

Bringing Car 33 Back to Life

In Time for the 100th Anniversary of the National Park Service

By Steve Thomas



For the second year in a row, East Troy Railroad Museum volunteers delivered a restored Chicago, South Shore & South Bend car to the operating roster.

The motivation for the herculean efforts in 2016 had to do with the 100th anniversary of the National Park Service.

Five of the museum's South Shore cars – including car 33 – came to the railroad as a gift from the National Park Service at the Indiana Dunes National Lakeshore. When the original 1920s-era cars were replaced by new equipment in 1982 and 1983, the Congressman serving Northern Indiana worked to pass a bill to transfer the retired cars to the Park Service. The hope was to establish a museum at Indiana Dunes that would feature some of the old cars and tell the history of the South Shore Line. Four of the stops on the South Shore line are at stations in or near the dunes.

Unfortunately, the museum funding never materialized. So the rangers at Indiana Dunes asked various historical societies and tourist railroads to take and preserve the cars.

When the East Troy museum took delivery of five cars in 2010, the railroad pledged to have at least one ready to help the Park Service celebrate its 100th anniversary.

But by January of 2016, precious little progress had been made. With only six months remaining until Chicago Day — the day that made the most sense for a cel-

▲ Car 33 approaches the platform in East Troy on one of its regular runs on July 16, 2016. —Photo by Tom Fleming, photos by Ryan Barry unless otherwise noted. Photos are generally shown in chronological order.

ebration — somebody needed to step up. That somebody was Mike Jaehn.

“It was an honor to be involved,” Jaehn said. “It’s a piece of history that otherwise might have been lost.”

Jaehn started by preparing a list of tasks needed for the restoration. Then he set priorities and sourced as many parts as possible

ahead of time, so that other volunteers could see what had to be done and had the supplies to keep the project moving.

The task list started out with nearly 150 items, but ballooned to over 175. More than 25 volunteers put in hundreds of hours, many working late into the evening multiple weekends in a row. Some even

▼ The old canvas roof covering had become brittle and many holes were visible, including a large tear along the roof trim seen in this photo. The wood beneath had rotted away. The volunteers did not know how much damage would need to be repaired on the roof decking until the canvas had been removed.





▲ Car 33 is shown in the East Troy car barn, where the restoration took place. The pantograph and most of the vents have been removed from the roof in this photo.

worked on weeknights after their day jobs.

The interior of car 33 had been cosmetically restored for the proposed Indiana Dunes museum, and the work had been done beautifully. But the car was not expected to operate again. So while it looked pretty good inside, many of the mechanical and electric systems had been neglected or damaged during the interior restoration.

For instance, a 120-volt lighting and electrical system had been installed inside the car, replacing wiring and fixtures designed to work with the 1,500-volt power provided by the South Shore's overhead catenary.

In the process, many electrical cables had simply been cut or bypassed, including the Multiple Unit (MU) control cables

that allow two or more South Shore cars to be run together.

Because so much wiring had been damaged or cut, East Troy volunteers first had to run car 33 up onto rubber mats to isolate it electrically from the track and then figure out which wires went where — and which could be removed. Volunteers like Ryan Barry, Russell Griswold and Dustin Robinson spent many hours poring over 90-year-old wiring diagrams to figure out how to put all the systems back together again.

