

NEW MEXICO STEAM LOCOMOTIVE & RAILROAD HISTORICAL SOCIETY



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2926 REASSEMBLY GETS SERIOUS

**After Years Of Hard Labor—Disassembly, Cleaning, Refurbishment, Acquisition, Fabrication,
And Reassembly Of Thousands Of Parts And Appliances, 2926 Is Coming Back To Life**



Pictured here, on the fireman's side, the 80 inch drive wheels of 2926 are once again connected with the recently refurbished Timken roller bearings and sparkling drive rods

One of the most eye-catching features of a high speed locomotive such as 2926 is the flashing side rods when at speed. That will be especially true with Timken's specially designed side rods when 2926 is back on the high rails. Among the heaviest individual components of the locomotive, the side rods and their roller bearings also require a lot of special attention and care. That is one reason that the 2926 team views reinstallation of the side rods as a major step in the reassembly. In the mirror-like finish of the side rods, we can see the future—a future in which 2926 will once again be seen speeding down the track.

In the following, NMSLRHS President Mike Hartshorne describes the installation process, and how we often find solutions to challenges within our membership....Editor

Side Rods Going Back On! An ATSF Old Timer To The Rescue.

The side rods had been off 2926 for a year while the Timken tapered roller bearings were pulled, rebuilt, and reinstalled. Plenty of work went into polishing off the city's black park paint. The stacked and stashed "light weight" rods shined. A rack was built to hold them while Perez Collision on 2nd Street clear-coated them two at a time.

All the while we did not dare move 2926 since our curved siding and bumpy rails would probably get the drivers "out of time" with their crankpins at slightly different degrees of rotation. Tolerances are tight. If the drivers did not line up just right we would never get the side rods back on. Several of our mechanical guys philosophized that we might jack up a driver, grease the rails, and try to turn it with come-a-longs or something heavier. A fair amount of worry and wonder about this problem was put aside the day Glen Powers stopped by for a visit.

Glen as a youngster was an ATSF engineer who had run 2926 and a lot of other steam locomotives. His older brother had worked as a shop foreman in the Albuquerque Backshops. Once, when the two visited the restoration site together, we had a rare opportunity to listen to the two octogenarians when they became embroiled in a heated technical argument about 2900s. It was obvious to us that these two were very knowledgeable in the operation and maintenance of ATSF's biggest and fastest locomotives.

Recently, it was a cold and overcast afternoon with a biting wind when Glen dropped by the site. He walked around with a couple of us including CMO Rick Kirby. We showed him the new roller bearings and the cleaned up side rods and explained our anticipated troubles with getting the rods back on. "Oh well", he said carefully in the manner reserved for talking to preschoolers, "That's when you go to your wedges." I remember blurting out something like "What wedges, Glen?"

(Continued on Pg 2)

A brief time later Glen held his hands apart at shoulder width and his fingers a few inches apart as he described a long thin wedge that tapered from a couple of inches at one end to a sharp edge at the other. If we made the wedge right, it would fit over the top of a rail. If a pair of drivers needed to be a bit closer or a bit further apart we could use Lurch the car mover to pull 2926 and a drive wheel up on to a wedge. That driver would roll a bit further climbing the wedge than its neighbor and the gap between crankpins would be changed a few thousandths of an inch. We realized that what was a common sense, routine procedure for Glen was basic mid-school math. Maybe our 'mechanical experts' missed that class.

Bob DeGroft visited Reliance Steel, our helpful neighbors across the tracks. Reliance provided steel for the wedge. Dave Van Devalde designed the wedge, Rick Kirby welded the parts together, and Ron Taylor milled it to the proper profile.



GOT TALENT? This is how the 2926 team works—with a bit of basic common sense guidance from a retired steam era pro. At Glen Powers suggestion, Rick Kirby, Dave Van de Valde, and Ron Taylor make short work of fabricating the wedge pictured in use in the last photo.

