boxiness.

In 1929, Manitowoc delivered to PM *City of Saginaw 31* and *City of Flint 32*, and while they were arguably less successful, they were clearly the beginning of a new era for Lake Michigan carferries—one that focused on passengers, not freight (a market only PM, not *Ann Arbor* or GTW, really sought).

The freight-traffic objective was to avoid the rail bottleneck of Chicago. By the 1920's, though, automobile tourism was beginning to grow, and the *Saginaw* and *Flint* responded to this by offering a general upgrading of passenger accommodations, including 43 staterooms. By this time, the PM and the American Automobile





ALLIS-CHALMERS MANUFACTURING CO. PHOTO, JOHN B. CORNS COLLECTION

On one of her first trips from Milwaukee, the *Badger* was loaded with a solid cargo of flatcars bearing Allis-Chalmers tractors. Jacks, chains, and other car-securing apparatus are visible in this photo.

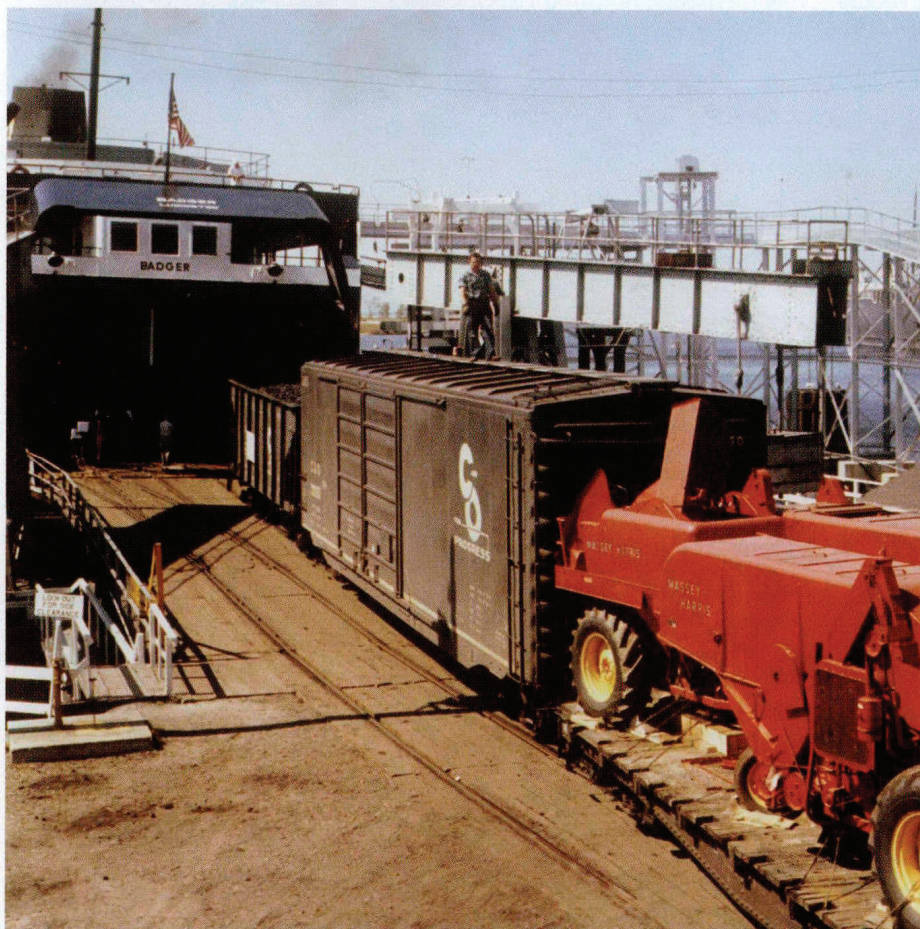
A C&O hopper car, its load of coal perhaps destined for the *Badger's* own bunkers, leads the way onto the boat at Ludington. The like-new condition of the automobile ramp dates the scene to 1955 or '56.