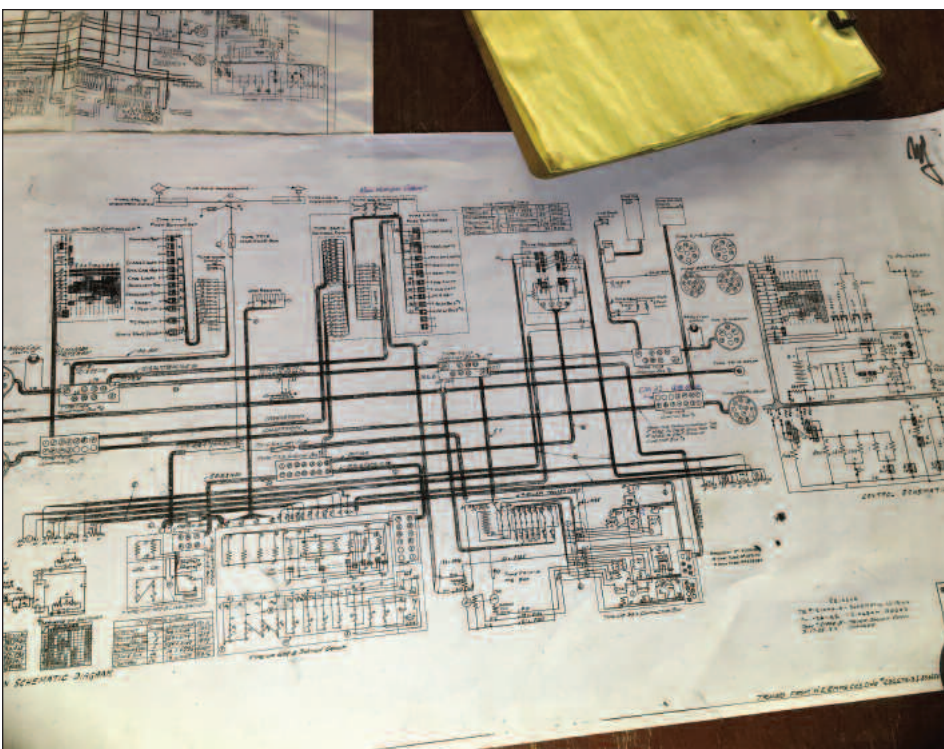
It was late May before the wiring and electrical tasks were complete. Those tasks had included cleaning and rebuilding the control stands at both ends of the car, reinstalling the fuse banks, and cleaning and refinishing the cab switches and cabinet.

Some of the hardest wiring work had to be done on the ground underneath the car, in an unheated car barn. The East Troy Railroad's new maintenance facility was under construction but would not be available for move-in until mid-July.

Wiring was just the most challenging of many problems.

"It seemed like every time we turned around there was something new and unexpected to deal with," said Jaehn. "Both brake stands had to be sent out for

▼ Wiring schematics from 1928 were essential to restoring car 33 to operation.



repair, and we needed to find a new 600-volt compressor.”

Jaehn said the pressure built toward the end of the project, because the roof needed to be replaced and there was quite a bit of graffiti on one side of the car. Replacing the roof was not an easy task, because the South Shore line uses pantographs to connect to the overhead trolley wire. The pantograph on car 33 had to be removed and replaced by two new trolley poles so that the car could operate on the East Troy Railroad. There were also 18 roof vents to remove, and each vent had 36 screws.

“We also knew there were some places where the wood decking and trim was rotten, but we didn’t know how bad it would be until we got everything off the old roof and removed the canvas,” said Jaehn. “It turned out that the wood deck was in pretty good shape and the rotted spots were repaired fairly quickly.”

Fred Biederman, who did most of the deck repairs, had to replace about half of the trim — also called the “nail board” — fashioning new poplar boards to match the existing ones. The trim was fastened to the car’s steel structure using machine bolts. So a big part of the job was getting all the old machine bolts out and drilling and re-tapping the ones that could not be removed. Biederman also marked the steel structure below the roof deck so that a new catwalk could be installed once the roof was finished.

A Lost Art?

Installing a new canvas roof is a bit of a lost art, but the East Troy Railroad Museum has two experienced volunteers — Biederman and Skip Lichter — who are trying to teach the rest of the crew how to do it.

With the catenary, roof vents and catwalk removed — and every rotted section of deck and trim repaired — the crew sanded the deck. The sanding helps find the remaining tacks and staples left from the old roof, ensuring that the new canvas is not damaged when it is placed on the roof. Next, the team stapled butcher paper to the whole roof. The butcher paper ensured that the new canvas could move freely when it was placed and stretched.

