

# BIG STEAM NEWS

NEW MEXICO STEAM LOCOMOTIVE & RAILROAD HISTORICAL SOCIETY

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## ANOTHER SUCCESSFUL OPEN HOUSE

### The Annual Open House At The 2926 Restoration Site Has Been Very Helpful In The Effort To Bring An Icon Of New Mexico's Rail Heritage Back To Operation

At the beginning of the AT&SF 2926 restoration project, it was obvious that the all-volunteer group would need a variety of assistance—a lot of that varied assistance and over a significant time span. For more than a decade, the annual Open House at the 2926 Restoration Site has been very beneficial. In addition to bringing direct support from a variety of sources, it has helped to publicize and maintain widespread interest in the project.

The 2017 Open House will certainly not be the last. But, if all goes as planned, the next annual Open House could be quite different. The word 'Restoration' will be replaced by 'Operation'. The location of the annual event might be different as well. When AT&SF 2926 can move about under its own power, such events could be held at more visitor friendly locations.

From event preparation until the last visitor departed, Open House 2017 was a success—and fun for all. The following pictures show some highlights of the 2017 AT&SF 2926 Open House. To view these photos—and many more—in greater detail, go to the New Mexico Steam Locomotive & Railroad Historical Society website <http://www.nmslrhs.org/> or the NMSLRHS Facebook page.



High pressure wash for the star of the annual Open House.



First step after cleanup is erection of sun shades.



Icing soft drinks in the food and drink line.



Parking is for visitors cars, not locomotives.



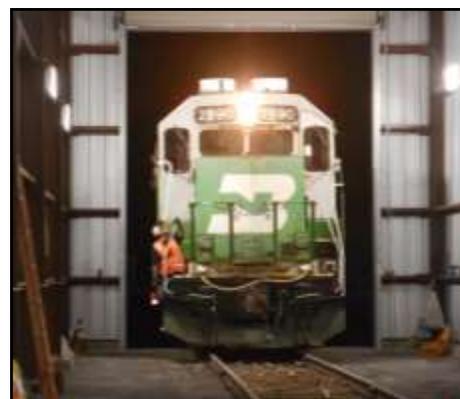
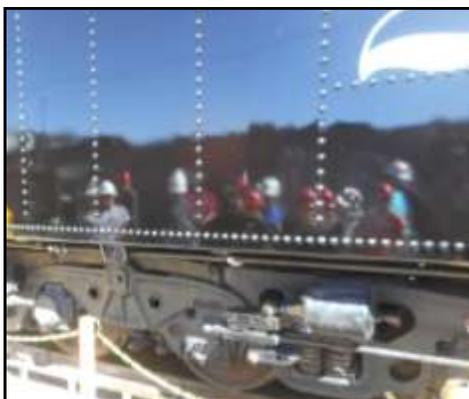
Installing a drawbar at the rear of AT&SF 2926.

**ABOVE: Preparing For The 2017 Open House:** A couple of work sessions prior to the Open House are dedicated to cleanup and preparation. It is a busy outdoor worksite. The annual Open House is a good reason to clean the site, for shelter from the sun, to provide space for setup of displays, and ensure comfort and safety for visitors. The first four pictures show various cleanup stages.

The last photo, showing reinsertion of one of the two drawbars connecting the water/fuel tender to the locomotive. This the first time a drawbar has been reinstalled in fifteen years. Previous moves about the site with the tender and locomotive connected have been done by chaining the tender and locomotive at the radial buffer.

**BELOW: Ready for visitors:** In the first picture, Open House preparation is near completion. The image reflected in the highly polished side of the water/fuel tender is a group of drop-in visitors being shown around the site by 2926 volunteers.

The other two pictures are late night shots of the site ready for visitors. In the engine building, BNSF diesel unit Number 2890 is parked in the space usually occupied by AT&SF 2926 and its tender. At the end of the day before Open House, the star of the show is secured behind the locked gate dividing the restoration site. One of the site's resident cats can be seen pulling guard duty.



