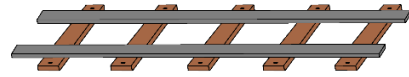


On Track



Vol. 3, Number 6, June 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:

The NMHR board is actively working to develop a strategic plan to help guide our path for the next handful of years. It looks to guide our activities related to our future goals, activities in and improvements around the restoration site, Albuquerque South Rail Yards, locomotive maintenance, events, etc., etc. Part of the plan works to address our need for (new or existing) volunteers to work a wide variety of jobs that we require now that we travel on the rails for our public events and to keep our restoration site running smoothly. It also addresses the increasing costs of our operations on the rails. We are looking to you, our active and supporting members, to help us reach these goals.



Oh, and for all you members out there who participate in the monthly membership meetings, starting this month and moving forward, NMHR will now be having quarterly membership meetings. The next will be on September 14th. If you are curious about what is happening between membership meetings, please feel free to ask or become directly and actively involved with the inner workings of NMHR. We are looking for board and committee members, event planners, marketers, grant writers, docents, store associates, and many others who can help us succeed!

The track installation work, around 400 ft of 134 lb track, is complete! A big thanks to Guzman Construction for all of their hard work. We are now working with the city to have a gate installed in their south property-line fence so that 2926 can move from BNSF's Abajo Yard and onto the newly replaced track #173 going into the turntable.



We continue to work on the planning and details for our first private event of the year; the Santa Fe Railway Historical & Modeling Society's annual convention they are holding in Albuquerque at the end of this month. The SFRH&MS contracted with us for a members-only steam up and display on the new turntable lead-in track at the Rail Yards, and in conjunction with the WHEELS Museum, for an up close and personal display and tour of 2926. We are also in the early planning stages of our 2nd Annual New Mexico Railroad Days in late September, also to be held at the Rail Yards. We need lots of help from our members for this event, so please tell us you want to help, and we'll find a place for you!



We received our 2"-gauge models from R.Duck Locomotive Works and our first profit sharing check! We'll be putting the model(s) together in the near future and recording the entire process. We are also ordering some of these, and other, models from R.Duck to sell in our restoration-site store.

Capital Outlay Corner:

We continue to work with the city to start spending the \$475k of 2023 Capital Outlay funds. Okay, technically we have started as we had to tap into those funds to cover cost overruns on the turntable track installation and to pay for the locomotive access gate across track 173.

I'm sure you are getting tired of seeing this month after month, but our expenses are never-ending. So, this wouldn't be a proper newsletter if we didn't ask for your financial help supporting projects like restoration site improvements (we just moved a fence and installed a new gate), the turntable and its associated track, likely grade crossing replacement, and the upcoming PTC install. The track work was many tens of thousands and the PTC will be even more, so please consider donating to help us cover these not insignificant costs. Thank you!

Profile of a member: He's one of the unsung heroes of our restoration project—always there when there is work to be done, even though he commutes all the way from Socorro to join our band of ferroequinologists on Wednesdays and Saturdays. What's more, he is one of our premier electricians. Of course, this can be none other than Jerome Adam.

Jerome was born in 1947 in Evansville, Indiana, and attended both North High and F.J. Reitz High. He was drafted right out of high school and, after training as a communications specialist, he was sent to Korea. In the inevitable Army way, his unit did not need a communications specialist, so he became an MP! He left Korea and was assigned to Stallion Range at White Sands which brought him to Socorro where he has been ever since.

After leaving the service in 1970, Jerome worked as a maintenance technician at the county courthouse. However, he had always been interested in being an electrician, so he hired on as an apprentice at Ross Electric, one of Socorro's oldest electrical contractors, where he shortly rose to journeyman status. He moved from Ross to the old Socorro hospital in 1986 and then to the new hospital while it was still under construction, becoming their chief electrician for both installation and maintenance. He continued at the hospital until retiring in 2015.

