On Track

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If you are receiving this newsletter for the first time, welcome to the fold! We are cataloging our visitor logs for the last few years, and your name and email appeared! If you wish to be taken off our list, just let us know, but we hope that you will stay with us, follow us online, and return as a visitor sometime soon. Previous editions of this newsletter may be found on our website. If you have comments on the newsletter, please send them to nmheritagerail@nmheritagerail.com or to your humble editor, John Taylor.

We are looking for members to fill the Secretary or the Treasurer positions, so please help your organization by putting your skills and abilities to work. Just contact us and tell us how you want to help!

Current Status: We added 3,000 gallons of reclaimed and filtered motor oil to the fuel tank and are on schedule for our second run to Tractor Brewing on August 26! (Check out the event flier on our website.) Work on the turntable, which dates to 1914 as you can see from the builder's plate, continues at a slow but steady pace as preparations are being made to remove the ties from the bridge deck. Speaking of the builder's plate, after we finish completely cleaning the decades of paint and gunk out of their nooks and crannies, we are thinking of creating a mold and sand-casting them in aluminum. The turntable crew removed the last few rails from the deck in the last couple of work sessions. We are working to suspend a 16-ft x 10-ft banner, which has our logo and website address, across the superstructure of the turntable (below). This will help promote our efforts by letting people know that something is happening at the Rail Yards because the superstructure can be seen from a heavily travelled nearby thoroughfare.

Accomplishments: We mounted a 4-ft x 8-ft sign at the far SW corner of the machine shop in the Rail Yards to let people know that NMHR volunteers are working on the turntable. We continue to work the punch-list items identified from the first steam up to Tractor in preparation for the second run. We lapped the throttle valves and then reassembled all the throttle body. We also modified the injector line into the steam turret to correct a few leaky union joints. We are looking to work with the County of Bernalillo and, to become an "approved vendor," we had to submit a proposal in response to their new Request for Proposal (RFP) process. All the required documents were collected and/or developed, and the RFP package was submitted on July 31st. Now we wait to hear if Bernalillo County approves our proposal to work through them for our future efforts.

Profile of a member: The 2926 restoration project has had marvelous good fortune in terms of the skill sets of individuals who have volunteered to join our illustrious work force. In addition to your humble editor with skill sets that include sweeping, fetching tools, and taking trash to the dump, we have boiler-certified welders, pipefitters with decades of steam boiler experience, professional engineers, tool designers, PhD material scientists, and even a minister to help with our spiritual well-being! But one of our most valued volunteers is our brake specialist, Paul Baynes.

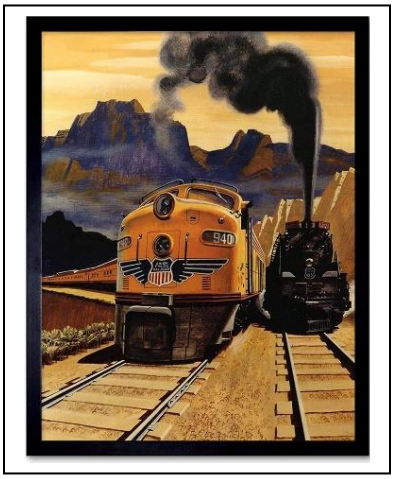
Paul comes to us with nearly 35 years as a diesel-locomotive mechanic, including brake system maintenance, troubleshooting, and installation experience. What's more, almost all his experience has been on 26L brake systems, the very system that we installed on the 2926 when we were directed to replace the Type 8 system that dated back to the early 1940s.

Paul is an Ohio preacher's kid, born in the farming town of Swanton, a suburb of Toledo. He attended Vermillion High School (I'll bet you can guess what their school colors were!), home of the Sailors. Since his father was a minister, Paul went to the Christian and Missionary Alliance Bible College in St. Paul, Minnesota, with the idea of following in his father's footsteps. He graduated with a double major in History and Bible, so consultation on various New Testament questions is fair game! Paul said that although he greatly enjoyed the students and professors and studying Bible and history, he found that religious work was not really for him, and he was much more interested in mechanical work.

