

NEW MEXICO STEAM LOCOMOTIVE

AND
RAILROAD HISTORICAL SOCIETY

P. O. Box 27270, Albuquerque, NM 87125-7270—Tel (505)246-2926

SAFETY AND SECURITY FOR THE NEW YEAR

Restoring 2926 is a big challenge, especially for an all volunteer organization. That makes safety and security critical issues. With a new year beginning, we are trying to improve those features. Chief Safety Officer Jon leads off with changes in safety training.—Editor

Safety Training Schedule Changes

We are trying a new experiment this year. We will be holding TWO and ONLY TWO Annual Safety Refreshers this year in an attempt to get everybody through it early so I don't have to keep having sessions all year long. When you attend you will get a green sticker for your hard hat. That is so Rick Kirby can easily identify qualified workers when they show up on site. No green sticker, no work! I will continue my out-of-state mail-in refresher for those who can't make it for obvious reasons.

If you miss either of the first two sessions you will be required to sit through an entire 3 hour New Member Orientation, when one is given, before you get your sticker and are allowed to work. That gets everybody on the same page. The only exception is that if you went through a new member orientation during the last quarter of 2010 you will be good to go for 2011 and not required to attend either of the refresher sessions. You will need to see me for a green sticker for your hard hat.

The first session will be Saturday January 8th. It will be held at the **Local 412 Union Hall** 510 San Pedro SE, 87108. (**SE corner San Pedro & Zuni**) We will start at 9 a.m. with the regular monthly general membership meeting. The Annual Safety Refresher session will follow the meeting. In addition to the general safety refresher, Clem Harris will present a short session on railroad operational safety.

The second Refresher session will be held sometime in February at a date and place to be announced. It will probably be the first or third Saturday.

If you have any questions please feel free to contact me at kc5ntw@sdc.org.

Jon Spargo, Chief Safety Officer

Physical Security

One obvious security issue that we have only recently encountered is graffiti tagging. In one case our fence was cut by the taggers. In

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ARE WE SERIOUS?

The restoration of 2926 is a very serious business. Nowhere is the seriousness more evident than the tasks involved in rebuilding the locomotive's huge 300+psi boiler. One of the primary tasks is welding—patches, flue tubes, staybolts, etc. Preparation for the welding is challenging. Our guys have been at it for some time, and have done a fine job. But the welding itself is the real challenge. A high level of skill is absolutely necessary.

We are very fortunate to have a number of highly skilled welders, all volunteers from Plumbers and Pipefitters Local 412. The following article describes a test that those welders must pass to prove their skills.

Page six contains a collage of additional pictures taken at various stages of the preparation of the wrapper sheet patch.—Editor

The 6G Welding Test

By Professor of Radiology Hartshorne (in consultation with CMO Rick Kirby)

What on earth is a 6G pipe Test? That is just about a quote of my thoughts when CMO Rick Kirby announced that he would be qualifying volunteers from Plumbers and Pipefitters Local 412 so they could donate their skills to the restoration of the 2926. I understand written tests at the University of New Mexico and Professional skill tests in the field of medicine. But I had never heard of a 6G pipe test.



WELDING TASK #1: Fill the hole in the side sheet (Left) with the tediously prepared patch (Right). High quality welding is critical.

I figured that there would be a lot of work to do in preparation for replacing a part of the side sheet on the fireman's side. The corroded section we found with ultrasound testing needed to be cut out with a torch. That I understood. With the bad section a lot of stay bolt heads would have to be torched out on the outside and shaved flat on the inside and then cranked out one by one. I got it.

We had to secure the correct kind of steel, get it cut to size, and drill it out for hundreds of new welded stay rods to replace the staybolts that would secure that sheet. That made sense. Welders would have to sit down for our safety orientation. That was obvious. The stay rods would have to be cut to size from stock. OK, again obvious. A crate of welding rod would have to be procured. I thought I had it all figured out.

Except for this 6G pipe thing! I went to the internet and found a lot of welders complaining about an awful 6G test they had to pass before they could get work on some jobs. Turns out the number refers to a series of tests that start with the number "1" joining two edge to edge sheets of metal laid flat.