Meanwhile, with a little polishing of the brass bushings to match the diameters of new sleeves on the Timken bearings the first fireman side rod slipped back on with relative ease. It took a bunch of guys, a forklift, lots of gentle persuasion with a wooden hammer, teeth clenched at just the right angle, and some luck for the number one to number two side rod.

Next came the inside rod between two and three on the fireman side. It just wasn't going back on. That's where the wedge came to the rescue on the March 16 work session.

I am told that high school member, Henry Roberts, one of the testosterone gang, figured out the sweet spot for the number three driver as it was pushed on to the wedge by Lurch. Then the rod "slipped right on" once the gap between crankpins was correct.

Thanks Glen! Thanks Henry! Seems old and sneaky teamed with young and smart beat our best mechanical philosophers who wanted to jack up the locomotive, grease the rails, and use physical labor to solve the problem. The wedge and an assist from Lurch worked very well.

The fireman side three to four rod was tough to install but did not require the wedge. The first three rods on the engineer side went on later with much less difficulty and the 2926 was taken for a stroll to loosen up old main axle bearing lubricant.

Spotted over the pit the number three and four bearings have been drained of their molasses-like oil and flushed repeatedly with diesel by the testosterone gang and their assistants.



Machinist Dick Downing polishes the brass bushings to match the bearing sleeves. Dick tells the folks back home in Indiana he is visiting his grandchildren in Albuquerque. This photo reveals another reason.



Left and Center: Lurch takes 2926 for a stroll, clearing the pit for a bit of cleanup before moving it back over the pit. Right: Once repositioned over the pit, flushing of the number three and four bearing reservoirs could be done,

PIPEFITTERS SKILLS ON DISPLAY

Plumbers And Pipefitters Local 412 And Some Of Their Associates In Utah Provide Major Assistance To NMSLRHS In The Restoration Of 2926

Steam locomotives have *A LOT* of pipes, most of which are hidden from view under insulation and sheet metal. They range in size from less than an inch to the enormous ones pictured below. Though some are straight, most have peculiar shapes that make reinstalling them similar to assembling a three dimensional jig-saw puzzle. Fortunately several years ago, when our team removed all the 2926 piping, every item was tagged and details relating to location and function were recorded. They were aware that detailed information would be necessary for reassembly. *Unfortunately*, many of the pipes, especially those under the sheet metal were severely corroded from years of being covered with insulation that captured and retained moisture. Of course, that meant that new ones would have to be fabricated—with all the same twists and bends that the originals had. It was far beyond our capability.



With Ken Dusenberry looking on, Carlos Osuna, long time Local 412 member (now an NMSLRHS member as well) applies his welding skills to attach flanges to one of the large pipe sections. With extensive experience at welding everything from critical piping at nuclear power plants to maze of stainless steel piping at large dairy facilities, Carlos has become a real asset in preparing and refitting the pipes fabricated in Utah.

That's when Local 412's associates in Utah stepped forward. They had the pipe fabrication capability that was lacking at the 2926 restoration site. They had heard about the 2926 restoration from Local 412's business manager. With NMSLRHS members providing transport of the rusted pipes between Albuquerque and Utah, building new pipes began last year. Now back at the site, Carlos Osuna is doing the welding to prepare the pipes for reinstallation. He and a number of other members are reinstalling them.

The reinstallation is a slow and demanding process that probably would draw laughs from the oldtimers who worked on the locomotive when numbers of them were still operating. After all, we have neither the skills nor equipment that the steam repair crews had when 2926 was operating. Thankfully, there are skills to be found, and we found just the right skills to perform the critical pipe fabrication and reinstallation job. It is the folks at Plumbers and Pipefitters Local Union 412 and their buddies in Utah.



Left: Reinstallation of the 2926 piping begins. Right: Additional recently fabricated pipes are in a storage unit awaiting reinstallation. Without the specialty cranes and other tools that once were available in the backshops, this can be a slow process.