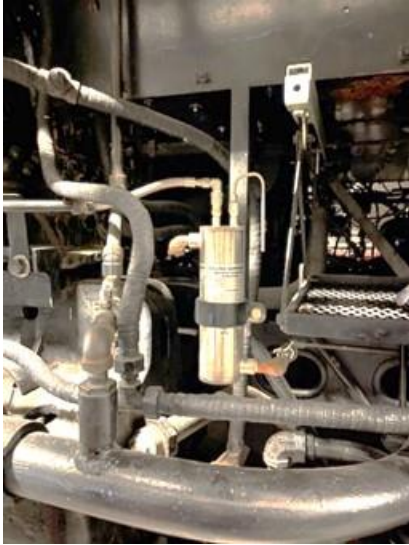
Jerome found out about our organization when he took Delilah, one of his three grandchildren (and a frequent visitor to the 2926 over the years), to a model railroad show in Socorro. There he met the ineffable Jon Spargo who introduced him not only to model railroading but also to the 2926. He has been one of our principal electricians ever since, spending countless hours working with the cab wiring and, lately, with the 480/220/110-volt systems in the support car.

Jerome has two sons, three grandchildren, and two great-grandchildren (both courtesy of Delilah). His son, Jerome Jr., works for the state, and his son, Ben, is the hospital maintenance supervisor in Socorro and, were it not for Jerome's retirement, would have been his father's boss!

So, if you have questions about the electrical additions we have made to our previously nearly "nonelectric" locomotive, look Jerome up—he has the straight skinny!



How does it work: This month we are looking at one of the critical, but less-appreciated aspects of our operations—water chemistry. In the 1940s and 1950s, there was no way to monitor the boiler chemistry when the boiler was hot. Instead, boiler chemistry was controlled by maintaining the water chemistry in the tender. We have added a boiler chemistry monitoring system which enables us to test the boiler at operating temperature and pressure. This is managed using a treatment program provided by the Cannonball Water Group, all under the watchful eye of our chief alchemist, Roger Jutte.



The main objectives of water treatment are to:

- Prevent scale from forming on the boiler tubes,
- Prevent low pH, high temperature corrosion in the boiler,
- Stop oxygen corrosion in the tender tank, feedwater lines, and the boiler, and
- Keep excessive boiler foaming from giving false water level indications and from causing carryover of boiler water into the steam.

1. Scale: Scale is generally caused by dissolved chemicals in the water becoming insoluble at the elevated temperatures and forming a hard, tight deposit on the boiler tubes, thus impairing heat transfer. The substances we use to control scale are sophisticated chemical polymers.

2. Low pH Corrosion: At elevated temperatures, the pH of water will be lower than the same water at ambient temperatures. We manage pH by adding hydroxide (OH^-) in the form of sodium hydroxide (NaOH) to the boiler to maintain a level of between 100 and 300 parts-per-million (ppm). If the OH^- concentration is too low, corrosion may result, and scale control will not be as effective. If the level is too high it can cause foaming.

3. Oxygen Corrosion: Oxygen dissolved in water will cause corrosion and pitting of steel and cast iron. As the water temperature increases, oxygen corrosion accelerates. We manage the oxygen by maintaining 30 – 60 ppm sodium sulfite (NaSO_3) which reacts with the oxygen to form sodium sulfate (NaSO_4), which is inert in the boiler water environment.

4. Boiler Foam Control: High dissolved solids, suspended solids, and high alkalinity can all cause foaming in boiler water. All three contaminants are reduced by blowdown – removing foamy water from the boiler and replacing it with fresh water. The foam meter in the cab tells the cab crew when foaming is occurring.

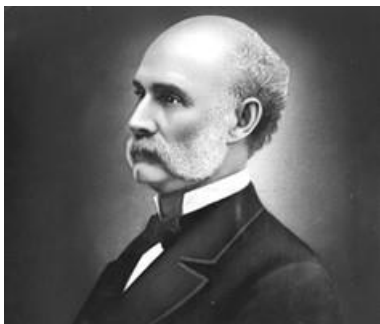
Boiler Layup: Not specifically related to water chemistry, but most corrosion damage occurs when the boiler is idle (i.e., cold). As the boiler cools, steam in the unit condenses and creates a partial vacuum, which sucks air into the boiler's empty spaces. Since boiler gaskets are designed to hold in positive pressure, they cannot adequately prevent air coming into the unit, permitting condensation on the exposed metal surfaces. Oxygen corrosion (i.e., rusting) will then occur, causing permanent damage. The best method for extended boiler protection is to layup the boiler dry and warm. We accomplish this by draining the boiler as soon as it is cool enough to work on. This allows the residual heat to assist the evaporation of the residual water and dry the boiler. Prior to draining, we add a corrosion inhibitor which coats the boiler and tubes to prevent pitting.