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BANGING ON A 2900

FEATURING

Ralph 'Jason' Johnson

By Mike Hartshorne



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addition to the unsightly tagging, a lack of physical security can result in equipment damage or loss of property.

To improve physical security we are installing a multi-camera system to allow remote monitoring of the restoration site. It will also record entry and movement around the site. It should be fully operational soon.



Working on a forklift platform, Nate Phillips installs cameras.

Additionally, the 8th St Gate and the walk-in gate have both been re-keyed. The number of persons holding keys has been reduced. Individuals who are nearby and available to come to the site on short notice will have keys. Casual visits should be arranged for work days. (It is actually more impressive to visitors to see a busy work site.)

Information Security

Another security concern is membership information. Our CMO, Board members, and others involved in managing the Society and the restoration need regular access to membership information to keep work moving forward. They need to know who has particular skills, who has work credentials, who is available to work, and how to contact members—especially those who regularly spend time at the work site.

Obviously, such membership information must be kept secure. We do not sell or share our member database as some organizations do. As we continue to update our membership information to keep it current, information security will be a high priority.

Help Us Keep It Current

We would like for our members to help keep the membership database as accurate and current as possible. Please let us know when you have changes in address, telephone, email, etc. You may contact us via e-mail at: nmslrhs@nmslrhs.org, or by telephone, our web site, or postal service as listed in the box at the top of this column.

In 1932 at the Midway Hospital in St. Paul Minnesota Ralph Johnson was born to a new family sprung from the little Swedish farm towns of Upsala and Elmdale, North Dakota. His dad had graduated from the University of Minnesota and had worked in Cleveland for the Pennsy RR. His mom had credentials as a “biscuit shooter” (a waitress Ralph tells me).

Ralph’s dad was a civilian employee for the Corps of Engineers and followed the work of constructing dams and locks on the upper Mississippi from St. Paul to Winona to Fountain City. Ralph’s younger brother was born in Winona when Ralph was two years old.

Steam and Travel

His father’s work meant that the family moved about frequently. From the time he was a youngster, Ralph and his brother got to see a lot of new places. His introduction to steam was much closer to home though.

He got his first steam experience with his granddad’s tractor. It was a wood fired 10 horsepower tandem compound Case engine his grandfather used threshing oats for local farmers.

Each farmer would provide wood cut for the engine for his own threshing. One farmer cut his fuel four inches too long for the firebox. Ralph had to re-cut that load and he still remembers it.

At age 16, Ralph’s dad was working in Panama. There, Ralph got an introduction up close and personal with a railroad steam engine. He spent a morning roaring up and down the rip track with some old time railroaders while they checked out a recently overhauled Panama RR engine.

In 1936 Ralph’s dad was transferred to the new Conchas Engineering District near Tulumcari to work on the dam there. After four years there it was on to Los Animas in Colorado where the John Martin dam was being built.

In 1939 the family moved to Panama. There, Ralph’s dad was helping plan for a third canal to parallel the two in service. WWII stopped that project, and the family was evacuated by Pan American in 1942. Mom soon had the boys back home in Upsala in elementary school after a summer with measles. Ralph went to the same school his mom had attended. His dad was off doing something he wasn’t talking about. “Probably Army Stuff”, says Ralph.

After a snowy winter in 1943, Ralph’s dad was back and the family rode by train to Albuquerque. Ralph’s dad would be gone quietly for weeks at a time until the war was over. He says he and his brother would catch the East Central bus all the way out to Louisiana Blvd. (The east edge of town, at that time). From there, they would hike little way north and east with their .22 rifle to plink tin cans. (Only gang members do that today—and not at cans.)

Right after VJ day, the family was on the way back to Panama where they lived in their old house again. After school Ralph was a boat builder’s helper,



Ralph’s grandfather stands next to the rear wheel of his Case Steam Tractor.



Ralph’s PRR ride at Balboa CZ.

was Sea Scout and started learning celestial navigation. His dad worked on the proposed sea level replacement canal. It never got built.