Association were jointly issuing brochures with maps of the Upper Midwest that showed the saving in time and mileage by sailing on the boats.

Equally a departure—though, as it turned out, not trend-setting—was the boats' propulsion. Though still coal-fired, these two craft were turbo-electric-powered and had automatic stokers. They set the new speed standard for the lake—18 mph, up from 14. They were the first with single stacks. They were the first in the PM fleet to carry names as well as numbers, and their numbering in the 30's further distinguished them from their predecessors.

FOR ALL THESE INNOVATIONS, these twins still looked a lot like traditional carferries. In appearance, the breakthrough came in 1941 with the stylish *City of Midland 41*—once again, a vessel worth being numbered for a new decade. The *Midland* would be the prototype for the *Badger* and *Spartan* just over a decade later.

The *Midland*, last of the Manitowoc Shipbuilding boats, was the first Lake Michigan carferry to spread passenger accommodations over two decks. She had 72 staterooms, including a dozen "master rooms"—parlors with private



CHESAPEAKE & OHIO PHOTO, JOHN B. CORNS COLLECTION



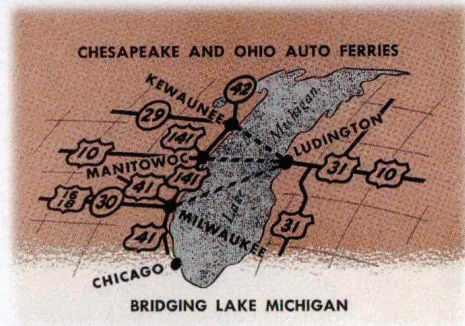
From the outside, the *Midland* was clearly a horse of a different color. In view of the design constraints, she appeared remarkably streamlined. Her turreted wheelhouse was tapered. A sweeping white band on the upper hull and Spar Deck gave an illusion of sheer; and a shorter, tapered, swept-back funnel capped a decidedly sleek look. The *Midland's* dimensions—406 feet long, with a tonnage of 3968—made her the largest car ferry on the Lakes.

Shortly after the 1960 installation of the auto ramp at Milwaukee, a Chevy, Rambler, and Plymouth station wagon roll off the *Badger*. Crewmen rode back up to the deck on a “manlift,” a vertical conveyor belt with hand- and footholds. Ramps were built at Ludington, Manitowoc, and Milwaukee; Kewaunee never got one.



CHESAPEAKE & OHIO PHOTO. JOHN B. CORNS COLLECTION

The *Spartan's* keel was laid in December 1950 and the *Badger's* the following April. This led to a January



1952 launch for the *Spartan* and a September one for the *Badger*. The *Badger* progressed more slowly because of changes in the economic landscape. The Korean War inflated costs of material and labor, causing Christy to struggle with its ambitious project. A labor shortage and steelmakers' strike compounded the problems. The war eventually became part of the solu-

Skinner Unaflow: The ultimate 'up-and-downer'

Though Chesapeake & Ohio made a startlingly traditional choice in powering the *Badger* and *Spartan* with reciprocating steam plants (surprising even the boats' marine union, which advocated diesel power, even though this would have meant fewer jobs), it did opt for the most sophisticated expression of that "up-and-downer" technology. This was the Skinner Compound Unaflow Marine Steam Engine.

The Skinner Engine Company of Erie, Pa., introduced its first Marine Unaflow steam engine in 1929. This multi-cylinder, single-expansion engine was called "Unaflow" since the steam took a unidirectional path through the cylinders. Economical, reliable, and relatively maintenance-free, these engines were quickly responsive and thus especially well suited to marine applications where maneuverability was important. Thus Skinner UnafloWS were installed in heavy seagoing tugboats, small coastal and inter-island vessels, and inland waterways vessels.

On the other hand, the Unaflow was not appropriate for ocean-going bulk carriers because its inlet steam temperature and pressure were not high enough. After World War II, Skinner responded to this shortcoming (highlighted by the ascendancy of steam-turbine and diesel power plants) by developing a steeple compound engine, similar to those that powered the famous Liberty Ships.

