Carolina Conductor

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

Web Site:
hubcityrrmuseum.org

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

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Articles and club news due by the 2nd Wednesday of month.

WPRM Western Pacific Railroad Museum PORTOLA

By Phil Abers

This August (2016) a high school and college friend of mine, Chris, went with me to the Western Pacific Railroad Museum (WRPM). The museum is about 3 hours from Sacramento, CA and is in Portola, CA. The 37-acre site, the 16,000-sq. ft. diesel shop and 2.5 miles of track were granted use to the Museum by the Union Pacific RR in 1983. The museum has 36 locomotives and 120 pieces of rolling stock.

The Western Pacific (WP) was organized in March 1903 and remained independent until 1982 when it was merged into the Union Pacific. The WP operated from the San Francisco Bay area through Nevada to Salt Lake City. The WP, along with the Denver and Rio Grande and the Chicago, Burlington and Quincy, ran the famous California Zephyr. The Western Pacific operated the California Zephyr from Salt Lake City to Emeryville (Oakland), Ca.

WP California Zephyr is San Francisco bound.

The WPRM is predominately a train museum that features rolling stock. There are a few displays inside the diesel shop, but the trains are the main attraction. Most train museum have signs posted telling visitors not to climb onto the train cars. What makes the WRPM different is that climbing on the train cars is encouraged. Although uncommon to most railroad museums, the WRPM has a "Run a Locomotive" program. A visitor can choose between an EMD TR6A or RM H-12-44 switching locomotive and an EMD F7A streamliner (WP-917-D) or EMD GP9 road switching locomotive.

WP #917D that I drove.

The WP 917-D was included in WP's first order of F7 models, which were delivered as four units sets lettered A-D. The "A" and "D" units had control cabs. The WP 917-D was built by EMD in February of 1950. It is a 1500 HP unit, weighing 238,000 lbs. with a top speed of 60 MPH. The four-unit set (A-D) originally cost $671,530.

When I was a small child, my family rode the California Zephyr which began my lifelong interest in trains. When I knew I would visit the WRPM, I had to sign up for the "Run a Locomotive" program. I chose to operate the WP 917-D F7A type as this could have been the type of locomotive that pulled the Zephyr I rode years ago.

Our "Run a Locomotive" adventure was solely within the museum train yard. We had an instructor who gave us a brief introduction to the forward/reverse lever, the 10-position throttle, the brake and the

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Arrivals

C&O 2-6-6-2 to Run this Summer

The Western Maryland Scenic Railroad in Cumberland, MD, is adding trains to its schedule to accommodate more passengers who want to ride behind restored Chesapeake & Ohio Mallet 2-6-6-2 No. 1309, per John Hankey, the restoration project manager.

Hankey says that the railroad is planning to run additional trains in the last half of 2017. "At the moment, we're selling about $2,000 worth of tickets per day. Once word more generally gets out, it will rise steadily," Hankey says in an email.

The No. 1309 restoration project has had its ups and downs since the railroad purchased the engine from the Baltimore & Ohio Railroad Museum in June 2014. Officials now are confident that the project will be finished in time for the locomotive's debut on July 1. Hankey says that the FRA is expected to make a boiler inspection in the next few weeks, followed by a hydrostatic test by the end of February. Contractors also will begin installing flues and tubes, and attaching the many appliances to the locomotive boiler.

"I anticipate that by the end of April, we will be in the home stretch," Hankey says. "I believe we will be in early steam trials by the end of May."

Ringling Bros Circus Final Trains

Ringling Bros. and Barnum & Bailey Circus is a soon-to-be-defunct United States traveling circus company billed as The Greatest Show on Earth. The circus, known as Ringling Bros. and Barnum & Bailey Combined Shows, was started in 1919 when the Barnum & Bailey's Greatest Show on Earth, a circus created by P. T. Barnum and James Anthony Bailey, was merged with the Ringling Bros. World's Greatest Shows. The Ringling brothers had purchased Barnum & Bailey Ltd. following Bailey's death in 1906, but ran the circuses separately until they were merged in 1919.

On July 16, 1956, at the Heidelberg Race Track in Pittsburgh, Pennsylvania, the circus ended its season early, with President John Ringling North announcing that it would no longer exhibit under their own portable "big top" tents and starting in 1957 would exhibit in permanent venues, such as sports stadiums and arenas that had the seating already in place. In 1967, Irvin Feld and his brother Israel, along with Houston Judge Roy Hofheinz bought the circus from the Ringling family. In 1971, the Felds and Hofheinz sold the circus to Mattel, buying it back from the toy company in 1982. Since the death of Irvin Feld in 1984, the circus has been a part of Feld Entertainment, an international entertainment firm headed by Kenneth Feld, with its headquarters in Ellenton, Florida.