(Open House Continued)

## AT&SF 2926 Open House

The 2926 site is in an industrial neighborhood. Parking can be a problem, and some the terrain is unfriendly to foot traffic. That did not deter those who came out enjoy food, music, rail history and the star of the show, **Atchison, Topeka & Santa Fe steam locomotive 2926.**

Helpful neighbors, Reliance Steel, RAX Lumber, and the U.S. GSA helped solve the parking problem. Use of the GSA parking lot, provided access from 12th St. as well as 8th St. Assisted by 2926 volunteers, the visitors managed to navigate the terrain to reach the show. Hopefully, when 2926 is in operation, such events can be held at a visitor friendly site.

The pictures on this page show a glimpse of the annual event. Many more pictures with greater detail can be found on the NMSLRHS web site and Facebook Page.



**West Entrance:** This photo by Ron Taylor shows the 2926 site as viewed visitors entering from the GSA parking lot. In the foreground is the Society's fully restored rail maintenance crew 'speeder'. On the right is one of the model layouts.



**AT&SF 2926 Friends:** Operation Lifesaver, Rail-Runner, Wheels Museum, Q-Lab and other organizations related to rail history and operation greeted visitors at the east gate from 8th St.



**Cab Tour:** An early, and very popular stop for visitors entering from the east gate was the locomotive cab (two pictures above). In the small picture, visitors are lined up for entry to the cab. In the second picture, visitors crowd the cab for a briefing on the controls, instruments, and duties of the crew members.



**Around The Site:** There was a variety of things to do and see. There was something for everyone. During the day, four different musical groups performed under the blue canopy at the extreme right of the first picture. Beyond that were tables and chairs, the food line, and the AT&SF 2926 country store with a variety of rail memorabilia.

No rail affair would be complete without whistles and bells. The blue covered table is really not a table. It is a very heavy 4 wheel steel wagon that once hauled locomotive parts at the Santa Fe Backshops. Atop that is a collection of whistles, gauges, and a large bell similar to the one on 2926.

Even the Duke of Albuquerque showed up in the person of NMSLRHS member Martin Andazola who depicts the Duke in local events and movies. Finally, in the picture at right, a young rail fan sits at "restored for display" original 2926 brake stand, bringing this Open House report to a stop.



# BUSY SUMMER MONTHS MEAN MAJOR PROGRESS

In the three months leading up to the Open House, the 2926 volunteers were not just busy. They made major progress toward completion of the restoration of 2926. The innumerable small tasks continued. All the pipe bending and threading, lettering and other paint tasks, along with myriad checks and tests were handled routinely. But three major tasks and one regulatory achievement are worth describing. They were: 1) Insertion of the superheater pipes, 2) Installation of firebrick in the firebox, 3) Installation of the smokestack, and 4) Meeting the critical federal requirements known as "FRA Form 4".

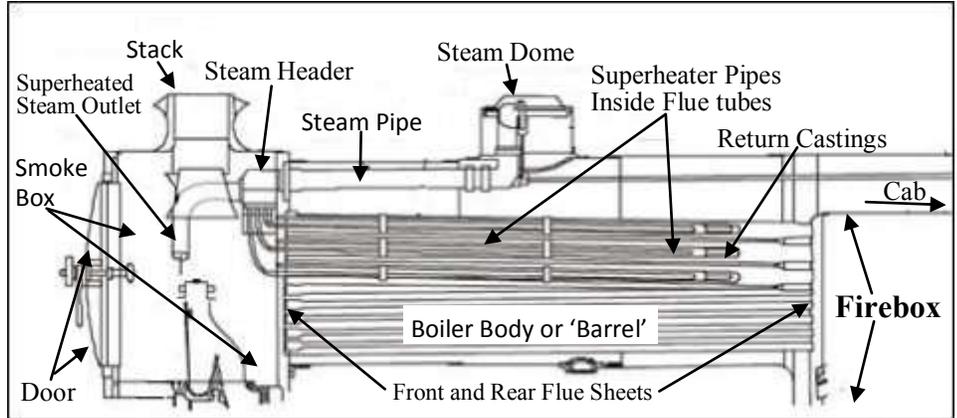
Those major achievements are described in the following pages. More detail and many photos of those tasks can be seen at the NMSLRHS web site <http://www.nmslrhs.org/> or on the 2926 Facebook page.

## SUPERHEATER PIPE INSERTION

Most rail fans—surely most AT&SF 2926 friends—are aware of the purpose and function of superheater pipes. For those not so well versed in boilers and superheaters, the sketch at right depicting the firebox, barrel, and smokebox, may be helpful.