Between 1950 and 1955, a dozen Skinner Compound Unaflow engines were installed in Great Lakes vessels. Two each went into the *Spartan* and *Badger*. (The *City of Midland 41* got single-expansion UnafloWS when built in 1941.) The twin car-ferrys' 3500 h.p. Steeple Compound UnafloWS would literally prove to be the last word in maritime reciprocating steam. (One other Skinner Unaflow-powered Great Lakes vessel remains in operation: the self-unloading cement carrier now called the *Southdown Challenger*.)

The *Badger's* two engines each have four pistons powering the crankshaft. In a "steeple compound," each of the piston rods passes through two cylinders: a low-pressure one with (in the *Badger's* case) a 55-inch diameter piston and, on top of that, a high-pressure one with a 22½-inch diameter piston. The smaller cylinder stacked above the larger resembles a church steeple, hence the name. The cylinders are single-acting, with the high-pressure one working the crank on the upstroke and the low-pressure on the downstroke.

The steam for these then-state-of-the-art reciprocating engines comes from four type D marine boilers made by the Foster-Wheeler Company. The boilers feature economizers that use exhaust gases from the burning coal to preheat the water going in and superheaters to raise the temperature of the steam on the way out. For two round trips across Lake Michigan, the *Badger* uses about 71.2 tons of bituminous coal—once delivered by hopper car through hatches on the car deck, and now by dump truck.

In 1996 the *Badger's* engines and boilers were recognized as an Historic Mechanical Engineering Landmark by the American Society of Mechanical Engineers—an appropriate honor for machinery that 50 years after its inauguration is still performing admirably in its original role.—Karl Zimmermann

A Skinner ad (above right) touted the Unaflow's suitability for the two new car-ferrys. A crewman on the *Midland* (right) uses one of the engines' viewing ports. Unlike earlier steam engines, the Unaflow was mostly enclosed in sheet metal.

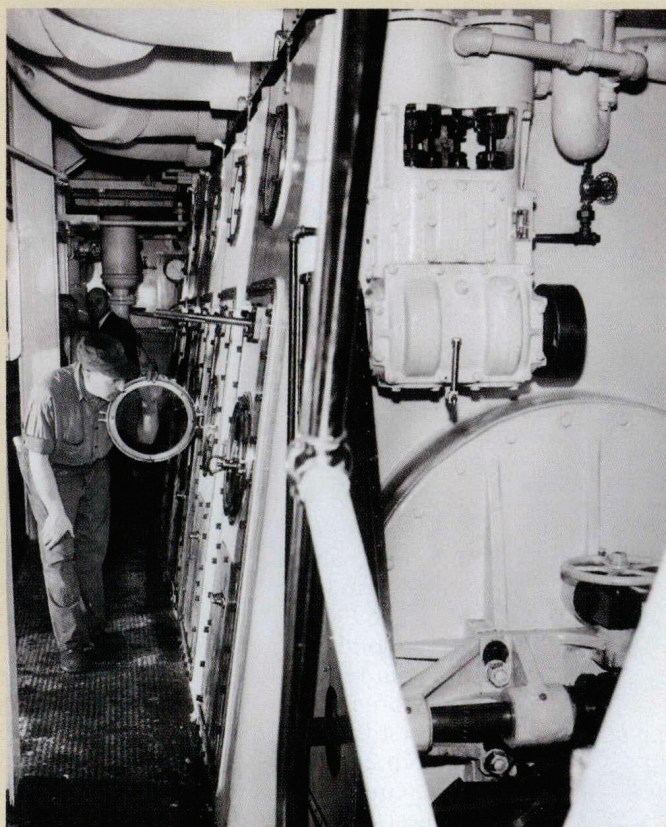
MANEUVERABILITY - A Must
for this line-up ... for C & O Trainferries

powered with ... **SKINNER COMPOUND UNAFLOW MARINE STEAM ENGINES**

Imagine maneuvering the 410 foot S. S. "Spartan" or "Badger" through the narrow Schwanitz leading into the Milwaukee harbor and running stern to the docking area just that several times daily, in all kinds of weather, and repeat a performance almost as difficult at Ludington and Manitowish. Their Skinner Compound Unaflow Marine Steam Engines enable them to maneuver with an agility that brings difficult docking down to the level of a daily routine.

