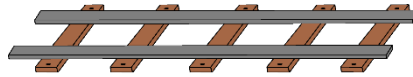


On Track



Vol. 3, Number 12, December 2024

If you are receiving this newsletter for the first time, welcome to the fold! We continue to catalog our visitor logs (some from several years past!), and your 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. **Additional financial support will never be turned down (maintaining and operating a steam locomotive is expensive)!** 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](#).

FROM THE PRESIDENT:

We still need your support to help us accomplish some of the goals we have for the restoration site and the South Rail Yards. As I mentioned in last month's newsletter, we have a critical need to fund some specific projects. An inexhaustive list of projects and costs include:



- PTC hardware \$20,000!
- New driver brake shoes \$10,000
- Concrete work at the Rail Yards \$5000 for public safety
- Metal shipping container (i.e., a conex) \$6000 for on-site storage
- Dumpster service \$2400/year
- New driver brake shoes \$10,000
- ADA concrete work at the restoration site \$2000

We have a brand-new expense at the restoration site: we blew a head gasket on our workhorse Quincy air compressor 😞. That new repair expense has been quoted at just under \$2000. Please donate any amount that you can as every single dollar helps. You can donate through our usual channels and keep an eye out for specific fundraising announcements.

Capital Outlay Corner: NMHR is in the early stages of requesting additional Legislative Capital Outlay funds from the state of New Mexico. We have submitted our agreement to be our fiscal agent form to the city of Albuquerque and will be submitting our capital outlay request to the legislature soon. The funds that we are requesting are slated for replacing another track leading into the turntable and inspecting and assessing the condition of a couple of the small, stand-alone buildings for future use (i.e., the automotive shop and the washroom).

Our dedicated support car team is making good progress connecting the Stadco Genset. The genset was started and operated, so that was a great beginning but there is a communication issue that we must solve with help from the provider. Northwest Rail generously loaned us a manually operated hydraulic crimping tool and so far, a total of 24 terminal lugs have been crimped on the 480V wiring. There are a lot more crimps to make;

48 more at last count. Progress has been slowed because the tool's seals have failed twice. We are becoming good friends with the folks over at Hose and Hydraulics. They made a quick fix the first time, but the tool will require a rebuild kit this time around.

We successfully completed the hydrostatic test on the boiler for our five-year inspection. Now that that is finished, we have a long list of maintenance and refurbishing to do now that 2926's season has come to an end. After that is a laundry list of things to do:

- Rebuild the fireman's side air compressor (we just started on this one)
- Remove the main boiler inlet check valve assembly and remachine the sealing surfaces
- Remove and repair the leaking injector starter valve unions
- Reset the pressure relief valves
- Make a spare copper gasket for the manway
- Repair the engineer's side mud ring studs
- Finish the job board that will list the work that needs to be completed
- Replace numerous leaking unions with new ones
- Repack the crank rod on the Worthington lubricator
- Lots of valves to lap
- Finish reconfiguring and reinstalling the piping on the blowdown
- Reconfigure the terminal blow down valve connection
- Complete the adaptation of the original speedometer wheel to use with PTC (a solution that involves imbedded NIB magnets and a Hall-effect sensor)
- And many others!

There's lots for us to get done so if you haven't been around for a while for lack of work, now's your time to again lend a hand to get 2926 ready for 2025. We are starting to plan our 2025 outings schedule. If you have thoughts or ideas for things for 2926 to do, please get in touch. We are also going to schedule a clean-up day at the Rail Yards soon so keep an eye out for an announcement.

Save the Date(s): Our Annual Membership Meeting/Annual Safety Refresher/ASU Roundhouse Renderings Presentation is scheduled for 22 February at 8:00 AM. We are working to find a suitable location to host it. Our 3rd Annual New Mexico Railroad Days is planned for 26-29 September 2025 at the Rail Yards.

Profile of a member: So, there was this guy who had worked for more than 30 years with dental picks and 450,000 rpm drills, and he decides he needs a change:





Of course, that person could only be our resident (and retired) dentist, Dr. Terry Riordan!

Terry is a lifelong Albuquerquean—graduated from Del Norte in 1967 and UNM in 1974 with that most famous of all degrees, University Studies. His parents were TWA aviation folks—his mom was one of the first graduates of the TWA “hostess” (now known as flight attendants, but NOT stewardesses!) program in the class of 1935, and his father also worked for TWA, so Terry’s childhood dream was to be a pilot. However, his eyes betrayed him, so he looked for other professions.

