

# **NEW YEAR STEAM-UP AT ALTENBACH FARM**

A 2926 FAN AND HIS YOUNG CREW GIVE SOCIETY MEMBERS A CLOSE LOOK AT HIS COLLECTION OF HISTORIC STEAM POWERED EQUIPMENT

By Mike Hartshorne

It was gray and overcast at exactly noontime on January 1<sup>st</sup>, 2015 when Scotty Altenbach, pulled hearing protectors over his ears, opened a cock to clear condensation out of the manifold and started yanking levers on a bank of steam whistles. Screaming tractor whistles, a booming engine whistles, a tiny shrill brass tweeter, and others echoed around the valley south of Albuquerque as a small crowd of neighbors and guests held their ears and cheered.

A few feet from the whistles, Scotty's buddy Dan Toyama was feeding the boiler with small branches and splinters of firewood to keep 80 pounds per square inch while Scotty's grandfather kept an eye on the sight glass and his millennial steam apprentices. With the youngsters and their instructor kicking off the activity, the fun had just begun. The New Year demonstration of decades-old steam power applications continued into the afternoon.

Scotty's grandfather is J. Scott Altenbach, a retired professor from the Department of Biology at the University of New Mexico. An international authority and published author on bats, he also has a passion for steam power. His small south valley farm is populated with a variety of steam equipment from earlier days.

<u>Editor's Note:</u> Scott's passion for steam is shared by at least one former student. That would be NMSLRHS President Dr. Mike Hartshorne who took Biology 101 and 102 under Professor Altenbach forty years ago.



The source of power for most of Scott's classic equipment is a small steam assembly that he designed and had professionally built. The entire assembly, water tank, engine, and boiler are mounted on a sturdy frame with iron wheels at each corner giving it limited mobility. For extended mobility, it can be rolled onto a trailer and hauled to other locations. The steam engine's single cylinder is about the size of a small coffee can. With an array of steam pressure hoses and a belt drive, Scott, his son Chris, and their young crew can connect to and operate a wide array of historic farm and industrial equipment.

#### New Year Steam-up Continued

One of the more impressive machines is a steam hoist like those once used in mining. Scott even has a "mine shaft" 10 feet deep with a timber and iron "head" positioned over the shaft. The two cylinder steam hoist with its big cable drum is in a shed about 50 feet away. The cable spans a driveway and passes over the head frame above the "mine shaft". Attached to the end of the cable is a barrel that allows adventurous visitors to take a ride as miners did years ago.

In the shed, the operator (Scotty) works the control levers behind the cable drum answering Scott's bell signals from the "mine". A signal starting with three bells meant someone was in the hoist bucket so be careful. Bells after that called for "up" (one), "down" (two) and "stop" (a short single bell when the drum is rolling) as several brave souls rode up and down in the bucket.

It wasn't all play. Scott busied himself for a while with a steam powered circular blade saw bucking firewood into manageable lengths. A long belt driven by the small single cylinder vertical steam engine ran tirelessly with a James Watt designed "balls out" governor keeping time. Big logs or small the sawblade never slowed.



**Above:** Scott uses a circular saw driven by belt from steam engine in the background. Note the iron wheels and canopy on his custom built steam engine.

It was a great show, but that's not all. There's more in a few months. That will involve Scott's pride and joy, a fully operational Aultman-Taylor steam traction engine. Resting a few feet away from the New Year festivities, the big steam tractor sat cold watching the party through the portrait eyes of C. Aultman and H.H. Taylor on its nameplate. It took 13 years to rebuild, (Santa Fe 2926 guys, does that time line sound familiar?). Farther back, a rusted steam tractor 'project' awaits Scott's attention. Scott says that the Aultman-Taylor steam traction engine will be featured in a steam up in May of this year. Wouldn't you like an invitation to that event?

### Friends of AT&SF 2926

In the lead-in to this story, we referred to Scott as a fan of 2926. Like many of our supporters, Scott, his family and friends are more than just fans. None of them are strangers to 2926. They have helped in several ways, including donation of a Sunbeam dynamo to produce some of the extra we juice will need when 2926 is operational.