One of four 4000-horsepower four-cylinder Skinner Compound Unaflow Marine Steam Engines propelling the exclusive Trainferry "Badger" and "Spartan."

For Over 60 Years, Skinning Diesels, Building Steam Engines
SKINNER ENGINE COMPANY, ERIE, PA.
Canadian Vickers Limited, Montreal, Canada & American Drydock Co., Amsterdam, Netherlands
Alstom & Outotec, Le Havre, France



CLASSIC TRAINS COLLECTION



CHESAPEAKE & OHIO HISTORICAL SOCIETY COLLECTION

Staterooms on the *Badger* and *Spartan* recalled railroad sleeping-car practice of the day. Functional and efficient, if not luxurious, they were more than adequate for the short crossings. Most passengers simply stayed on deck or in the lounge.

Down on the Car Deck, the atmosphere was less refined. In a view from early in her career, the *Spartan* is ready to depart from Ludington. Increased car height prompted modification of the *Badger* in the 1960's, but *Spartan* remained as-built.

tion, however, because the military urgently needed additional landing craft, and ordered five from Christy.

This helped the builder weather the financial storm, and on September 6, 1952, the *Spartan* and *Badger* were christened in a joint ceremony. Shedding the Pere Marquette tradition of naming boats for on-line cities, C&O honored the two states served and their universities. *Spartan* recognized Michigan State College's athletic teams, and *Badger* the University of Wisconsin's. No numbers were officially assigned to the boats, and none ever appeared on their hulls, although the *Spartan* was routinely referred to as 42 and the *Badger* as 43. The numbers did appear, instead of the names, on the Ludington arrivals and departures board, in C&O memos, and on linen and equipment.

"I christen thee the S.S. *Badger*," intoned Mrs. Walter J. Kohler, wife of Wisconsin's governor on that September 6th, and the vessel slid sideways down the ways, sending a huge wave cascading into a string of refrigerator cars spotted to protect a Christy warehouse across the slip. The *Spartan* was ready for sea trials and a maiden voyage in October, but the *Badger* had six months of fitting out remaining before making her first trip on March 21, 1953.

The Great Lakes' largest, most modern—and



CHESAPEAKE & OHIO PHOTO, JOHN B. CORNS COLLECTION

final —carferries were in operation.

At 410 feet, 6 inches, the two new boats were slightly longer than *City of Midland 41*. They were powered similarly, with coal-fired reciprocating steam engines, a decision that in 1953 must have seemed more surprising than it had when the *Midland* was built. Like the *Midland*, their cruising speed was 18 mph.

The *Badger* and *Spartan* were the cornerstones of a \$20 million expansion and modernization program undertaken by C&O in the early 1950's

for its carferry fleet, but there was more. *Pere Marquette 21* and *Pere Marquette 22* were each stretched by 40 feet at Manitowoc Shipbuilding; given Skinner Unaflo engines, allowing them to achieve the 18-mph standard; and crowned with streamlined funnels. (*City of Saginaw 31* and *City of Flint 32* had been retrofitted with similar funnels in 1942.) The C&O now had a fleet of seven boats capable of 18 mph, all with reasonable passenger accommodations and at least a somewhat modern appear-

C&O steam lives!



Big and brawling, the *Badger* is not the old-fashioned vessel that might leap to mind when you think “steam-boat,” but it certainly is just that. As a passenger today, you will have an experience much like the boat’s first passengers had.