Citing declining attendance and high operating costs, Feld Entertainment announced the circus would close in May 2017 after 146 years.

Departures

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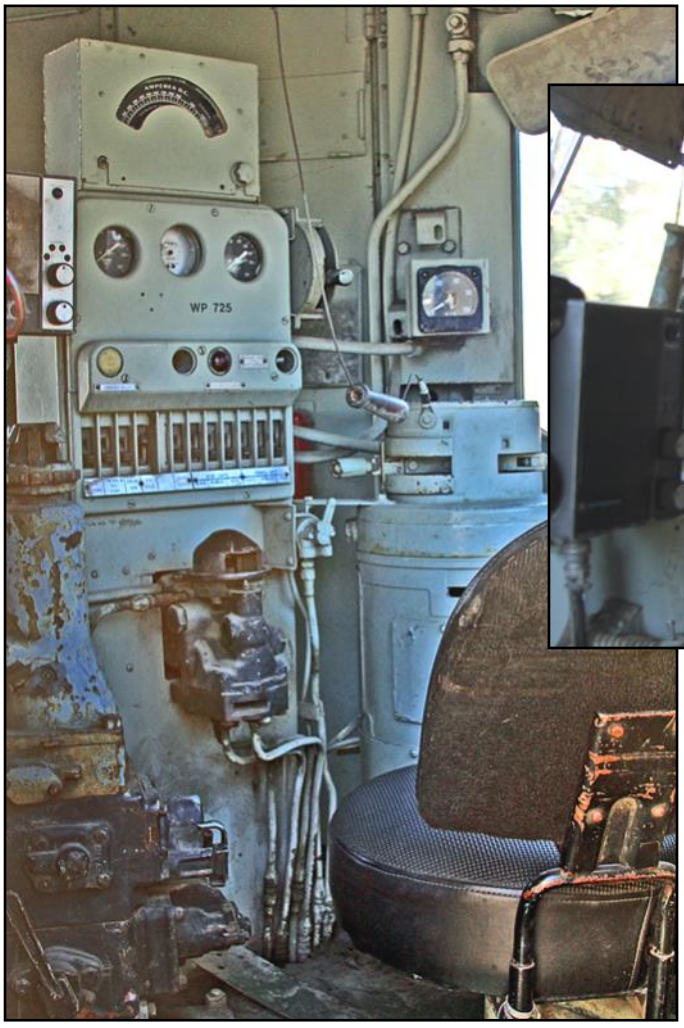
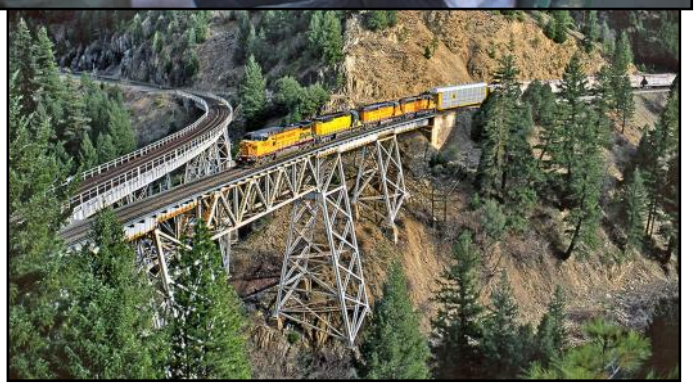
whistle operation. With those instructions we were ready to go. I took the controls at dysfunction junction, moved the directional lever into reverse and set the throttle to position 1. I felt the load on the engine, released the brake and off we went. Our instructor gave me directions and let me know what milestones to look for. I moved the throttle to position 2 and then 3. Before we crossed the road way I had to blow the locomotive whistle. I think blowing the whistle was my favorite action.

After passing the road way, I slowed down by reducing the throttle position and finally applying the brakes. I shifted the directional lever to forward and off we went retracing our steps. Back at dysfunction junction my friend Chris took the controls and successfully navigated the train yard. You should have seen the smile on his face! We took four more trips around the yard and were comfortable with our locomotive prowess at the end of the hour. What fun it was to operate a locomotive! It brings a smile to my face as I write this article.