They also contributed to the restoration effort with entertainment, and attracted fans of their own. Since 2003 Scott, Maggie, and Bruce have performed together as the award winning musical group <u>Holy Water and Whiskey</u> with Maria working the sound board. They have become a big hit at the NMSL&RHS Open House each fall. Their music cheers us up and fits well with the family atmosphere of the annual event. They currently have another CD of their music in the works.

For the New Year event, Scott's wife Maria, her sister Maggie and Maggie's husband welcomed all present with hot drinks and goodies. Thanks to the Altenbachs and friends for the hospitality, steam demonstrations, and support of the 2926 restoration.



**Above Right:** A view of the hoist through the timber structure across the "mine shaft" to the shed housing the hoist engine and cable drum. **Above Left:** Hoist operation in the shed, with engine, drum, cable and Scotty shrouded in steam.

**Below:** Andy Toyama stabilizes the barrel as Scott prepares to help Gail Kirby exit from her ride to the bottom of the "mine". To avoid wet riders, the shaft, and thus the ride, cannot exceed ten feet. The water table here is about 12 feet,





*Above:* Scott Altenbach's Aultman-Taylor steam traction engine. *Below:* Tractor nameplate with pictures of the builders.



The arrangement of whistles Scotty used to celebrate the New Year brings to mind one steam device that was not in evidence— a calliope, also called a steam organ. We have a 2926 fan in Phoenix who is an accomplished organist. If we could include a calliope in the local steam equipment inventory, we could add another musical element to our annual Open House.—-Editor



### NMSL&RHS BOARD APPROVES OFFICIAL MOTTO Our Big 4-8-4 Once Ran Parallel To The Mother Road, But At Its Cruising Speed, Few Automobiles Could Keep Pace By Albert Leffler



With steam locomotive 2926 nearing the completion of its decade-long restoration, attention is turning to operation under full steam and leading public excursions. Easy identification of a product or service can be helpful to fostering its success and as part of a developing brand strategy the NMSL&RHS Board of Directors has approved an official motto:

# Get Your Kicks With 2926!

There is an obvious and intentional tie-in with Route 66 and the juxtaposition of Albuquerque as a major stop on both Route 66 and the Santa Fe Railway, <u>and</u> as the home of 2926. The Alvarado Hotel and Restaurant, Crown Jewel of the historic Harvey House chain of railroad hospitality facilities was located where the two famous routes—rail and highway—met in downtown Albuquerque.

The "golden age" of railroading in America is generally regarded as the period between 1900 and the late 1940s. During those years, the majority of travel was by train with passengers riding in busy coaches but with some traveling in absolute luxury.

After WWII, travel by rail began to decline as airlines started their unstoppable growth and travel by automobile on good roads and highways was flourishing. Perhaps the best known highway in the United States was Route 66, also known as The Mother Road, and along many stretches automobiles would try to pace a speeding train, often with 2926 or one of her 4-8-4 sisters in the lead.

The completion of the restoration of 2926 is anticipated for late 2015 or early 2016. It will join the ranks of less than a dozen major operable steam locomotives in the U.S. Constructed in 1944, this "war baby" is considered by many to be the best in steam locomotive design. Our goal is to recreate the New Mexico portion of that golden age of travel by rail. Whether you drive in to Albuquerque, take Amtrak or fly in, we invite you to visit us and *Get Your Kicks with 2926*<sup>TM</sup>



First Snow At Los Chaves Crossing: Before realignment in 1937, westbound Route 66 turned north near Santa Rosa to Santa Fe, then South through Albuquerque to Los Lunas. It crossed the rail line in several places. This 2014 painting by Gayle Van Horn depicts Santa Fe 2926 steaming past the Phillips 66 service station at the Los Chaves crossing of Route 66 near Los Lunas. At Los Lunas, Route 66 turned west again paralleling the railroad in many stretches on its way to Los Angeles. Prints of the painting are available for purchase at the 2926 store.