Some things have changed, of course. You can no longer experience the ice-breaking drama of a winter crossing. Gone is the pleasure of watching switch engines push cuts of freight cars across the apron, with great thudding and squealing of flanges, and feeling the boat list underfoot as loading progressed. No more is the routine of securing freight cars with rail clamps, jacks, and chains. When Lake Michigan Carferry Service assumed operations, the Car Deck was paved over, and railroad cars banished forever.

There were other changes, mostly upgrades, as part of LMC’s \$500,000 refurbishing. The boat’s 44 outside staterooms were repainted, reupholstered, and recarpeted. The 16 inside staterooms were removed and replaced by an exhibit area with artifacts, photos, and historical commentary (created in cooperation with the excellent Manitowoc Maritime Museum); a gift shop; a television/video room; and a game arcade. The *Badger*’s after Boat Deck was originally designed to carry autos. With the entire Car Deck available for this purpose, LMC enclosed this area under a canopy as additional passenger space. Because of changing tastes and economics, a dining room with linen and table service has given way to a cafeteria.

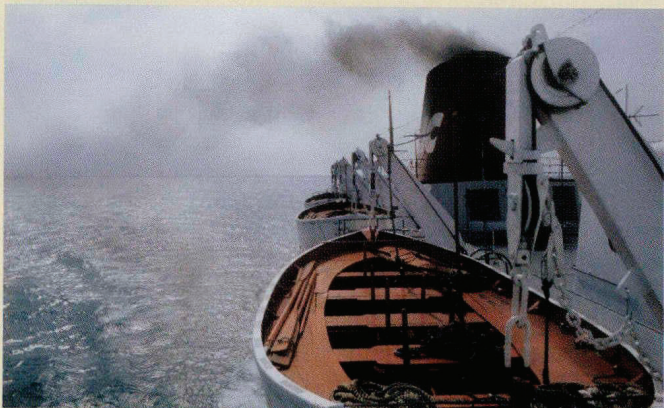
Though much more “entertainment” is provided now than in

C&O days, especially for children, the best entertainment is the same as always—being on deck as the boat steams away from the slip with a single long blast on the horns. Wake churns, the stern sea gate lowers, and the *Badger* is off on its 4-hour crossing, a ritual enacted at each port once daily in spring and fall and twice daily in summer. The smudge against the sky and smell of coal smoke are reminders of the source of her power, as is a certain grittiness on deck. Sharp ears may pick up the trill of telegraph—called a “Chadburn” on the Great Lakes, after the equipment’s British manufacturer—as the wheelhouse rings down a “full ahead” to the engine room, and the engineer answers when he’s made that adjustment to the throttles.

Lake Michigan is big, second largest of the Great Lakes, and in mid-crossing you’re well out of sight of land. Though it is not as famous for storms as Lake Superior, don’t be surprised if the *Badger* rolls a good deal, its bow rising and falling in rhythm as it plows ahead. Announced by three long blasts on the horns, the “harbor call,” arrivals are even more interesting than departures, since the *Badger* must back into its slip. This maneuvering usually involves the anchor clamoring down the hawsepole, and a slow pivot on a turning dolphin. Finally, the venerable carferry is fast, without tugs but with the time-honored maritime skills that are much a part of its rich tradition.—Karl Zimmermann

For schedules, call (888) 337-7948 or visit www.ssbadger.com.

***Badger* in the 1990’s (clockwise from below left):** View aft from wheelhouse (1998); interior of wheelhouse (1993); stokehold (’93); starboard engine telegraph and throttles (’93).



ROBERT S. MCGONIGAL



THREE PHOTOS: KARL ZIMMERMANN





CHESAPEAKE & OHIO PHOTO, JOHN B. CORNS COLLECTION

Passengers line the *Badger's* rail to watch her dock at Ludington. Visible in this C&O-era scene are *City of Midland 41* (left), *City of Saginaw 31*, and *City of Flint 32*.

ance. (The fastest Lake Michigan car ferry was Ann Arbor's *Viking*. The 1965 diesel conversion of *Ann Arbor No. 7*, she had a cruising speed of 21 mph.)