He worked for a while as a ticket agent for TWA and Frontier and also sold Porsches and Audis, but these jobs did not satisfy him. On a visit to his older brother’s dental office, he liked what he saw (perhaps because all the neat technology reminded him of a pilot in a cockpit) and decided to go to dental school so that he could become “a caring and compassionate” dentist (his words, not mine!). He left Albuquerque for dental school at the University of Missouri/Kansas City, graduating with his DDS in 1982 and promptly returned to his Albuquerque stomping grounds.

Dr. Terry opened his first office in 1982 at the corner of Montgomery and San Pedro. However, he relocated several times in his 33-year career, moving from Montgomery Blvd. to Winrock Shopping Center, to La Mesa, and eventually back to Montgomery. Over those years he saw drill speeds go from 45,000 rpm to 450,000 rpm and saw hygiene requirements come to require everyone to wear gloves—a challenge at first when working with the small tools he was used to.

Because he always flew for free, he had little or no interest in trains as a child, but he was always interested in cars, working on them with his brothers as he grew up. He still enjoys fixing cars and playing with his two grandchildren.

Terry was riding his bicycle along 8th street one sunny day in 2018 and noticed a steam locomotive. He came through the gate and encountered Dr. Mike Hartshorn. He asked, “Do they let people volunteer here?” That question doomed him to good times on Wednesdays and Saturdays for the rest of his natural life! Since that auspicious day, he has helped with the cylinder head reinstall, climbed in and out of the tender, and worked on forklift repairs.

So, if he wanders by and looks at your mouth in a strange, longing way, make sure that he isn’t carrying one of our drills in his other hand!



A short historical note: Famed New Mexico railroad historian Vern Glover has graced us with tales of several lost Santa Fe locomotives. Let's begin with the Hinkley 4-4-0, ATSF number 196. On June 16, 1885, Engineer Charlie Wing and Fireman Ed Worle were driving #196 south between Fort Selden and Doña Ana in southern New Mexico. Rounding a curve, they were faced with the Rio Grande river in full flood stage. Unable to stop, #196 ploughed into the water and began to sink. All the crew escaped unharmed, but the venerable locomotive disappeared beneath the waves, eventually sinking into the waterlogged sand.



After the river had receded (it actually changed its course), workers probing with long iron rods located the locomotive buried 25-feet deep near one of the new shorelines. Despite locating their property, the

tight-fisted AT&SF management decided that the cost of salvaging #196 would exceed its estimated value (\$7,600).

In 1886 management reconsidered, and after two arduous months, the beast once again sat on rails in the sunlight. Much to everyone's amazement, #196 was hardly damaged! In fact, a layer of thick yellow slime had protected most of her paint job. After a year or so of cleanup, #196 was put back in service.

Now comes a series of strange twists. A sister locomotive, #194, had been involved in a series of catastrophic accidents, including accidents that had killed seven engineers since 1881. In fact, it had been declared "hoodooed." So, in 1885, after #196 had been declared lost and #194 had been repaired after its latest accident, they renumbered #194 as #196. But now they had a recovered #196—what to do? Well, the cleaned up #196 was given a new number—#361. But there was a brand-new locomotive coming off the line in Hinkley's shops assigned the number 361—what to do? Well, the new locomotive was initially numbered #194, but that number didn't hold for long. The new locomotive was given back its original number (#361) and the old #196 was given the #194.

When all the dust settled, AT&SF had the following locomotives in service:

--A hoodooed #194 renumbered #196

--The recovered #196, renumbered #361, and then renumbered again as #194

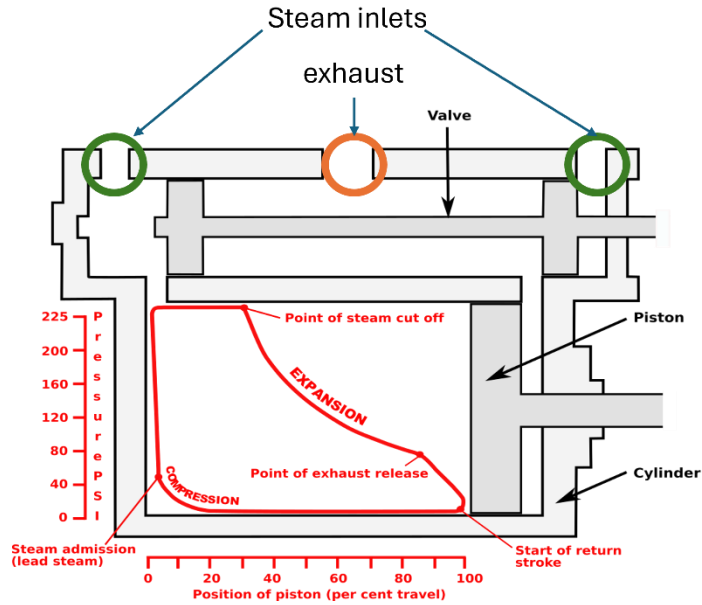
--A brand new locomotive, initially numbered #361, renumbered #194, then renumbered again as #361.

