

Carolina Conductor



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Monthly Newsletter of the Carolina Railroad Heritage Association, Inc.

June 2017

**Preserving the Past.
Active in the Present.
Planning for the Future.**

Web Site: hubcityrrmuseum.org
Facebook: Carolina Railroad
Heritage Association

Meeting Site:
Woodmen of the World Bldg.
721 East Poinsett Street
Greer, SC 29651-6404
Third Friday of the Month at 7:00 pm

**Hub City Railroad Museum
and SOU Caboose #X3115:**
Spartanburg Amtrak Station
298 Magnolia Street
Spartanburg, SC 29301-2330
Wednesday 10-2 and Saturday 10-2

Officers:
President:
David Winans — 864-963-4739
Vice-President:
Mac McMillin — 864-624-9658
Secretary:
Marv Havens — 864-292-3852
Treasurer:
Terry Brelsford — 864-320-6201

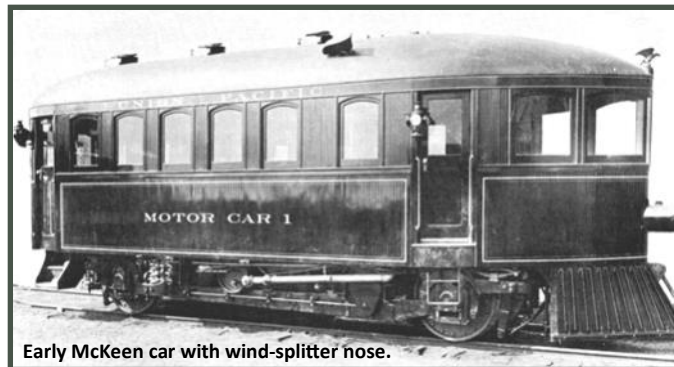
Directors:
Milton Ashley — 864-504-5202
Charles Conn — 864-326-6070
Lee Dobbs — 864-268-3939
Bruce Gathman — 864-850-3642
Bob Klempner — 864-431-5409

Mailing Address:
Suite #129
2123 Old Spartanburg Road
Greer, South Carolina 29650-2704

Editor:
Bruce Gathman—
shaygearhead@bellsouth.net
Articles and club news due by the
2nd Wednesday of month.

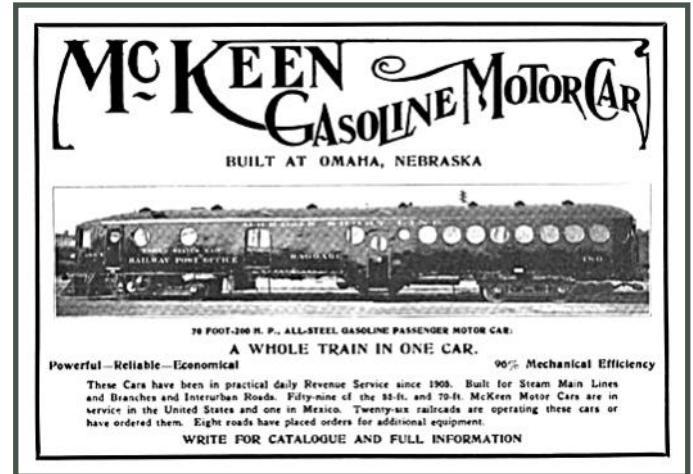
McKeen Motor Cars

The McKeen Motor Car Company of Omaha, Nebraska, was a builder of internal combustion-engined railroad motorized railcars, constructing 152 between 1905 and 1917. Founded by William McKeen, the Union Pacific Rail-



Early McKeen car with wind-splitter nose.

road's Superintendent of Motive Power and Machinery, the company was essentially an offshoot of the Union Pacific and the first cars were constructed by the UP before McKeen leased shop space in the UP's Omaha Shops in Omaha, Nebraska. The UP had asked him to develop a way of running small passenger trains more economically,



and McKeen produced a design that was ahead of its time. Unfortunately, internal combustion engine technology was not, and the McKeen cars never found a truly reliable powerplant.

The vast majority of the cars produced were for E. H. Harriman's empire of lines - Union Pacific, Southern Pacific and others. Harriman's death in 1909 lost the company its major sponsor and investor, and Harriman's successors were less enthusiastic about the McKeen cars.

Many McKeen cars ended up being re-engined with a variety of drive mechanisms — gasoline-

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Arrivals

Preparation for Train Day



In preparation for this years "Train Day" several things have been happening around the museum and caboose at Spartanburg.

First, the displays in the museum are in the process of being refreshed and new items added and old ones removed.