THANKS FOR ALL THE HELP

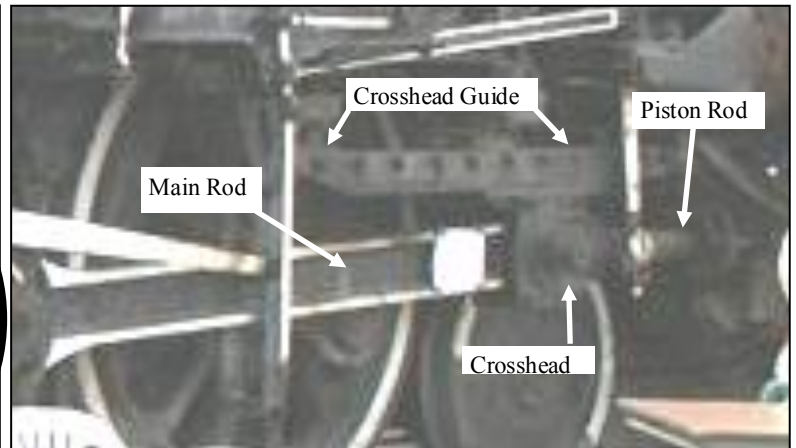
During the past decade, members of NMSLRHS have accumulated almost 90,000 hours of volunteer labor on the AT&SF 2926 restoration project. We are justifiably proud of that effort, *but that is only part of the story*. An icon of New Mexico's rich rail heritage would not be nearing operational status without the assistance of many people and organizations. In this issue of the newsletter, we have highlighted only two of them. Global corporations such Timken Bearings, national rail giant BNSF, local New Mexico small businesses, individual contributors throughout New Mexico, the U.S. and other countries all stepped up to help our volunteers. They provided services, equipment, and the always necessary cash contributions. National, State and Local government officials also provided support and encouragement. Thanks to all the help and support, we can now envision the light at the end of the tunnel—and it is the huge Golden Glow headlight of AT&SF 2926 under steam and speeding down the rail line.

RENOVATING THE 2926 CROSSHEADS

Grand Canyon Railway Crew Provides Critical Assistance

The support that NMSLRHS has received from other organizations and individuals has been phenomenal. Nowhere has this been more evident than the past couple of years as reassembly of 2926 has become the focus of our efforts. One group that stands out is Grand Canyon Railway's shop crew. The GCR, operated by Grand Canyon concessionaire Xanterra Parks & Resorts, Inc. maintains shop facilities in Williams AZ. When it came time to refurbish the 2926 crossheads, we contacted Sam Lanter at the GCR shops. The GCR shops are well equipped with tools, machines, and expertise for handling such work. After checking with Xanterra, the GCR machinists received permission to assist us with renovation of the 2926 crossheads. Once again, we received valuable help from another rail heritage organization—this time from Xanterra's GCR crew.

For those who are unfamiliar with steam locomotive design and operation, the crosshead assemblies, one on each side of the locomotive, are the links that deliver power from the pistons to the drive wheels. Their strength and precision of movement are critical to the locomotive's smooth and long-term operation. Connected to the piston rod on one side and the main drive rod on the other, the top of the crosshead is fitted into the crosshead guide. In the guide, the crosshead slides back and forth on a surface of babbitt, also called 'bearing metal', that can be replaced at set maintenance intervals.



NMSLRHS Archive Photos: In the first photo, AT&SF retiree Glen Powers discusses the restoration with Dr. Mike Hartshorne before removal of the engineer's side crosshead. The area at far right (inside black oval) depicts the location of the crosshead assembly. Major components of the crosshead assembly are pinpointed in the second photo.

The GCR shops offered to help by replacing and resurfacing the babbitt in the crosshead guides. Late last year the guides were hauled to the GCR shops, and an order was placed for the babbitt. Once the GCR crew took a look at the guides, they determined that there was also an alignment problem. The guides were slightly bent, perhaps due to wear or abuse.

Regardless of the cause of the bend, in a situation where tolerances are in thousands of an inch, the problem needed to be addressed. Fortunately, the GCR shop had the capability, in the form of a huge hydraulic press, to handle the problem. To ensure that the entire assemblies were in alignment, they needed the mounting brackets for the guides. Rick Kirby and Bob DeGroft quickly loaded the crosshead mounting brackets and hauled them to Williams so that the various parts of the crosshead assembly could be matched for smooth operation.