There will be a quiz in the morning!

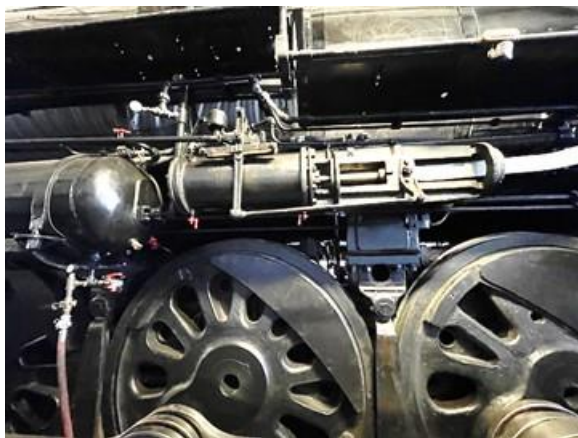
How does it work: A critical concept in the operation of a steam locomotive is cutoff. This refers to the position of the valve that admits steam to the cylinder. The basic principle involves the choice between applying direct steam pressure from the boiler to the piston or allowing the steam to utilize its internal energy to expand against the piston. Using the power reverser, the engineer can "cut off" admission of steam into the cylinder by closing the steam inlet at any point during the piston stroke.

If you have a long cutoff (e.g., 60% to 85% of the piston stroke), steam is admitted for a longer period and applies direct boiler pressure to the piston. This mode is useful for startup, especially with heavy loads, because the higher pressure is applied throughout a larger fraction of the piston stroke. This higher cutoff is particularly useful because it can keep the wheels from spinning. However, it minimizes the use of the internal energy of the steam which we have gone to great lengths to produce by providing superheat, etc. While it might seem that the engineer should keep the steam inlet open for the entire stroke of the piston (i.e., 100% cutoff), this would result in the piston slamming into the far end of the cylinder and could result in damage to both the cylinder and the piston.

An interesting fact is that the distinctive "chug-chug-chug" of locomotives starting up is the exhausting of unused, full pressure steam from the cylinder due to the longer cutoff setting.



On the other hand, once the locomotive has overcome the higher forces associated with startup, the steam inlet can be closed (i.e., cut off) much sooner (e.g., 15% to 30% of piston stroke). This allows the steam to expand utilizing its internal energy to push the piston. This is a much more efficient use of the steam and, therefore, a much more economic operation of the steam engine. This shorter cutoff is illustrated in the diagram above which shows steam being admitted from the inlet on the left for the first 25% of the piston stroke at which point the valve moves to the left, closing the left-hand steam inlet and opening the right-hand opening to allow the expended steam on the other side of the piston to exhaust. Near the end of the piston stroke, the right-hand inlet is opened allowing steam pressure to reverse the movement of the piston in accordance with the cutoff setpoint.



The valve position that sets the cutoff is controlled by the power reverser (upper left), an air-operated (or steam in emergencies only) device that not only selects which direction the locomotive is going but also sets the valve position for cutoff. The power reverser lever, also called the Johnson bar, is a vertical lever with a series of notches that is located outboard of the engineer's seat (upper right). By selecting one of the various notched locations on the lever, the engineer controls the Walschaerts valve gear to achieve the desired cutoff.

Attention ham hobbyists (hamsters??) of the radio, not porcine, variety: NMHR has an FCC-licensed club radio station which is online in the newly refurbished support car. Any hams that are

members (or non-members) of NMHR are welcome to join our club station. Please provide your name, call sign, and contact information to Jon Spargo at kc5ntw@sdcc.org.



How you can help and other tidbits: If you are interested in donating to our cause (because operating a steam locomotive is expensive!) go to 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](#). Please see our Membership page to discover our other volunteer opportunities.

Merry Christmas, Happy Hanukkah, Happy Kwanza, Happy Festivus!