Secondly many items are receiving attention around the caboose. The train viewing platform in front of the caboose has been pressure washed and painted. Several new railroad crossing signs have been installed by the track which extends from under the caboose.



Departures

Continued from Page 1 - *McKeen*

mechanical, gasoline-electric, diesel-electric, and even steam power.

Most, although not all, McKeen cars had the distinctive "wind-splitter" pointed aerodynamic front end and rounded tail. The porthole windows were also a McKeen trademark, adopted allegedly for strength after the seventh production car. A dropped central door, as pictured, was also present on the majority of the cars. Two lengths, 55 and 70 feet, were offered; either could be fitted out with a large mail and express area ahead of the center doors, a smaller mail/express area, or the car could be all seats for a maximum capacity of 64 or 105 respectively.

Originally, McKeen cars used engines from the Standard Motor Works of Jersey City, New Jersey, but switched to an engine of their

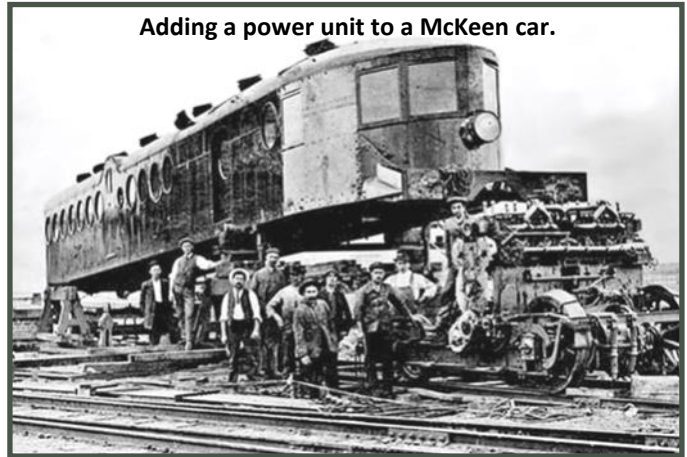
cylinders were vertical and the engine mounted transversely across the car in all McKeen cars and locomotives produced.

All engines were equipped to be run in either direction, as is not uncommon with marine engines; there was no reverse gear. To run in reverse, the engine had to be stopped, the camshaft shifted by the motorman to the reverse cam set, and the engine restarted in reverse. Starting was by compressed air.

The lead truck of the car was the powered truck; the engine was rigidly mounted atop this truck and moved with it when it turned. Only the front axle was powered via a chain drive; a design decision which contributed to the car's poor adhesion characteristics. The front wheelset were 42-inches in diameter, while the three other

wheelsets were 33-inches in diameter. Many operators found the McKeen car to be lacking in power and traction, the latter unsurprising since only one of four axles was powered.

McKeen cars were generally

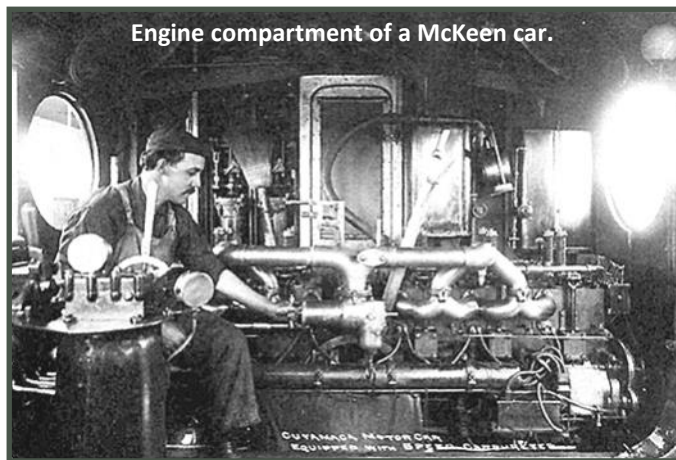


Adding a power unit to a McKeen car.

wood-paneled on the interior and fitted with transverse bench seats with a central aisle. The rounded rear was fitted with a semi-circular bench seat. Lighting was originally acetylene.

Most of the problems experienced with McKeen cars involved the powerplant and drivetrain. As with many other attempts to bring marine engine technology to the rails, engines that were reliable on the stable platform of a ship when attended to by experienced technicians and operators proved less so when exposed to the vibration, indifferent maintenance and less careful handling they found on the railroad.

