

Bowser derailment: a case report

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In my profession of medicine, we typically gather the facts of a case, formulate a differential diagnosis, which is a list of possibilities in rank order of likelihood, then undertake whatever investigations are needed to arrive at a correct diagnosis, which in turn points us to a treatment plan. With my interest in traction modeling problem solving, the same diagnostic method can be applied to fixing a significant but easily remedied problem with a Bowser drive in an HO car.

Case summary:

The car is a Fairfield Models HO model of a San Francisco Torpedo car, one of 10 double-ended PCC's that were acquired by San Francisco Municipal Railways in 1949. The car was purchased around 1989 from Ed Skuchas, was painted and lettered by East Penn member Norman Houser around 1992, and when my layout became operational in 1997, was one of my first cars. The initial drive was replaced by East Penn member Jack Spedden in 1999, before I learned how to do the conversions. Jack installed a Bowser PCC drive with an A-Line flywheel, and after resolving some overhead pole tracking issues, it ran beautifully for 23 years. Recently, the car began derailing in odd ways. The rear truck would derail and then pull the front truck off the rails. It also demonstrated herky-jerky, stuttering type running. Diagnostics studies were undertaken.

Strategy:

With a derailment problem, first check wheel gauge, which on cursory examination was normal. The next is to determine if the trucks turn freely, which they did. Next to be certain that all the wheels on the power truck turned when power was applied, which they did. The next thing to check is if all the wheels on the trailing truck turned and the rear axle of the truck indeed did not turn, either with the car or the tracks, or turning them with a finger. Next step is to remove the snap-on plate that holds the wheels and axles into the truck assembly. This revealed the problem.

Solution

When the wheels and axles were removed, the first thing noticed was that one of the stub axles was no longer snugly held in the space sleeve that holds the wheel and axle set. A close look under magnification revealed that there was radial split in the sleeve, which made the wheel loose and unstable in the sleeve and easily out of gauge. Why the wheels don't turn when the plate is in place is uncertain. It might relate to the bulge created where the sleeve is split. When the errant sleeve was replaced, the problem was solved, and smooth operation restored.

Discussion:

HO traction modelers have been using the Bowser drives for around 24 years. Since its introduction, the drive has been a game changer. It is affordable, easy to install and if necessary, repair. For many of us, it is the default selection for powering models. Nonetheless, with time and operation, parts wear out. This is not due to any design flaw, but simple wear and tear. Those of us who use the Bowser drive, especially for any length of time, should maintain a stash of replacement parts, the most common of which are the sleeves for the stub axles. They are cheap, and the removal of the defective one and insertion of the stub axles into the sleeves takes less than 3 minutes, including the five second task of

verifying the gauge. And if it is suspected as a cause for the problem, it cannot be ignored. And since the replacements are so cheap, attempting to repair a split one is a fool's errand. Also recommended is keeping a few of the sleeves with the gears for the drive truck, although so far, one of these has not suffered the same fate.

Final diagnosis: worn axle sleeve on trailing truck

Solution: replace the split sleeve with new one.



Figure 1. A thin piece of styrene is in the radial break in the Bowser axle sleeve. Replace the sleeve and problem solved!