THE YEARS immediately ahead were great ones for the C&O fleet, and Ludington was the busiest car ferry port in the world. The boats ran 'round the clock, making three round trips a day to Milwaukee (four in summer), a 6-hour crossing. The 4-hour trips to Manitowoc were made twice daily and to Kewaunee once daily. During this period the auto and passenger business swelled, and freight-car commerce held strong. Freight traffic—typically paper products, auto parts, chemicals, and salt westbound and beer, wood pulp, lumber, and heavy equipment east—peaked in 1959, but held up fairly well through the 1960's. In 1961, C&O hauled 132,000 freight cars, 54,000 autos, and 153,000 passengers across the lake.

In 1963 C&O took over the Baltimore & Ohio, beginning a period of coordinated operations. Although this alliance would eventually lead to the ferries' downfall, with B&O's Chicago operations offering a good all-rail alternative, its first effect was positive: bringing B&O's excellent passenger

department (run by Paul Reistrup, later president of Amtrak) to bear on the business that was clearly the future hope for the boats. By the early 1970's, however, this department had vanished. Freight railroading had changed, too. The 100-car trains that had become routine were ill-suited for the ferries, and pre-blocking and run-through operations had somewhat alleviated the Chicago bottleneck.

Simply put, C&O had lost interest in running the ferries and would work assiduously to eliminate them until it succeeded in 1983. In March 1975, Chessie System (a parent created in 1973) filed with the Interstate Commerce Commission to eliminate all car ferry operations. The ICC in 1978 compromised with what came to be called the "Kewaunee package," allowing C&O to drop service to Milwaukee immediately, to Manitowoc in 1980, and to Kewaunee in 1983. (A key concern for the ICC throughout the abandonment proceedings—which became the longest in the history of American railroading—was protection of the Green Bay & Western, which typically received more than one-third of its interchange traffic from C&O and Ann Arbor boats at Kewaunee.)

After appeals and protests, and some subsidies from the State of Michigan, Milwaukee service (for passengers and automobiles only at the end) finally stopped in October 1980; the last Manitowoc sailing (under

what by then was CSX auspices) came in January 1982. That left only the Kewaunee route, which was slated to go the next year. But before it did, a group of Ludington businessmen formed the Michigan-Wisconsin Transportation Company. MWT bought the *Midland*, *Spartan*, and *Badger* from CSX and agreed to lease the Ludington port facilities and assume labor-protection costs for six years—a period for which CSX, on its part, would continue cross-lake shipments.

In July 1983, the *Midland* entered Ludington-Kewaunee service, where it remained until November 1988, when it was replaced by the *Badger*, which for the summer 1983 and '84 seasons had operated auto- and passenger-only service to Milwaukee (the *Spartan's* fires had been dropped in 1979). Finally, on November 16, 1988, the Kewaunee route was shut for good, either because money had run out or because the Kewaunee channel had silted in, or both. The *Badger* was tied up, and it seemed that Lake Michigan car ferry service had finally come to an end. (Grand Trunk Western had quit in the mid-'70's, Ann Arbor in 1982.)

One more miracle remained, thanks to the late Charles F. Conrad, a self-made millionaire from Holland, Mich., whose father had been a chief engineer on the PM boats. He bought the three ex-C&O ferries and, on May 15, 1992, began seasonal Ludington-Manitowoc service as Lake Michigan Car Ferry Service with the *Badger*, which has continued to soldier on, alone (the *Spartan* remains moored at Ludington as a parts source for her sister). In 1997, *City of Midland 41* was converted to a barge, sans superstructure and the hull truncated to the car deck, a sad end for arguably the most beautiful of all the car ferries.

But the *Badger*, a stubborn survivor from the age of steam, appears to have a future, booming across Lake Michigan during Midwestern summers, keeping the memory alive of a unique and charismatic chapter in railroading. **1**