The firebox, directly in front of the cab is surrounded by water. Steam is produced there, and is collected at the steam dome as 400° 'saturated steam'. The superheater raises the temperature to 700° 'dry steam' to power the locomotive. This is done with small pipes exposing the saturated steam to the hot exhaust gases in the flue tubes.

*(Note: Temperatures cited above may vary)*



There are 272 flue tubes in the barrel of AT&SF 2926. Of those, 220 are 3.5 inches diameter. The remainder are 2.5 inches. All 21 feet long, and are attached to 'flue sheets' at the ends of the barrel. Passing through the water filled boiler body, they carry hot fire gases from the firebox to the smoke box. Each 3.5" flue tube contains a 20 foot long pipe assembly consisting of four small diameter pipes. "U" shaped return castings are welded to the pipes to create a total length of 80 feet of superheater pipe in each flue tube.

Wet steam is fed from the steam dome to the pipes at the steam header in the smokebox. As the steam passes down and back through the 80 feet of superheater pipe in each flue tube, it is exposed to the high heat of the exhaust gasses. The steam temperature is thus raised to 700° dry steam. The dry steam is then fed into the steam header for use by the locomotive.

At completion of Carlos' long running task of welding and pressure testing, the 'ready to install' pipes were stored. The installation task, toting, hoisting, and shoving the long 4-pipe bundles into the flues, was a new challenge, requiring innovation and muscle. It meant pulling the bundles from storage, carrying them to the front of 2926, lifting them to the level of the smokebox, inserting them into the flue tubes, and connecting them to the steam header. The following pictures show some of that activity.



**Above:** The first photo shows Carlos working on one bundle of superheater pipes earlier in the year. The second photo shows the amount of muscle necessary to tote the pipe bundles. Picture three reveals some of the innovation required. A chain hoist on a built-on-site gantry crane is used to lift each bundle. The end of the bundle is then placed on the metal stand with a roller on a platform in front of the smokebox. The chain hoist is then used to bring the bundle to a horizontal position, level with the front of the firebox. All flue tubes and header fittings were numbered at removal to ensure a proper match at reinstallation.

**Below:** Once a bundle is level with its insertion point, several crew members are still required and on the platform outside to finish the installation. A lot of jiggling and sometimes a 2x4 are necessary to get it started. The final two photos depict the header pipe fittings and their connection to the steam header. The final photo shows pipes inserted and connected to steam header.



## FIREBRICK

The variety of talents among the AT&SF 2926 volunteers does not include masonry—especially the expertise necessary to perform the installation of the firebrick in the locomotive’s huge firebox. That task was done by a team from Winter Masonry. Located in Glyndon Minnesota, Winter does expert masonry work throughout the U.S. Arriving in mid-August, the professional crew went to work. The 2926 crew went into what CMO Rick called a “surge work” to keep the site open and provide support for them.



**Before and After:** The first photo is a shot of the firebox taken in 2007 after it was cleaned, but before removal of old firebrick. It was cleaned and firebrick removed allowing workers to carry out the 7000 ultrasound measurements on the walls of the boiler and firebox. The next two are close-up photos of the deteriorated condition of the firebrick before removal and cleanup.

The photo at right is a panoramic firebox view after completion of the firebrick installation. It and the first photo are before and after views by Ron Taylor. They were taken at the firebox door looking toward the front of the locomotive.

The large wishbone shaped images are safety circulators that provide enhanced water circulation in the boiler. The small rectangle at bottom center is the site of the fuel spray nozzle. Above, at the center of the photo, a small portion of the rear flue sheet is visible. The 272 flue tubes between the rear and front flue sheets carry the combustion exhaust through the barrel of the boiler to the stack. The flue tubes transfer more heat to water in the barrel. Those exhaust gases also provide increased heat to the steam via the superheater pipes. A number of the myriad stay-bolts suspending the firebox in the boiler are seen on the walls of the firebox.

**Firebrick Installation:** The 2926 volunteers are accustomed to spending two days per week working at the restoration site. Spending six days per week to support the professionals from Winter Masonry was challenging. But the result was an excellent job of reinstalling firebrick. Though the locomotive firebox is almost large enough to seat six for dinner, the small entry hole at the firebox door might present a problem. The photos below capture some of the action inside and outside the firebox.