A short historical note: We proudly display the logo of the Atchison, Topeka, and Santa Fe (AT&SF) Railway as the historic progenitor of the 2926. We also discuss the critical role that the AT&SF played in opening New Mexico to the rest of the United States. However, while this is “correct” at a rather superficial level, we need to dig a bit deeper to understand the way that the rails came to the Land of Enchantment. This month, with the help of Dave Traudt and a detailed history of the AT&SF by Keith L. Bryant Jr., we will do that deeper dive.

AT&SF began in 1859 as the Atchison and Topeka Railroad Company under the leadership of Cyrus Holliday. By 1863, Holliday’s vision of a western railroad had increased, and the name was changed to the Atchison, Topeka, and Santa Fe Railroad.

During the 1850s and 1860s, several routes across New Mexico had been surveyed, but in late 1877, surveyor Ray Morley reported to AT&SF chief engineer Albert Alonzo Robinson, that the preferred route into New Mexico was along the old Santa Fe Trail and over the Rocky Mountains on the Raton Pass toll road owned by Richard Lacy “Uncle Dick” Wooten. This route provided access to important coal fields, abundant water, and several small towns in both southern Colorado and northeastern New Mexico. Robinson forwarded the report to general manager William Barstow Strong, who, in turn, forwarded it to Thomas Nickerson, the AT&SF president for a final decision.

Considering that the Denver and Rio Grande (D&RG) was also anxious to obtain the rights to New Mexico, Strong and New Mexico politician Miguel Otero went to Santa Fe to obtain the rights for AT&SF. Nickerson also created a construction subsidiary, the Pueblo and Arkansas Valley Railroad (P&AV), to lay rails in southeastern Colorado. In a late-night gambit, workers from the P&AV beat the D&RG to the summit of Raton Pass on March 2, 1877. In February 1878, Nickerson created a New Mexico-based subsidiary, the New Mexico and Southern Pacific Railroad Company (NM&SP), which was authorized by the territorial legislature to lay the rails into New Mexico. On December 7, 1878, the first train entered New Mexico at the summit of Raton Pass.





*The Men: (top) Holliday, Morley, Wooten, Robinson
(bottom) Strong, Nickerson, Otero*

NM&SP continued to build south, reaching Albuquerque on April 15, 1880, and San Marcial on September 16, 1880. The track gangs continued south to Rincon where another New Mexico-chartered subsidiary, the Rio Grande, Mexico, and Pacific Railroad (RGM&P) built south to Las Cruces/El Paso, and southwest to Deming. Meeting the Southern Pacific (SP) just west of Deming on March 8, 1881, dignitaries drove the silver spike, creating the second North American transcontinental railroad.

Meanwhile, AT&SF purchased half interest in the Atlantic and Pacific Railroad (A&P) from the St. Louis and San Francisco Railway (better known as the Frisco). This move allowed AT&SF access to large sections of public land controlled by the federal government. The company immediately began to lay rails west from Isleta, eventually reaching the Colorado River near Needles, California, where, in August 1883, it once again linked with the Southern Pacific.



Our tale of AT&SF subsidiaries in New Mexico is not yet complete because between 1903 and 1908, another AT&SF construction subsidiary, the Eastern Railway of New Mexico, built the Belen Cutoff, a line that crossed the Manzano Mountains through Abo Canyon permitting safer and cheaper transportation than the route over the steeper Raton Pass. To further complicate this name game, the AT&SF **Railroad** had declared bankruptcy in 1893 and was shortly sold to the AT&SF **Railway** (conveniently owned by many of the same individuals!) in 1895.

So why all the machinations and subsidiaries—why didn't the AT&SF just do it on its own? This answer comes down to four things—liability, land, permission, and money. By creating subsidiaries, the parent railroad could partially insulate itself from any of the issues that inevitably arose during construction. In addition, some states required local ownership of railroads and, as in the case of the A&P, the acquisition included right-of-way access and a land grant. In terms of the almighty dollar, the plethora of railroads provided less expensive opportunities for investors to become a part of the railroad boom.

What's new in the store: If you don't see something that you would like to see, let us know. Our online store went live on June 1.

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.



Let's Remember our Flag and our Fathers!