### \* \* \* \*

# A COLD, WET END TO ANOTHER GOOD YEAR Nothing Short Of A Pacific Typhoon Or An Oklahoma Tornado Deters The 2926 Volunteers

The last two work sessions of the past year were not the most comfortable. Both were cold, and one was very wet. (See wet 2926 at right) The following series of pictures are proof that a little cold and wet does not deter the volunteers working on 2926---<u>AND</u> those volunteers are highly motivated by the continuing strong support of members and other friends of 2926 who are close enough to participate in the volunteer work.

Such support for the restoration of 2926 is still strong and growing. Our annual membership renewal and appeal for donations in December 2014 produced more than \$25,000 to help put 2926 under steam.

That amount may not seem like much when compared to the entire restoration cost that is nearing the \$2 million mark. But without that year after year steady support, 2926 would not be approaching its first steam-up.

There were very few resources and many skeptics when the restoration began. Our volunteers had a vacant lot, little equipment and few tools. The consistent support of members and friends did three things: 1) It covered the routine costs of materials and supplies necessary for the volunteers regular on site operations 2) It encouraged larger



With rainwater dripping down its side, 2926 appears to be alone. The following pictures tell a different story. The 2926 volunteers do not let a little inclement weather slow their continuing work to bring the big locomotive back to life.

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# PRESERVATION

And the winner is ...

TRAINS' grant will fund brake system for Santa Fe 4-8-4 No. 2926



All dressed up and just about ready to go somewhere in 2016, Santa Fe 4-8-4 No. 2926 entertains an open-house crowd in Albuquerque, N.M., in 2014, Kymberley Garcia

### Atchison, Topeka & Santa Fe No. 2926

Builder and date: Baldwin, 1944 Wheel arrangement: 4-8-4 Horsepower: 4,600 Class: Nos. 2900-2929 Weight: 510,710 pounds (heaviest 4-8-4s built) Service: Passenger Cylinders: 28 inches by 32 inches Valve gear: Walschaerts Driver diameter: 80 inches Boiler pressure: 300 psi Tractive effort: 66,000 pounds Fuel capacity: 7,000 gallons of oil Water capacity: 24,500 gallons The winner of TRAINS' annual \$10,000 preservation award, the New Mexico Steam Locomotive & Railroad Historical Society, will use the money to buy a modern 26L brake for Atchison, Topeka & Santa Fe 4-8-4 No. 2926. The aim is to put the big 1944 Baldwin, under restoration in Albuquerque, N.M., back in steam by 2016.

Work has been under way since 2002, and we asked Chief Mechanical Officer Rick Kirby to catch us up on what's been done so far and what is yet to happen.

Here is what he told us:

"So far, more than 113,000 volunteer hours and about \$1.7 million have gone into the restoration. That includes cleaning the tender, rebuilding the tender trucks and braking system, and repainting and updating the oil and water tanks for excursions.

"About 7,000 ultrasound measurements of the boiler were made to determine the thickness of the material, and that resulted in a left-side firebox patch approximately 4 feet by 5 feet in size, as well as three 1-footsquare patches on the engineer's side.

"Among other work, nickel alloy siderods were removed and rebuilt. More than 1,000 staybolt sleeves were replaced. Rebuilt or repaired were the cab, air compressors, dynamo, hot and cold water boiler feed pumps, brake cylinders and linkages, along with the lubricator pumps and lubrication distribution system."

So what is left to do? "The next big step is the construction of the brake stand and related valves, filters, and piping. Then it will be time to install the tubes, flues, superheaters, and firebrick; rebuild the safety valves; recondition or buy gauges and water glasses; and update the electrical system.

"After break-in runs, the engine will get new insulation and jacketing before painting and lettering.

"The project relies completely on the labor of its members and generous donations received each year from hundreds of individuals and various local and national organizations. In 2014, a large donation to repair the siding where No. 2926 rests came from an anonymous donor."

What is needed to finish? "More donations, large and small, to fund the final assembly, Kirby says. More than anything, he'd like to see a roof over the locomotive to shelter all of the work that has been done to bring the 4-8-4 back to life."

To help or for more information, visit www.nmslrhs.org.