**Above:** In the first photo, Safety Officer Jon spots firebrick that Henry is delivering to work area below the locomotive’s cab. Many of the firebrick had to be cut and shaped to fit. Precision cutting equipment, (second photo) was set up on a platform directly behind the cab. A member of the firebrick team prepares mortar.

**Below:** In the first photo, stack of firebrick has been lifted to the firebox, and two crew members prepare to begin installation. In the second photo, a third member looks in on the work from the firebox door. Last photo, its time for a photo break.



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**VISITORS WELCOME**

9:00 AM to 2:00 PM Wednesday and Saturday

**LOOKING DOWN THE TRACK**  
**Change Is On The Way**

The NMSLRHS will soon be operating an icon representing New Mexico's rich rail heritage—AT&SF steam locomotive Number 2926. With operation will come change for the volunteers who restored the huge locomotive.

During past 15 years, the Society's volunteer crew has gained a broad range of experience related to steam locomotive maintenance. Skills thus developed during the restoration will still be needed for operation. The change will be new or added tasks dealing with external interests that are anything but mechanical.

High on the list of changes is increased interaction with corporate and governmental entities responsible for regulatory, safety, and scheduling issues. There will also be marketing, public relations, and related administrative tasks. Some of those skills already exist in the 2926 team, and have seen use in restoration activities and site visitors. Most of the current volunteers would probably rather continue technical work where they will be needed.

Volunteers wishing to lay down their tools and switch to new non-technical tasks will find plenty of work when 2926 starts operating. There will be an increased need for volunteers for tasks related to public relations, marketing, ticketing, crowd control, etc. There is also a need to begin recruiting new volunteers.

**ANOTHER MAJOR MILESTONE**

At the end of the 3rd quarter, the Federal Rail Administration Form 4 was signed and submitted to local, regional, and federal FRA officials. Signing of the form is shown in the photo below. For follow up on the Form 4 process, check our website or Facebook page. The next newsletter will provide greater detail on this important step toward first steam up.



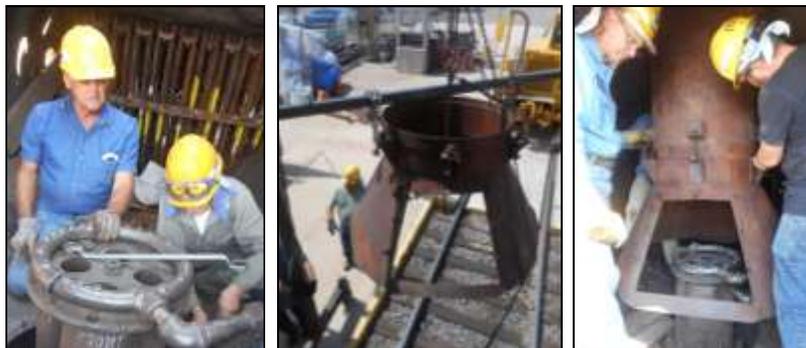
**STACK INSTALLATION**

For much of the steam era, coal burning locomotives produced a lot of smoke. Seen from a distance, the first visible feature of an approaching locomotive was billowing smoke from the stack. As an oil burner, 2926 produces less smoke, but the stack itself draws attention. It is extendable and is one of the last large components to be reinstalled.

Using compressed air, the 2926 stack can be raised and lowered while underway. Many reasons, from increasing draft to protecting crew and passengers from smoke, are cited as leading to use of the extendable design. One thing is certain. It is more complex, and a lot heavier than a fixed stack. (An operating 2900 stack extended is shown in photo at right.)



The following photos show just a few of the stack reinstallation steps including related components, two of which are shown below.



**Above:** In the first photo, the blast pipe is being set into place at the bottom of the firebox. Next (Photos 2 and 3) the petticoat that shrouds the blast pipe is lifted and set in place to receive the stack.

**Below:** The reassembled and tested stack is hoisted above the locomotive, lowered through the top of the smokebox and inserted into the petticoat.



**One Last Look Inside:** From now on, the top of the stack will be easily seen whether extended or not, but this is a last peek inside the smokebox. Ron Taylor shot this picture before the front door was closed and bolted shut.