In the two photos on the right, precise gauges are used to determine the amount of adjustment necessary to correct the bends. Below two GCR crew members are using their hydraulic press to straighten one of the guides. Once the rebabbiting process is complete, the crossheads will be returned to Albuquerque to be installed on 2926, along with the main drive rods.



Bottom view of one crosshead guide as it is being checked for alignment.



A view of the crosshead 'shoe' that contains the layer of Babbitt to provide a wear surface.

A GRAND ADVENTURE FOR RICK AND BOB



Grand Canyon Railway Number 4966 charges through the pinon-juniper forest between Williams and the Grand Canyon.

Recently, the Society's Chief Mechanical Officer Rick Kirby and Assistant CMO Bob DeGroft loaded up the 2926 crosshead guides and quickly left for Williams, Arizona. There, Sam Lanter and his crew at the Grand Canyon Railway shops were doing some great work refurbishing the cross heads. Thus, none of us wondered if there was an additional reason for their hurried trip—until we found out about their grand adventure with Grand Canyon Railway Number 4960.

True, hauling the guides to Williams was necessary. Sam and his crew needed all major components of the crosshead assembly to assure proper tolerances. But now, in the words of famous broadcaster, Paul Harvey, *here is the rest of the story.*

A look at the broad grins in some of the pictures of Rick and Bob at Williams reveals that they had an adventure that went beyond just measuring crossheads and guides. Their adventure brought them a bit closer to operating 2926. It was an invitation to participate in a Fireman's Training Class in engine number 4960. Such an opportunity would certainly make most of the NMSLRHS members smile. It is training that all prospective 2926 firemen (and firewomen) will need.

Their grand adventure Fireman's Class included taking 4960 to the Grand Canyon and back. Since both are well aware that 2926 once made occasional runs to the Grand Canyon, it is quite certain that both Rick and Bob were dreaming of the time they can take 2926 for a return visit.

For additional pictures of Rick and Bob on their Grand Adventure to the Grand Canyon, along with the great work Sam and his crew are doing in their shop at Williams, check out our web site at nmslrhs.org

RIGHT: The Fireman's Training class members pose on 4960. Their engineer is extreme right, with white hard hat. Next to him are Rick and Bob.

BELOW LEFT: Bob takes a turn at the fireman's position. He appears to be concentrating on all those gauges.

BELOW RIGHT: Standing alongside 4960, Rick appears to be doing some last minute studying for an upcoming Firemen's Class test.



CAB WOODWORK NEARS COMPLETION

WORKING AROUND WINDOWS, ELECTRICAL FIXTURES, BRACKETS, MOVEABLE ROOF CONTROLS, AND OTHER HINDRANCES MADE WOODWORK INTRICATE AND DIFFICULT

In 2009, the late Jim Hills completed his excellent restoration of the rusted out metal portion of the cab. The cab was primed and in September 2009, it was installed for a fit check. It remained in place for more than two years as work progressed on other tasks. Then a grant from the National Railroad Historical Society provided materials to begin restoring the wood lined interior of the cab. At the start of 2012, Randy McEntire agreed to lead a crew in restoring the woodwork. It turned out to be a challenging and difficult task.

In February 2012, the cab was removed and placed under a canopy in a corner of the worksite. To keep wanderers, would-be 'helpers', and other nosey types away, the canopy was surrounded by yellow caution tape. Members learned quickly that if you were not assigned to Randy's crew, or had a very good reason for entering the cab site, you didn't cross the caution tape.



February 2012, Cab Move: The cab was lifted from 2926, placed under a canopy and measurements were made in preparation for installing the cab woodwork.



Throughout the past year, work progressed steadily, though with considerable difficulty because of the intricacy required to fit the wood around all the cab openings, fittings, and other obstacles. By early this year, all those funny shaped pieces were beginning to come together like a big upside down jigsaw puzzle.

