Mechanical Department Report: September 8, 2022
Board of Directors Meeting: September 10, 2022
DS ELEMS – Mechanic

We've made some progress on a variety of equipment (major thanks to Roger Stabler), from the ballast tamper and ballast cars, the backhoe and telehandler, to finally being able to water up and start SP2873. While things are finally looking up on some of the more troublesome projects there are still many work items to be completed. Roger has taken the hydraulic pump for the tamper back to Woodland because it fails to make pressure at the proper RPM, the backhoe's hydraulic leaks have been pretty well fixed but we have to keep an eye on the oil leak on the left axle/torque tube, and SP2873 continues to throw new and exciting curve balls as we move through the inspections. At least QRR1100 and WP1503 have been sufficiently reliable since being placed in service.

WP1503

1503 has been performing yeoman's work, with the electrical gremlins in May being the only real problems this year. The problems with the engine protection device (EPD) at the beginning of the season petered have mostly petered out, leaving the task of rebuilding and reinstalling 1503's original EPD to the end of the year and allowing for time to be spent on other work. All the current issues are minor enough to mostly be an inconvenience and don't represent any hazards to the safety of the operators, or the locomotive. About all I've really had to do the last two months was various monthly checks and inspections, and some various testing of systems we worked on back during the annual inspection.

Overall, I expect continued operation as we've seen so far through into next spring when the next round of inspections and work comes due.

QRR1100

QRR1100 has, for the most part, performed quite well this season with only a few minor issues and the usual problems and servicing that we've come to expect. As of September 6, QRR1100 is out of service because it is due for the annual inspections and the much-needed attention that accompanies such work. If everything goes as smooth as last September we *might* be able to get 1100 out of the shop as early as September 20, but with the way things have gone with repairs on a certain other locomotive this year I'll keep that optimism on hold.

While shopped for the annual inspection there are a few things that I'd like to take care of. Most of them are sorting out the remaining electrical mysteries, with the big one being the coolant. 1100 has been our "winter" locomotive owing to running antifreeze, and this coolant has been in the system for a very long time with only occasional make-up added. While poking around for fuel suppliers for WP165 I've happened across a company that also handles disposal and recycling of bulk quantities of antifreeze; I'll be inquiring about pricing for both services tomorrow morning and should have an update by the time of the board meeting. Should the disposal/recycling service be practical, I plan to drain and flush 1100's cooling system. If drained, it is unlikely that antifreeze will be added back in when 1100 returns to service given the increasing frequency and volume of coolant that gets into the air box when the temperatures drop below 30°F.

SP2873

We finally got the cooling system buttoned back up, but not without more complications. Once the water pump was in place, we had to loosen the feed elbow to the left bank manifold and crossover in order to install the gasket between it and the pump; things didn't go as planned. In short, by the time we were done the entire elbow had to be removed, and in the process I managed to shear yet another bolt which later had to be drilled out. It was a multi-hour ordeal from the time the elbow came off to getting it ready to be reinstalled; that includes cleaning all interior and exterior surfaces, removing the stuck bolt, scraping the gasket surfaces clean and flat, and giving the elbow a thorough inspection.

Many thanks to Roger for brazing up the crack in the volute of the water pump I rebuilt, and also for welding up the flanges on the new water pump inlet fittings I had manufactured. Once the engine was watered up the new flanged pipes had some minor seepage but sealed up after a couple of days. The new water pump is leak free, however the right bank pump which was fine at the beginning of 2020 is not. I initially though that I'd left the drain cock open on the volute but it was all coming out the telltale hole for the pump seal; the leak is sufficient to keep the locomotive from service until the pump is rebuilt or replaced.

We've run the engine twice in the last few weeks, which is a major step from were we were, and the leaky water pump isn't so bad as to keep us from performing the running inspections as we move forward though it does leave quite a mess in the shop. So far, the top deck inspections for the annual inspection packet have been completed as have some testing and verification of various systems while the engine was running, and we were able to trace down some of the troublesome oil leaks from the past several years, some of which have gotten worse as the old failing seals dried up over the last couple of years. The worst of these is the drain tubes in the bottom of the overspeed trip housing, as evidenced by the oil flowing down the front of the engine block. I'd prefer to deal with this before placing the locomotive in service. I'm currently trying to find the proper part number for the gasket kit so I can get a price quote.

In the meantime, while I wait for yet more price quotes and part deliveries I'll continue plodding along, working on the myriad of items that need to be addressed. The scope of what still needs to be done seems rather daunting, particularly with the number of surprises that have cropped up, but is lessened when looking at the work that has been completed thus far.

If one looks through 2873 they will notice lots of new sage green (satin moss) paint; this isn't merely a cosmetic beatification or "repairing with paint" but represents about a third of the work that has gone on these last two years. Everything with green paint has been cleaned and inspected (often requiring testing), serviced, replaced, or otherwise underwent some sort of major work and most items required removal from the locomotive. These components range from the airbrakes to the oil and cooling systems. I'll submit the list of supplemental work items with this report to give an idea of what is yet to come, and to hopefully give an idea of why 2873's return to service keeps getting pushed back.

Other Items

The new east end shop doors continue the pay themselves back. Being able to open up the door on east 1-rail again, let alone 2-rail for the first time since probably the 70's, has made these hot summer days a little more pleasant with the breeze through the shop. Additionally, I managed to snap one of the chains off the upper north windows and get it installed on the south west windows with the help of Logan Beers, and we can now open almost all the windows on the south wall now. The door work also spurred a renewed interest in cleaning out the south east of the shop.

In addition to the locomotives and the shop, a lot of attention has been payed to a variety of equipment with a huge shout out to Roger Stabler. Other than some tweaking to the bend of couple of blades and the issue with the hydraulic pump at certain RPM's, the ballast tamper has been gone through and seems to be working quite well. Roger and I worked on ballast car WPMW10760, which now has a serviced handbrake, a fourth (and final) operable door and a repaired trainline. The many leaks on the backhoe, both new and old, have been mostly repaired; there are some hydraulic lines that will come due sooner than later and the issue with the seal between the gearbox and torque tube that remains.

We purchased last month a fork mounted bucket for the telehandler. The primary reason was to facilitate the loading of our ballast cars, but will be useful for snow removal (relocation) in the winter as well as any other use we may have for a 2.5-yard bucket; loading trash in the dumpster perhaps? As for loading the ballast cars, I was able to completely load our SPMW hopper in three hours and that includes a forty-five minute break in the middle of loading.