TRACK INSPECTION AND MAINTENANCE VEHICLES

AT THE OKLAHOMA RAILWAY MUSEUM

The inspection and maintenance of rail trackage is critical to the safe operation of all railroads. A broken rail or washout of supporting ballast can result in injury or death to rail crews and passengers—to say nothing of damage to locomotives and rolling stock. In fact, rail inspections are federally mandated. Even at the Oklahoma Railway Museum, with less than four miles of track, maintenance is on-going, and inspections are conducted before every passenger-carrying session.

On Foot

In earliest days, and even today, track inspection was conducted by railroad employees walking the rails. Close visual inspections were and are able to detect any number of flaws in the tracks as well as problems with ties and supporting ballast. In order to see the rail web under the rail head, inspectors sometimes used a mirror, mounted on a small trolley pushed by hand along the top of the rail. Maintenance crews (section** crews) also walked the rails if damaged areas were located nearby. Sometimes, tools, replacement parts (spikes, tie plates, etc.) were moved by wagon to the worksite. While this process worked well for trackage located near depots and section houses, it was impractical for far away locations. However, section crews were sometimes known to hitch a ride on a passing train.

Velocipedes

One of the first rail inspection vehicles to be developed was the three-wheel velocipede, popular at the end of the 19th and beginning of the 20th centuries. Looking something like a two-wheel bicycle with an outrigger, it was propelled by a seated driver who moved the “handlebars” forward and backward while at the same time pushing the foot pads. The velocipede had a hand brake which rubbed on the rear wheel. Usually weighing less than two hundred pounds, it could be manhandled off the tracks in the event of an approaching train. The velocipede increased the range for track inspectors, but it suffered two disadvantages. First, it carried only one person and very limited supplies. Second, there was nothing to balance the single rear wheel which could easily slip off the track—leading to a sudden and often painful stop.

Handcar

Both disadvantages of the velocipede were overcome with the four-wheel handcar. Four wheels prevented slipping off the track, and the much larger base could accommodate four people as well as tools and limited supplies. The handcar could carry an inspector and three crew or four track section men to the worksite. It was propelled by the four alternately pushing down and pulling up on the lever handles. Moving the pump car could be hard work, especially traveling up a grade. Hence, alternate names for this vehicle include: back breaker, pump car, and lever car. Weighing in at between 500 and 800 pounds, the hand car could still be moved off the track by several strong workers when there was an oncoming train. A foot brake was used to stop the vehicle or to slow it on down grades.

Motorized Section Car

As previously mentioned, operating a handcar was hard work. Section crews could therefore arrive at the work site exhausted from pumping. Thus, the size of railroad sections was historically limited by muscle strength and endurance. Enter the internal combustion engine. A small gasoline-fueled engine was mounted along the centerline of the car. A housing over the engine provided seating for the crew. When used by track inspectors, forward-facing seats were normally installed. A radiator and lights were mounted on the front of the car. To protect riders, front windows and a canopy or roof were common. In cold-weather environments, the cab was frequently enclosed. Alternate names for the motorized section car include speeder, gas buggy, pop car and put-put. Velocipedes, handcars and motorized section cars were usually stored in handcar sheds set at right angles to the track, often near larger maintenance facilities. Today, a large number of rail enthusiasts own their own cars, and group outings are not uncommon.

Trailers

Due to the limited space on handcars and section cars, trailers were often utilized to carry tools, equipment, supplies and even sand and ballast. A simple coupler connected the trailer to its towing vehicle.

Rail Cars and Trucks

Although no examples presently are found at the Museum, there is another category of inspection/maintenance vehicle which deserves mention. This category includes automobiles and trucks converted to operate on railroad tracks. Road wheels were removed and replaced with flanged railroad wheels which allowed these vehicles to travel on track rails. Some of the first conversions were made to Model T Fords, both sedans and convertibles.

MKT Inspection Car

Perhaps the ultimate in inspection cars was the one designed and built in the maintenance shops of the Missouri-Kansas-Texas Railroad. The car shops in Denison, Texas, fabricated this one-of-a-kind inspection car based on an old 40' all-steel boxcar. The somewhat strange-looking MKT No. 1045 entered service in 1973. A large work area was installed in one end of the old boxcar. Large picture windows were cut into the end and sides providing good visibility for the inspectors. At the opposite end of the car, a generator was installed to provide power for lights, radio-telephone, and air conditioners. In the center of the car, entryways were installed on both sides. Crew facilities were added including a restroom, a small galley, and bunks for cat-naps. When the MKT was acquired by the Union Pacific Railroad in 1988, a different operational philosophy was instituted, and the car was deemed expendable.

Hi-Rail Truck

The most current inspection/maintenance vehicle at the Museum is a Chevrolet hi-rail truck, a vehicle which can operate on both conventional roads and rail tracks. It was converted from a standard truck, keeping its rubber tires but then fitted with flanged rail wheels. After driving to a work site on normal roads, the flanged wheels are lowered. Once on the tracks, the truck is propelled by the rubber tires rolling on the track tops, while the free-rolling flanged wheels guide the vehicle. At the end of an inspection or work period, the flanged wheels are raised and the truck returns to normal roads. This is the vehicle used by the Museum to inspect the tracks before each passenger-carrying session.

** A section is a portion of a railway line designated for maintenance or signaling.