There were also tasks other than woodworking. One was application of a nice black coat of paint over the grey primer. Another involved the sun roof openings. In that case, Randy had to call on super welder Carlos Osuna to fabricate a new rail for the moveable roof panels. The sunroof panels are power operated—but unlike electrical power of current BMW, Lexus, Volvo, etc, the power required is *manpower*.

The photos below show stages of the cab work. Photo number 1 shows preparation for the black paint. That's Pete Ormson taking care of the top cleaning while other crew members work inside. In Photo number 2, the cab sits under the canopy with the woodwork nearing completion.



In Photo number 3, looking from front to rear of the cab, the difficulties of fitting the wood paneling can be seen. The sunroofs, brackets, electrical fixtures and other intrusions presented a challenge. Randy and his team deserve kudos for an excellent job. However, if there is anyone else who has a locomotive cab woodwork job, odds are that Randy and his crew will not be among the volunteers..





NATIONAL TRAIN DAY 2013

The 2926 Water And Fuel Tender Will Return To The Alvarado Transportation Center May 11

Early on the morning of Saturday, May 11, the beautifully restored water/fuel tender will be moved from the restoration site on 8th St NW to the ATC. Since steam power will not be available until locomotive is fully restored, its tender will be moved with Amtrak diesel power. It will be moved to a spot in front of the ATC, where it will be displayed along with Amtrak, BNSF and Rail Runner diesel locomotives and passenger cars.

For the younger Train Day visitors—and the older ones who may have forgotten—generating steam to power steam locomotives meant that water had to be available to produce the steam. Additionally, there had to be fuel to heat the water. Historically, the fuel was wood, coal or oil. That fuel was burned in the locomotive's firebox to heat water to make steam that powered the locomotive. The tender carried both water and fuel, and was coupled directly to the locomotive. Thus, it functioned in the same role as the fuel tank on a car or truck. Since 2926 burned oil, its tender, one of the largest steam locomotive tenders ever built, carried 7,150 gallons of oil in a tank resting in a pocket in the front of the water tender. If 2926 had been coal powered, that pocket in the front of the tender would have contained coal. The main body of the water tender has capacity for 24,500 gallons of water.



Train Day 2012, the 2926 tender is displayed center stage between Rail Runner and Amtrak diesels.

For 2013 Train Day, on display with the tender will be two very important accessories from the locomotive itself. They are the huge brass bell and the steam whistle. The bell, mounted on a roll-around base will be available for visitors to ring. Though no steam will be available, the whistle will be connected to an air supply from the adjacent Amtrak diesel. With compressed air, the whistle may not be as mellow, and perhaps not quite as loud as with steam, but it should still wake up the town when it sounds.

The center of Train Day activity is the Alvarado Transportation Center at First St and Central Avenue. Activity at the ATC runs from 1:00 PM to 5:00 PM. There will be diesel engine and passenger car displays by Amtrak, BNSF, and Rail Runner. On a smaller scale, there will be a number of model train displays, food vendors, rail souvenirs, and other train related activities and items.

In addition to the ATC there are other activities, including:

- ✦ Tours of the old Santa Fe backshops at 10:00, 10:30, and 11:30 AM, and 1:00, 2:00, 3:00, and 3:30 PM. Tickets and information at: : <http://www.holdmyticket.com/buy/venues/albuquerque%20rail%20yards>
- ✦ Tours of the 2926 restoration site at 1833 8th St NW from 9:00 AM to 4:00.
- ✦ WHEELS Museum on the south end of the rail yards: Open from 10:00 to 5:00 PM.

Watch The Move BUT Do It Safely

This is for early risers who would like to see and photograph the 2926 tender move from the 8th St restoration site to the display location at the ATC. Amtrak will likely use one of its P-42 diesels to move the tender. There is no set time for the move, but Amtrak can be expected to start early. The move will probably take place between 7:30 and 9:00 AM Saturday morning.