Phil operating the Western Pacific #917-D EMD F-7 diesel at the Western Pacific Railroad Museum.



Cab interior of EMD WP FP-7 built in the early 1950s.



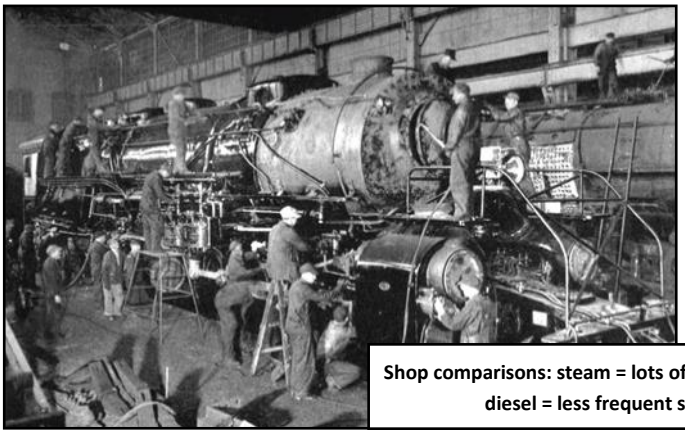
Famous Keddie Wye near Portola and the WPRM with UP train.

Manifest

Diesel's Advantages Over Steam

By: William R. Sandberg, Ph.D.
Associate Professor of Management
Darla Moore School of Business
University of South Carolina
Frontiers of Entrepreneurship Research;
from the proceedings of the Babson College
2002 Entrepreneurship Research Conference.

Diesel engines slowly eclipsed those powered by steam as the manufacturing and operational efficiencies of the former made them cheaper to own and operate. While initial costs of diesel engines were high, steam locomotives were custom-made for specific railway routes and lines and, as such, economies of scale were difficult to achieve. Though more complex to produce with exacting manufacturing tolerances, $\frac{1}{10000}$-inch for diesel, compared with $\frac{1}{100}$-inch for steam, diesel locomotive parts were more conducive to mass production. While the steam engine manufacturer Baldwin offered almost five hundred steam models in its heyday, EMD offered fewer than ten diesel varieties.



Shop comparisons: steam = lots of manpower, frequent maintenance; diesel = less frequent service by fewer persons.

Diesel locomotives offer significant operating advantages over steam locomotives. They can safely be operated by one person, making them ideal for switching/shunting duties in yards (although for safety reasons many main-line diesel locomotives continue to have 2-man crews: an engineer and a conductor/switchman) and the operating environment is much more attractive, being much quieter, fully weatherproof and without the dirt and heat that is an inevitable part of operating a steam locomotive. Diesel locomotives can be worked in multiple with a single crew controlling multiple locomotives throughout a single train—something not practical with steam locomotives. This brought greater efficiencies to the operator, as individual locomotives could be relatively low-powered for use as a single unit on light duties but marshaled together to provide the power needed on a heavy train still under the control of a single crew. With steam traction a single very powerful and expensive locomotive was required for the heaviest trains or the operator resorted to double heading with multiple locomotives and crews, a method which was also expensive and brought with it its own operating difficulties.

Diesel engines can be started and stopped almost instantly, meaning that a diesel locomotive has the potential to incur no costs when not being used. However, it is still the practice of large North American railroads to use straight water as a coolant in diesel engines instead of coolants that incorporate anti-freezing properties; this results in diesel locomotives being left idling when parked in cold climates instead of being completely shut down. Still, a diesel engine can be left idling unattended for hours or even days, especially since practically every diesel engine used in locomotives has systems that automatically shut the engine down if problems such as a loss of oil pressure or coolant loss occur. In recent years, automatic start/stop systems such as SmartStart have been adopted, which monitor coolant and engine temperatures. When these temperatures show that the unit is close to having its coolant freeze, the system restarts the

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Rare Mileage

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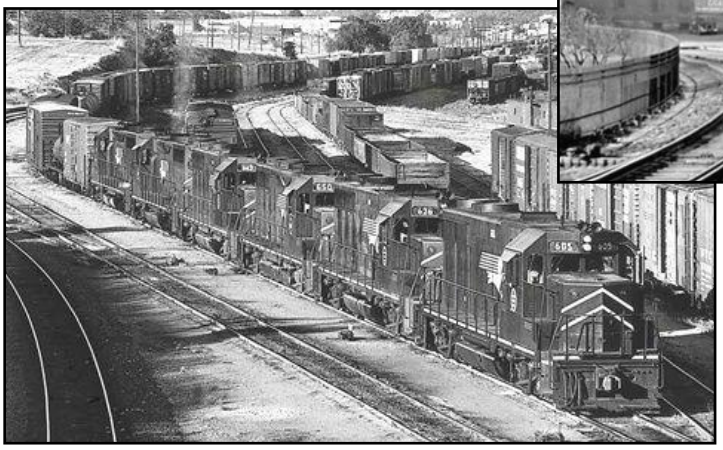
diesel engine to warm the coolant and other systems.