Following the Panama experience, Ralph's dad moved on to Bull Shoals, Arkansas to be Chief Engineer for the Corps. Ralph, a junior in high school, knew more math than his Math teacher and more chemistry than the Chemistry teacher. His dad didn't care for that situation. He solved the problem by putting Ralph in the Kemper Military School in Boonville, Missouri for a year while the rest of the family moved to Los Alamos, New Mexico. The WWII riddle was solved with that move. Ralph's dad was working for the Atomic Energy Commission.

When Ralph started college it was at the University of New Mexico. He says he always had summer jobs like working on survey parties. While in the Civil Engineering course studying dirt, Ralph took electives in Mechanical Engineering. Ralph admits he discovered women somewhere along the way and one, Kay, discovered him. They were married in 1950. They had a couple of boys along the way. The oldest is a Naval Architect in Savanna, Georgia.

After college Ralph thought he might get a job working with the New Mexico Highway Department doing bridges and such, but the Department preferred experienced engineers. He did get an offer from Chicago Bridge and Iron to work in South America. He didn't take it. Instead, he took a job with the Boeing Company in Wichita, Kansas.

Life With Boeing

That started what sounds like a long roller coaster career ride at Boeing. At Plant #1 Ralph worked at the drawing board doing mobile training device work for B-47s. Later at Plant 2 he worked on empennage and control surfaces for the B-52. There was preliminary design work for the F-111, and work on the Dyna-Soar one-man space plane project.

In 1969 Ralph's group did an experimental set of winglets for the KC-135 tanker. Somehow he managed to borrow design engineers from competitors like Lockheed to complete that job. A real problem to be solved was that the left winglet would be near the flux gate transmitter for the plane's compass. That area had to be kept free of metals with a magnetic moment so his design group tried Inconel X (a copper nickel chromium iron manganese and other stuff alloy) with parts that had to be machined from 20" x

20" x 8" blanks. It turned out to be extremely touchy material to work with. It work-hardened so fast that a milling tool could ruin a piece in a too fast pass. There were also problems with the experiment's test sensing package supplied by the Air Force. Winglets never caught on for the KC-135.

Also in 1969, Ralph had time to use his earlier Sea Scout training to build his first small sailboat. Larger craft were to come later.

Ralph's real forte became one of chasing repair work for aircraft damaged in "incidents". In trips around the globe Ralph's group would photograph and assess the damage, draw up needed repairs, design the "kit" of needed materials and slap a price on it guaranteed to cover Boeing's costs for the work. The Air Force could accept the price, do their own repairs, or write off the aircraft.



Ralph stands near the lower surface of a B-52H. He designed the housings (on his left) for Electrical/Optical viewing.



Ralph with the first boat he built in 1969. A larger one came later.

Every SAC base, Riyadh, Mildenhall, Guam, Thailand, Okinawa, and many more sites were visited. (Join Boeing and see the world.)

With that under his belt Ralph was sent to Lake Charles, Louisiana as Chief Engineer for Boeing Louisiana, Inc's new KC-135 repair depot. He even got his own secretary. He could keep his 30 foot sailboat conveniently there instead of hauling it back and forth from Kansas. He hired up old Boeing engineers and new local talent and did the job for five years until the Air Force wouldn't go for another five year contract. The plant was closed. He helped his engineers find work elsewhere in Boeing.

Boeing had plans for him immediately in Seattle to work on the 777. The company bought his house, shipped his household goods and one car and gave him a minimum of 350 miles a day to drive the other car to Seattle.

There he worked on cowlings for an aircraft that was offered with Rolls Royce, General Electric, or Pratt and Whitney engines. He started with Rolls Royce and assumed the other two power plants as their engineers were moved elsewhere. Signing two hundred time cards meant he had far less drawing board time.

After 38 years with Boeing and many company trips it was time to quit. The Johnsons retired back to a five bedroom Lake Charles house in the Big Thicket area. He made the master bedroom into a machine shop and cranked out models and gun parts in air conditioned style.