For the last 15 years, 'TRAINS' preservation award has contributed \$150,000 to worthwhile railroad history projects, including locomotive and passenger car restoration and archive preservation and cataloging. Look for application information for the 2015 award in September.

60 Trains FEBRUARY 2015

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### BY JIM WRINN

### **BOILER AND BRAKE WORK KICKS OFF NEW YEAR** Installation Of Flue Tubes And Brake System Mean Lots Of Work For The 2926 Volunteers Throughout The First Quarter Of 2015

With most of the long-running staybolt work coming to an end, attention now turns to two other major areas of concern. They are; 1) Assembly and installation of internal boiler components, i. e. flue tubes and superheater bundles. 2) Installation of brake shoes that just arrived, and the soon to arrive components of the 26L brake control system. This work is subject to the procedures and regulations of the Federal Railroad Administration, and will be subject to FRA inspection.

There will still be other tasks, but the first quarter of the year might be labelled 'Boiler and Brakes' time. Both will occupy a large portion of our volunteer time.

### **Boiler Tube Work**

Boiler tube work will include tube cutting, cleaning, welding, machining, and just plain grunt work. The final steps of the flue tube installation require the work of a professional boiler service. That work will be done under contract with Welch Boiler Service. Welch employees will be on site in February to perform contracted work.

Preparation for the internal boiler work has been underway for some time. Assembly and welding of the superheater piping that will ultimately be installed inside flue tubes was discussed in our last newsletter. Superheater work is nearing completion, and internal boiler and flue sheet cleaning and preparation have been completed.

There will be a lot of manual labor by the 2926 volunteers involved in the boiler work. The 272 flue tubes require several preparatory steps before the contractor arrives on site to complete the installation. The tubes were delivered a few inches longer than necessary, and stored in a weather proof container. They must be removed, cleaned, and cut to a length just a fraction of an inch longer than the distance between the front and rear flue sheets.



**TOP:** Flue tubes are removed from the storage container in background and racked for cleaning, inspection, and cutting to proper length.. **BOTTOM:** A metal wagon once used to haul parts about the Albuquerque Back Shops, is pressed into service as a work table where tubes can be securely clamped for accurate measurement and cutting with a metal saw. The fresh cut ends are cleared of metal burrs and the tubes are placed aside on racks to await insertion into the boiler.

Before the final steps are carried out, there will be an internal inspection of the boiler body by an official of the Federal Railroad Administration. That inspection is one of several that will be required as the restoration continues.

The hard work of the volunteers does not stop when the flue tubes are sized, cleaned, and ready to install. As part of the contract with Welch Boiler Service, 2926 volunteers will provide labor to lift the tubes into the boiler.

They must be lifted to the front of the locomotive, through the smokebox, and inserted one at a time through the front flue sheet to the rear flue sheet.

The length of the flue tubes, more than 20 feet, and the height of entry into the smoke box means the tubes cannot be inserted from ground level. They must be horizontal before being shoved into their destination.



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#### (Continued from Pg 5)

The restoration site is not a typical "backshop" facility like those that once existed. Thus, the situation calls for innovation. It means building a long scaffold in front of the locomotive. The scaffold has to be strong and wide enough to support two or three volunteers as they handle the flue tubes lifted up to them by volunteers at ground level.

The photo at right shows assembly of the scaffold. The second photo shows the inside of a very clean smoke box, and a clean front flue sheet ready to receive the flue tubes.

Inserting the flue tubes will require a large number of volunteers. The tubes must first be lifted to the team on the scaffold, They then are handed to others inside the smokebox. That team will guide the flue tubes through the holes in the front flue sheet, while still another team working through the top boiler hatch and in the firebox guides the flue tubes into the proper holes of the rear flue sheet at the firebox.

It should be noted that the physical heavy lifting of the 2926 volunteers is not the only effort that has brought the restoration to this point. During the past months, NMSLRHS members and other 2926 friends did some heavy financial lifting by sponsoring all of the flue tubes and numerous brake parts.

#### **Brake System**

Restoring and bringing the 2926 braking system into compliance with current regulations is also on the agenda for the first quarter of 2015. Brake shoes and other brake parts are now on site and ready for installation.