Starting the engine was a problem on the early cars; with no independently powered compressor, the compressed-air starting relied on the limited reserves of the car's reservoirs. There were many reports of cars being started by being pushed or towed by locomotives or even horses, after the compressed air ran out. Later cars, with an independent gasoline-driven compres-



Engine compartment of a McKeen car.

own design from the eighth car produced on the Union Pacific. All engines were straight-6 in configuration, of power ratings between 100 horsepower on the first car and a maximum of 300 horsepower on the most powerful later cars. The

Continued on Page 4 - *McKeen*

Manifest

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sor which could be hand-started, did not suffer from these problems.

The lack of a reverse gear also caused problems. The engine had to be stopped, the camshaft shifted to a set of reverse cams, and then started in the opposite direction. This was acceptable shipboard, perhaps, but deeply disliked by railroad operators. Accounts exist of engineers' elaborate schemes for avoiding the necessity to reverse.

The transmission was a common problem; a clutch did not seem to exist which combined the ability to withstand 200 horsepower on a regular basis with the ability to give a smooth start. Clutch failures were commonplace. Competitor GE's cars used an electric transmission, and that or a hydraulic torque converter have been used on the vast majority of successful internal combustion-engined rail vehicles since.

The Southern Utah Railroad took possession in 1916 of the most powerful McKeen motor car ever produced, with a six-wheel leading truck. Two of the three axles in that truck were powered, connected by side rods; the engine developed 300



McKeen car used by Southern Pacific in Oregon.

horsepower. Unlike most McKeen cars, it had a rounded front end instead of the knife-edge prow normally favored; it also featured roof-mounted radiators in addition to those in the normal location behind the pilot.

Despite the extra power, this was only a 55-foot-0-inch car with a capacity of 48 passengers. The additional power was needed for the severe grades (max. 4.92%) and curvature of the line between Price and Hiawatha for which it was intended.

The car was apparently not a success and did not last long in service, being withdrawn from service in

June 1917 and dismantled, the engine and power truck being sold. The carbody was used as a shop employee locker room at Martin until it was dismantled in 1990. In the mid '90s the dismantled #100 was then purchased by a ranch owner in Utah. There, he cut it in half at the vestibule and used the rail car as two separate storage units. In 2015, the two halves were then traded for two sea containers by Bently enterprises LLC. Moved to Minden, Nevada, and is undergoing a complete renovation.

The company produced at least one gasoline-engined locomotive. A locomotive was produced in about 1913 and worked around the company shops in Omaha. A locomotive was tested in the UP's Aspen Tunnel. A locomotive, numbered 5 but possibly again the same one, was documented in the contemporary trade press, photos of which are below.

It is described as being of 0-4-2 wheel arrangement, with the engine mounted across the car as normal



Southern Utah McKeen car with 6-wheel drive truck.

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Rare Mileage

Continued from Page 4 - *McKeen*

and driving the rearmost driving axle in the normal McKeen fashion. Siderods transferred the drive to the other pair of driven wheels. The arrangement was largely identical to the three-axle lead truck on the unique Southern Utah Railway McKeen car.

Zeitler documents this locomotive as having a tractive effort of 12,000 lbf. The frame was cast steel, and the superstructure constructed of steel, with sufficient solidity to add structural strength; the horizon-



The Virginia and Truckee McKeen car #22 in Nevada State Railroad Museum.

tal cast steel engine bed was also described as a structural member. The straight-6 engine had an 11-inch bore and 15-inch stroke, for a total displacement of 8,553 cubic inches; it developed 300 horsepower.

Schopp documents that a locomotive was sold to the Motley County Railroad in 1915, and speculates that this may also have been the same single locomotive. In the same article, he recounts a locomotive reported as being stored at the Omaha shops in 1917 that may have been the same locomotive once more.

Another McKeen locomotive was created by the Charles City Western Railway of Iowa by build-

ing a wooden boxcab superstructure atop a McKeen power truck.

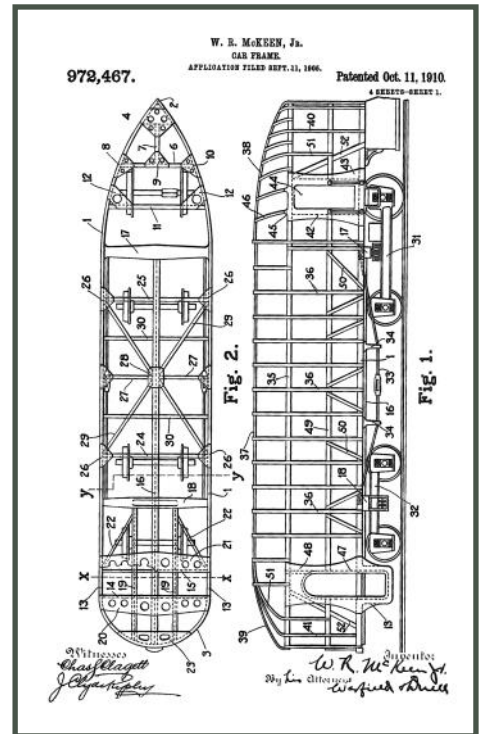
An example is preserved at the Nevada State Railroad Museum. This car ran on the Virginia and Truckee Railroad. It has been fully rebuilt. As of September 2010, it runs on special events.