The move starts when the Amtrak unit crosses 8th St NW into the site to couple with the 2926 tender. Exiting the site, it will proceed east on the Sawmill rail spur to the main line near Aspen and 1st NW. It will then move south along the main line to the Alvarado Transportation Center. **Viewers are cautioned to avoid trying to view the move at the street crossings.** The route passes a number of parking lots that will provide better viewing and photo opportunities. Such locations are also far safer than street crossings. There is even a place for breakfast and coffee on the route. That is the Burger King at Lomas next to the main line. ENJOY!

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ANNUAL ELECTION

Two Board Of Directors Positions Open

The By-Laws of the New Mexico Steam Locomotive And Railroad Historical Society define the number, selection and terms of the organization's Board Of Directors. The Board as a whole then elects Officers of the Board.

Each of the seven Directors are chosen to serve a three year term. At the end of the three years, the position is open to qualified members, including the incumbent. Terms are staggered so that each year, either two or three positions are open. This year, the positions held by Bob DeGroft and Gail Kirby are open.

Current NMSLRHS members in good standing wishing to seek a position on the Board must present a letter of nomination signed by two other members in good standing to the Election Committee prior to May 15, 2013. All questions regarding qualifications for a Board position should be addressed to the Election Committee.

Election Committee

Frank Gerstle	Chair
Nate Phillips	Member
Doyle Caton	Member

ANDREW F. (Andy) RUTKIEWIC
Death Of A Dedicated Friend Of 2926



At a recent Board Of Directors meeting, Andy listens intently to comments from another Board member.

Andy joined the NMSLRHS about five years ago, and began to make a difference immediately. A professional chemist, his first contribution to the 2926 project was the introduction of phytic acid. The eco-friendly acid did a remarkable job of removing scale from pipes without damaging the metal.

Soon after that, Andy became a member of the Board of Directors, and has chaired the Fundraising Committee for the past couple of years. He worked closely with state and local organizations to promote and publicize the historic nature of the 2926 restoration. In the short time he was with us, his contributions to the 2926 project were significant.

Andy's active participation and contributions are sincerely appreciated. He will be missed as a person, a friend, and a member of the 2926 team.

ARE WE THERE YET?

The Wide Attention The 2926 Restoration Is Getting Indicates That It Is Becoming A Tourist Attraction Earlier Than Expected

Over a decade ago when members of NMSLRHS were in the process of acquiring AT&SF 2926, they were determined to restore it to operating condition. To that commitment add dreams of steaming down the rails pulling a string of classic passenger cars with folks enjoying a step back into history. The dreams included arrival in a town—any town on the railroad—with crowds of people eager to see an important part of our heritage. They had seen pictures of locomotives in Portland, Los Angeles, San Diego, Chicago, and other cities drawing huge crowds. They knew it would happen.

NMSLRHS acquired 2926 in 1999, moved it from Coronado Park, and relocated it to the current restoration site. Restoration began a decade ago. With thousands of hours of hard volunteer work, help and support from an amazing collection of individuals and organizations, the venerable locomotive is now approaching full restoration. But a funny thing happened on the way to the dream of steaming down the track. The project itself became an attraction, even before 2926 is steaming.

Those who come by to see 2926 are not just rail fans. They are from all walks of life, young and old, and from just about all over. The NMSLRHS web site gets a high volume of hits, and many of those who view the web site put the restoration site on their travel itinerary. Virtually every work day sees a number of visitors come by the site. The visitors log includes folks from throughout the U.S. and abroad. There have been numerous visitors from Germany, England, Japan, Australia, and other countries.

Yes, we have arrived. The numbers of visitors will continue grow. AT&SF 2926 has become a tourist attraction well before its first steam up. All are eager to see 2926 in operation, and much like kids on a trip, the question is, "Are we there yet?"



Standing Room Only: Downtown San Diego, June 2008, AT&SF 3751, 2926's oldest sister rolls into town. She drew large crowds along the route from L. A. to San Diego. The picture on the masthead of this newsletter is 2926 at the same location in 1950.