Then the new canvas was positioned on the roof and coated with two applications of a special roof stain. The purpose of the stain is to surround all the canvas fibers so that they do not deteriorate when exposed



▲ Both control stands were removed, disassembled, cleaned, rewired and lubricated before being reinstalled in car 33. ▼ Volunteer Ben Killips works to repair and reassemble one of the “new” headlights for car 33, while Dustin Robinson and Ryan Barry look on.





▲ Car 33's "new" air compressor has been repaired and tested and is ready for installation. This large compressor is so heavy that it could only be moved with the assistance of a forklift attached to the railroad's front end loader. ▼ Ryan Barry works beneath the car to splice and tape some of the wiring that had been cut when the car was being cosmetically restored in Indiana.



to the sun and the elements. Wooden clamps were fastened to the canvas at both ends of the car and attached to turnbuckles to help stretch the canvas.

After allowing the canvas to stretch for about a week, and carefully adjusting the turnbuckles every couple of days, the team flipped over the canvas and began stapling it to the nail boards. Working from the center of the car, they stretched the canvas and attached it on both sides at the same time, gradually working toward the ends of the car. Once the canvas had been attached, they applied five coats of stain, waiting for the coats to dry in between applications.

By this time it was mid-June. "It was probably at least 100 degrees in the barn, and the stain puts off some pretty strong fumes," said Jaehn. "We were all a bit loopy."

When the canvas was dry, Biederman began making and attaching supports for the new catwalk, using the markings made earlier to identify the location of the structure beneath the roof deck. The new supports were fashioned from oak, using some of the old roof supports as templates.

Good News on the Traction Motors

"The best news of the whole project was the day we found out that the traction motors worked," said Jaehn. "Now we had hope that we might just be able to make the deadline."

The trolley poles had to be installed and wired, and many smaller tasks awaited: period headlights needed to be found and rebuilt, authentic-looking destination signs needed to be designed, new air horn valves needed to be found and installed, some window glass needed to be replaced, and new doors and historically-correct door handles needed to be mounted.

One week before Chicago Day, when the National Park Service Rangers would be there for the dedication, car 33 went on its first "road test." Things went well, but a few more tasks were added to the list.

Then, just two days before the dedication, Jaehn began to tackle the side of the car covered in graffiti. He removed as much as possible with a power sander and then began painting over the damaged spots. But the first paint formulation did not cover well. On Friday morning — with just one more day before the dedication — Jaehn went back for a second try with a new paint mixture. It covered the damage well and it matched the existing color perfectly.



▲ Three of the roofing team volunteers stretch the canvas on top of car 33. From left are Fred Biederman, Skip Lichter and Dennis Woodward. ▶ Mike Jaehn uses a sander to remove a large area of graffiti from the car just two days before the dedication ceremony. Some of the “artwork” is still visible in the lower right-hand part of the photo.

When the National Park Rangers, led by Judy Collins, boarded the car late that Friday afternoon, they couldn't have been happier. According to Jaehn, there may have even been a few tears shed. An historic rail car nearly lost to history was now back in all its former glory.

Early on Saturday July 16th, car 33 was rechristened as the “Indiana Dunes” and rolled through a ceremonial banner stretched across the tracks opposite the East Troy depot. Passengers boarded the car for its first revenue run in more than 30 years.

The dedication of car 33 was a great way to take part in the Park Service's 100th Anniversary. And the event and participation of the rangers was a nice reward for the many volunteers who did their part to bring this particular piece of history back to life.

Many would echo Mike Jaehn's comment: “It was an honor to be involved.”

See the Winter 2010 issue of *First & Fastest*, pages 70-77 for photos and the story of moving five cars to East Troy.





▲ From left, Ryan Jonas, President of the East Troy Railroad Museum, and NPS Rangers Bruce Rowe, Cliff Goins and Judy Collins stand with a new graphic display telling the story of how the South Shore cars came to East Troy. ▼ Mike Jaehn prepares to ease car 33 through a ceremonial banner across from the East Troy Depot. —Photo by Tom Fleming