The Nevada State Railroad Museum has restored a full McKeen car, Virginia and Truckee Railway Motor Car 22, a 1910-built 70 foot car. This was one of the last McKeen cars to be still running with its original motor. It made its last run in September 1945, and its body was sold in 1946 for service as a roadside diner, later to be used for a plumbing supply store in Carson City, Nevada. Donated to the Museum in 1996, its first run was on May 9, 2010, the car's hundredth anniversary of

construction. The original powerplant did not survive, and no other McKeen engines could be located. Consequently, a modern diesel engine was fitted to allow the car to operate up to the original maximum speed. The fully restored McKeen motorcar was put back into operation on May 9, 2010, right on schedule for its 100th anniversary of its construction. The motorcar is now being used at the Nevada State Railroad Museum in Carson City Nevada for special occasions such as Independence Day and Nevada Day. The NSRM also owns the remains of a second McKeen car which was converted into a diesel-electric switching locomotive.

Another McKeen body, construction number 83/103, survives in Anchorage, Alaska. It originally belonged to the San Diego Cuyamaca & Eastern Railroad then was later sold to the Yuma Valley Railroad before arriving in Alaska around 1921, being re-engined and round-nosed in 1924, converted to an unpowered trailer in 1935, and finally retired in the late 1940s after serving in the 714th Railway Battalion during WWII. The car, originally named the "Cuyamaca" is now in the process of transportation and restoration by Madison Kirkman. He plans to restore the car back to running condition, and transported the car in 2015.

Two unpowered McKeen trailers survive; one is a storage shed in St. Helena, California. While the other is at the Illinois Railway Museum.



Marker Lights



Southern Railway Jim Crow McKeen Car



The Jim Crow Laws allowed businesses and government to provide 'separate but equal' facilities to non-white people. These services however were often poorly maintained when for use by blacks, while white amenities were better taken care of.

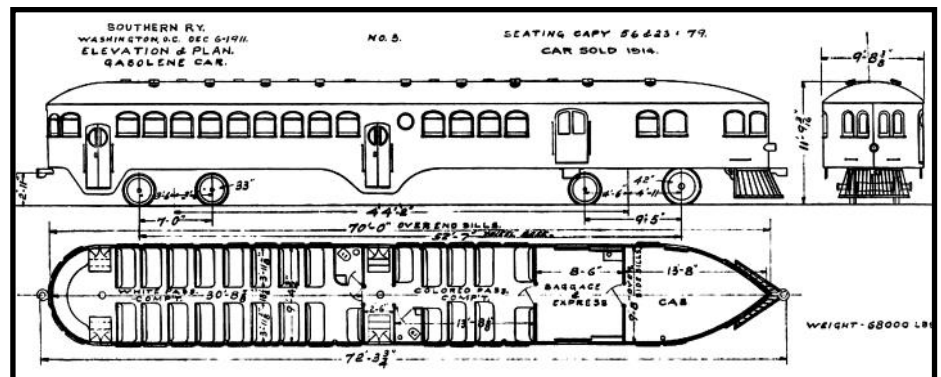
The Supreme Court of the United States ruled in Brown vs. the Board of Education that separate was not equal. That was 1954, and it still took time for people to accept it, that was how the black boycotts and protests, which was primarily ran by

Martin Luther King, where there to change how blacks were treated.

Putting this all-in perspective, there were two McKeen cars that were sold to railroads in the South

that requested that they be built with separate sections to split Whites from Blacks. The two cars were the Norfolk Southern #90 (different railroad than the current railroad) and the Southern Railway #3. Both Cars were 70' long, and the Southern Railway Car had two sets of dropped doors. One in the back and one in the center.

Video about McKeen Cars: <https://www.youtube.com/watch?v=JVKfc5uINLk>.



Wanted—Articles for the Carolina Conductor

Submit an article of 200 words or more with some photos and captions and see them in print. Every one of us has some unique railroad experience that would make interesting reading for our membership. With Jim Sheppard's passing your editor needs more contributions of local railway history and news.



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