At that point, he answered an ad and hired on with the Great Northern Railroad as an apprentice locomotive machinist, starting his 35-year career. Rising quickly through the ranks, he eventually became one of Burlington Northern Santa Fe Railway's locomotive inspectors. In that role, he reported to the Federal Railroad Administration (FRA) and eventually assumed the position of air brake specialist. These were positions he held for nearly 15 years before retiring in 2004.

Paul met his lovely wife, Marcia, in St. Paul after college when they were Christmas caroling with friends. (Marcia is also an NHSL&RHS member and who can frequently be found manning our restoration-site store.) They have been married for 51 years this month and have one daughter and a grandson, who live here in Albuquerque. They moved to Española in 2008 to be nearer their daughter and grandson and so that they could do volunteer work at the Methodist Mission School there. Eventually, the commute to Albuquerque took its toll, and they moved to Rio Rancho.

Paul was “introduced” to the 2926 in 2015 through the good offices of Gordie Miller, and he has been our brake system installer and brake mechanic since then. He and Marcia are active in the Evangelical Free Church in Rio Rancho, and when he is not looking lovingly at the piping and components under the cab, you can find him staring at the heavens through one of his two telescopes, canoeing and fishing at Pagosa, or just spending quality time with his daughter and grandson.



A short historical note: We here at the 2926 are all about steam. In fact, when we take pictures for our visitors, we tell them to say “steam” instead of “cheese!” So, why did these wonderful examples of engineering and power disappear in the middle of the 20th century? Could it have been environmental concerns? Not likely—although air pollution in European cities can be traced to the middle of the 19th century and New York City restricted steam locomotives in the late 19th century. Could it have been a fuel crisis? Also unlikely, coal and oil were as abundant then as they are now. So why did diesels push our beloved steam engines out of the picture?

There are several reasons, but it mostly came down to reliability, efficiency, and ease of maintenance. While steam locomotives require several hours to start, a diesel is essentially “turn the key and you’re on your way.” In addition, even though steam locomotives could be much more powerful than diesels, diesels could be ganged together both forwards and backwards and operated as multiple units to achieve tailored power requirements much more easily than double or triple-heading steam engines. steam engines **really** prefer going forward. Steam engines also required considerably more TLC than diesels. requiring a much larger maintenance crew.

Almost everywhere, but especially here in the Southwest, water was another big issue. At 60 mph, the 2926 evaporates 100 gallons of water per minute, and this was typical of mainline locomotives. This meant that there had to be water stops every 20 to 30 miles along the main line, each of which had to be maintained and refilled. In fact, it has been estimated that one in ten trains along the main line carried water for water stops in the 1920s. These represented significant operational costs to the railroads.

One approach to solving this cost issue was to build very large tenders, such as the one associated with the 2926, to increase the range of steam locomotives. Another approach was to switch to diesels since they use almost no water. The latter was the choice that was made, and by the 1950s, diesels had almost completely supplanted steam locomotives.

How does it work: Most of us have not been lucky enough to watch a steam-up from start to finish. This month, we’ll outline the entire process. In the old days, steam-ups frequently consisted of simply relighting a fire that had been shut down after the previous day’s operations. Steam-ups from a fully shutdown and dry condition were relatively infrequent and normally occurred in a shop or roundhouse setting where auxiliary steam was available from either an adjacent locomotive or from a stand-alone steam generator. We do not possess either of those luxuries, so our process takes quite a bit longer and is somewhat more complex. Because our process is more challenging and because we are not professional hostlers, we work from a detailed steam-up plan that begins with safety briefings and work assignments

and includes a thorough lubrication check list for the plethora of moving parts on the engine and a valve lineup for the nearly 200 valves on the engine and tender.