Steam locomotives, by comparison, require intensive maintenance, lubrication, and cleaning before, during, and after use. Preparing and firing a steam locomotive for use from cold can take many hours, although it may be kept in readiness between uses with a small fire to maintain a slight heat in the boiler, but this requires regular stoking and frequent attention to maintain the level of water in the boiler. This may be necessary to prevent the water in the boiler freezing in cold climates, so long as the water supply itself is not frozen.

Moreover, maintenance and operational costs of steam locomotives were much higher than diesel counterparts even though it took diesel locomotives almost 50 years to reach the same power output that steam locomotives could achieve at their technological height. Annual maintenance costs for steam locomotives accounted for 25% of the initial purchase price. Spare parts were cast from wooden masters for specific locomotives. The sheer number of unique steam locomotives meant that there was no feasible way for spare-part inventories to be maintained.[36] With diesel locomotives spare parts could be mass-produced and held in stock ready for use and many parts and sub-assemblies could be standardized across an operator's fleet using different models of locomotive from the same builder. Parts could be interchanged between diesel locomotives of the same or similar design, reducing down-time; for example, a locomotive's faulty prime mover may be removed and quickly replaced with another spare unit, allowing the locomotive to return to service whilst the original prime mover is repaired and which can in turn be held in reserve to be fitted to another locomotive. Repair or overhaul of the main workings of a steam locomotive required the locomotive to be out of service for as long as it took for the work to be carried out in full.



Multiple locomotives of steam required a crew for each locomotive while the multi-unit diesel locomotives can be run by one crew no mater the number needed to pull the train.

Steam engines also required large quantities of coal and water, which were expensive variable operating costs. Further, the thermal efficiency of steam was considerably less than that of diesel engines. Diesel's theoretical studies demonstrated potential thermal efficiencies for a compression ignition engine of 36%, compared with 6–10% for steam, and an 1897 one-cylinder prototype operated at a remarkable 26% efficiency.

However, one study published in 1959 suggested that many of the comparisons between diesel and steam locomotives were made unfairly mostly because diesels were newer. After painstaking analysis of financial records and technological progress, the author found that if research had continued for steam technology instead of diesel technology, there would be negligible financial benefit in converting to diesel locomotion.

By the mid-1960s, diesel locomotives had effectively replaced steam locomotives where electric traction was not in use. Attempts to develop advanced steam technology continue into the 21st Century but have not made a significant impact.

Marker Lights

The Black Beetle

The M-497, nicknamed "Black Beetle" by the press, was an experimental jet-powered locomotive test bed of the New York Central Railroad (NYC) corporation, developed and tested in 1966 in the United States. Two second-hand General Electric J47-19 jet engines (designed as boosters for the Convair B-36 Peacemaker intercontinental bomber) were mounted atop an existing Budd Rail Diesel Car (an RDC-3, part coach, part baggage and mail configuration) body which had received a streamlined front cowling.

The construct was then successfully sent on test runs over the existing tracks between Butler, Indiana, and Stryker, Ohio. (The line was chosen for its arrow-straight layout and good condition, but otherwise unmodified track.) On July 23, 1966, the car reached a speed of 183.68 mph, an American rail speed record that still stands today.

Even with this spectacular performance (and even though it had been built relatively cheaply, using existing parts), the project was not considered viable commercially. The railroad gathered valuable test data regarding the stresses of high-speed rail travel on conventional equipment and tracks then existing in America. The data was largely ignored, as the NYC was headed for merger with its arch rival Pennsylvania Railroad. The PRR was already heavily involved in the Metroliner project, funded by the United States Department of Transportation.

M-497 continued to serve for Penn Central after jet engine removal and was retired by Conrail in 1977. Engines were re-used as X29493, an experimental snow blower. Like most similar jet engine blowers, it was effective at clearing snow and ice but also tended to dislodge the ballast.

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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