The source and acquisition of the 26L brake control, and other parts of the control system, is still under study, but is expected to be resolved soon. The cost of those components will be covered by grants from TRAINS Magazine and the Tom E. Dailey Foundation of Chicago.



Setting Up For Flue Tube Insertion: In this picture, scaffold assembly is underway next to a rack of the first flue tubes sized and cleaned. At right is the heavy metal wagon that was pressed into use as a work table with the metal saw fastened to the end, to create a jig for sizing and trimming tubes.



**Insert Flue Tubes Here:** Ernie Robart points to a clean, nicely polished front flue sheet.

The new brake shoes are white cast iron. White cast iron is usually about 60 percent cementite, or iron carbide (Fe<sub>3</sub>C). It is not easy to cast, has a high solidification temperature, and is made by limiting the amount of silicon content. However, it has a high compressive strength and excellent wear resistance but virtually no ductility. Though brittle, it retains its hardness for short duration, even up to red hot.

The new, and expensive, shoes for 2926 were made by Horizon Metals Inc., a family owned and operated iron and steel foundry located in Nephi, Utah. They arrived at the end of the year. Depending on the availability of our volunteers, and good weather, the installation will start soon, followed by work on other parts of the brake system as soon as the new control system arrives. With any luck, 2926 will have an operable brake system by the end of this quarter.



**JUST ARRIVED:** The new year brought delivery of new shoes for our baby. Above left are some of the shoes for the huge 80 inch drive wheels. The shoes at right are for the smaller wheels on the pilot truck and the rear truck under the cab and firebox.

#### (Continued from Page 3)

donors to step up and provide services and expensive infrastructure items such as machine tools, welding equipment, heavy lifting, storage etc. 3) It removed, once and for all, the skeptics belief that a bunch volunteers would never be successful in carrying out such a complex undertaking.

The photos on this newsletter reflect the wide range of talent, interest, and dedication of the 2926 volunteers. For photos of most work sessions during the past decade, check our website at **www.nmslrhs.org**.



Warm & Dry: Not all jobs on the 2926 site are exposed to inclement weather. Here Bob DeGroft and Dave Van de Valde are busy machining small parts for a piece of equipment. This storage container has a couple of lathes, a mill and related metal working equipment. Those pampered machinists even have a heater.

Note to those members who have not yet renewed their membership for 2015: With your generous donations and volunteer efforts we have almost reached our goal of an operating Big Steam Locomotive. Don't let up. Renew your membership now.



A little cold rain doesn't bother Harry Emmons as he finishes loading rusted 2926 footboards for transport to Reliance Steel where they will be used as patterns for creating new ones using diamond plate metal. Harry and wife Lori come down from their home in Michigan every year to spend a few weeks in Albuquerque. We don't call them snowbirds, as many northerners who visit New Mexico in winter are labeled. **One who returns to Michigan in mid-January is not a snowbird**.

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### THE 2926 STORE AND GREAT RAIL MEMORABILIA

The End Of 2014 Saw The Completion Of the AT&SF 2926 Store

Our official storekeeper, Pete Adair was growing weary of dragging out tables and setting up a mobile storefront each work session, and dragging it back into storage at the end of the day. Besides, it occupied storage space needed for other purposes, and did not provide the opportunity for proper display of our rail memorabilia.

The Randy McEntire construction crew set to work. By the end of the year, Pete and his classy products had a home—an official 2926 store. The display can stay in place, and secured by closing the windows and locking the door.

The new store is stocked with a variety of railroad items. There are engineer hats, a variety of caps, t-shirts, sweatshirts and other wearable items for kids and adults.



*New 2926 Store:* Julie Tiedemann, Steve Bradford, and Jim *McClure check out the merchandise display in the new store built next to a storage container.* 

Added to those is a variety of railroad art, posters, antique lanterns, books, etc. Profit from the sale of all items is applied to the restoration of 2926.