Initially, we fill the boiler to the bottom of the sight glass, about 6,000 gallons, check the boiler chemistry, and confirm that the tender contains at least 3,000 gallons. The next step is to hook up a high-volume air system to the buddy steam connection on the engineer's side of the 2926. This air takes the place of superheated steam for two key functions—the blower that establishes draft for the fire and the atomizer that breaks the fuel flow into small droplets to improve the overall combustion process. Once air is flowing, the fuel flow is initiated from the cab, and the fireman throws a kerosene-soaked rag or wad of cotton-thread waste into the firebox to start the fire (a bit of skill and practice is required to get it in the right place for a successful light!). Now we monitor the various gauges and wait.

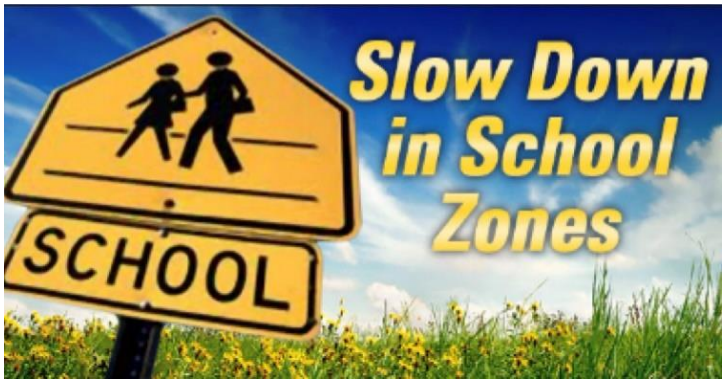
We control the heat-up rate to about 50°F per minute to minimize thermal stress on the boiler components. When boiling begins, as indicated by steam coming out of the boiler vent valve, the vent is shut, and the pressure begins to build. We then control the pressurization rate to between 2 and 4 psig (pounds-per-square-inch on the pressure gauges) per minute, also to minimize stresses on the boiler's components. When the pressure finally reaches between 50 and 70 psig we shut down the external air compressor and shift the atomizer and blower to steam operation. When the boiler pressure reaches about 150 psig, we start the injector to make sure that we can feed water to the boiler. At this pressure we can also confirm the operation of the dynamos and the air compressors.

Each time we steam up we are required (per the FRA) to verify that, for safety reasons, the pressure relief valves operate as required. Therefore, we continue the boiler pressurization to the lowest relief valve setting, 290 psig, "popping" the relief valve, which confirms that the valve opened, and then reseats. You DO NOT want to be anywhere near the valve without ear protection when it pops– it is LOUD!

By this time, the boiler pressure is stable at just under 300 psig with a temperature of about 420 °F. In addition, the heat has caused metal expansion, so the boiler is now between 1 ½ and 2 inches longer than it was when we started. Now that the pressure relief valve check is complete, we are ready to perform the final pre-movement checks and head out on the road!

What's new in the store: CALLING ALL ARTISTS! The NMSL&RHS restoration site store and gallery is seeking artists and artwork to help us promote our restored locomotive #2926 and surrounding local historic railroad locations. Art styles to be considered include all 2-dimensional renderings, e.g., sketch, pastel, acrylic, watercolor, photographic images and compositions, etc., and we will also consider 3-dimensional sculptural pieces. For consideration, please bring your contact information, your media, and your subject matter to Rick Marsden at the store or by email to rmarsden@nmheritagerail.com.

How you can help and other tidbits: If you are interested in donating to our cause (because operating a steam locomotive takes money!), go to our website and make a donation through Paypal and/or click on our GoFundMe and Venmo links! Be sure to check out our Facebook, Youtube, and Instagram pages as well! Other potential sites of interest: our friends at the Wheels Museum and activities at the Albuquerque Railyards. The Board of Directors is soliciting a volunteer to act as a Webmaster for the organization. This person would need to be a member but could work remotely. Tasks would include maintaining the website, adding photos and photo captions, and adding other materials as needed (e.g., newsletters, advertisements for the store, etc.). If you are interested, please contact John Roberts or Gail Kirby. Please see our Membership page to discover our other volunteer opportunities.



School is back in session, so drive carefully and watch for steam engines!