### HOT ITEM FOR COLD WEATHER

**One new item is the stylish knit "watch cap" below.** We think that our model, Mike Hartshorne has a rather stern look



NMSLRHS President Dr. Mike Hartshorne models new watch cap.

because he was pulled away from his fun job on 2926 to model the new cap that Pete Adair has in stock at the 2926 store. There is still a lot of cold weather to come, so come by and get a watch cap while they last.

**NOTE:** In response to the question, "What is a watch cap?", the following definition is submitted. The term is of Navy origin. It is a type of headwear worn by seamen on watch in cold weather. Some folks who have never been to sea call it a 'stocking cap'.

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### LOOKING DOWN THE TRACK We Can Help Connect The Dots

New Mexico's map is dotted with world class tourist sites. Generally, the dots are separated by significant distances. Last year at a Legislative Finance Committee hearing, Senator Bill Burt from Alamogordo drew attention to that issue. He asked, "How do we link those sites with more effective transportation?"

Maybe we can help answer that question with an operational 2926. There is no doubt that our big locomotive will be a significant tourist attraction itself when it is under steam.

Even while under restoration, 2926 has drawn visitors from all U.S. states and more than a dozen other countries. In operation, pulling a string of classic passenger cars, it will be a *Mobile Tourist Attraction*.

By carrying tourists on rail heritage excursions 2926 can help connect some dots on the map. Currently, turning that potential into reality is still WAY DOWN THE TRACK.

There is a lot of work to do. Much of it is not mechanical. It involves working relationships with a variety of corporate and governmental organizations.

That ability to link other tourist sites with steam excursions will be subject to approval of the railroad industry as well as state and federal regulatory agencies. It will also require close coordination with other transportation modes, such as shuttle and van services.

For instance, getting approval to operate occasional passenger excursions between Santa Fe and Belen might not be too difficult. That would link two of the famous Harvey Houses plus other sites between, in Albuquerque.

Belen to Gallup? Not much chance. That line has bumper to bumper transcontinental freight traffic. The only passenger traffic is Amtrak. Only on very rare occasions will steam excursions be seen on such lines. Belen to Gallup must be either Amtrak or shuttle.

As we continue looking down the track, the Society has become an active member of the New Mexico Hospitality Association. With few exceptions, the members of that organization are the fixed dots we will help connect.

Meanwhile the march to complete the restoration of New Mexico's flagship steam locomotive and begin shakedown test continues.

Look for updates in future newsletters.

# ALMOST OUT OF SIGHT

Visitors walking onto the 2926 restoration site will see a lot of activity, with the huge locomotive as the center piece. They will see volunteers working around, atop, or inside the locomotive. That is because most of the work of the 2926 volunteers is outside, regardless of the weather.

There is a lot activity that is not so noticeable. It may be tucked into a corner almost out of sight, or buried inside the windowless machine shop. Those tasks involve reinstalling the electrical system in the cab, rebuilding components of the lubrication system, or machining replacements for worn or rusted parts and repairing equipment.

The pictures below reveal that there is more to see at the site than just a big machine with a lot of folks climbing around on it and getting dirty. There are many smaller out-of-sight tasks that are critical support to the big visible tasks like tube installation and brake assembly.



Under a canopy in the corner of the restoration site, the cab crew working on the cab's electrical has at least a bit of protection from the weather.



*Above:* With two lathes, a vertical mill, and numerous other donated machine tools, the 2926 machine shop is a bit cozy, but allows our machinists to accomplish a lot of work that would otherwise be shopped out at great expense. Here Ron Taylor is working at cleaning and checking bushings on brake linkage. *Below:* Brake carrier pins, (1) produced in the machine shop and ready for use, and (2) The window is finally installed on the Nathan lubrication pump.



## **COMING ALBUQUERQUE RAIL EVENTS**

• The AAPRCO Special Train "The Texas Special" will depart Albuquerque on April 19 for Lubbock-Houston-San Antonio. For details on this exciting rail heritage event, Check out the AAPRCO web site: www.aaprco.com/Travel\_Opportunities/Postings.html

• National Train Day, Saturday May 9, 2015. Look for more information in our next newsletter, or at the City of Albuquerque web site at, *www.visitalbuquerque.org/abq365/events/.../National-Train-Day/23473/*