After retirement Ralph had time on his hands. This is machined from a Stuart engine kit with a homemade lubricator.

Ralph practiced the French horn, sailed his boat, taught celestial navigation and enjoyed a little travel until Hurricane Rita dropped a tree on a bedroom in his house while he was vacationing in Sicily.

Four years ago Kay and he made a decision. It was time for a continuing care



The student seaman at the wheel on oceanographic research in the north Pacific.

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WHEELS BANQUET

NMSLRHS Was Well Represented

At The Annual WHEELS Banquet

Saturday November 13, a number of our members showed up at the annual WHEELS fundraising banquet at the Embassy Suites Conference Center. Most wore our trademark dress uniform—Roundhouse bib overalls with hats and handkerchiefs to match.



Those bib overalls sure make a snappy dress uniform—well, at least they draw attention to our efforts to bring 2926 back to life.

Those who were adept at domestic negotiations managed to have their spouses accompanying them. One person exempt from the uniform requirement was Albert Leffler. He was tapped to wow the crowd with the story of AT&SF 2926.



Albert with Lida Crooks on his right and his sister Beverly on his left.

Is a suit and tie really more photogenic than bib overalls?

Maybe Mike Hartshorne's wife Lida can answer that. We could find no pictures of her with Mike dressed in his Roundhouse finery.

Everyone enjoyed the evening—good food, good friends, and a successful fundraiser. We are all looking forward to the future—a future with a completed WHEELS museum, and a shiny 2926 alongside, under steam and ready to roll out for an excursion with a string of historic passenger coaches in tow.

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The G stands for a groove configuration between the edges. (So that was why the edges of everything had to be beveled!)

The tests get harder by welding vertical sheets (2) doing the test overhead, at an angle, and get really bad with a 6. Horizontal, vertical, flat and inclined welding tests are all done together with the 6 test. There is a worse test it seems. A constrained version of the same test flanks the test section with closely placed obstacles limiting the welder's maneuvering.

Rick had a test mount built that holds a slice of 6 inch pipe at a 45 degree angle. The upside of the slice is beveled. Then the test is performed when a similar piece with a beveled edge is positioned with a short gap between it at the mounted piece. The two bevels form a groove (that is the G again). At the bottom of the groove is a small gap flanked by a "land" (a flat edge at the base of the groove). The welder starts bridging the gap between adjacent lands and then works to fill in the gap. So that is why every beveled edge we cut had to spare the last 3/32 inch leaving it square as the land.



Smiling Danny Rivera doing his 6-G welding test ...two pieces of 6' pipe held at 45 degrees . He is gonna make it one piece.

There are different welding standards and codes in different countries. There is lots of on line technical advice about how to do this test that was way over my head. Just doing it isn't the worst part. In addition to a critical visual



SMOOTH JOINT: The two pieces of pipe are now one, and ready to be cleaned, polished, and cut into strips called 'coupons'.

inspection of the quality of the weld metal, strips of metal called coupons are cut across the weld from the joined pipe and pressed into a "U" shape with the weld at the bottom of the "U". If one breaks the welder doesn't pass. I began

to understand the on-line bitching by welders having trouble passing the test. They called it sadistic when they were polite.



The two pieces of pipe that are now one are cleaned and polished. Then they will be cut into multiple pieces—strips across the weld joint to be used for the final step of the 6G test.

We now have our first welder qualified to work on that side sheet. Danny Rivera marched through it in November with the smile on his face hidden beneath his helmet. Rick Kirby has the intact bent coupons held in evidence. Soon we'll see Danny making the welds that secure the big patch and the stay- rods on the fireman's side. It has to hold solid at an operating pressure of 300 psi and the quality of those welds will be assured by that nasty 6G pipe test.



DANNY'S WINNING TICKET: These test strips, or 'coupons' are symbols of Danny Rivera's win over the difficult 6G test.

The coupons are bent two ways to test the weld inside and outside. If the weld doesn't show cracks either way, the welder is qualified to start on the boiler.

We better hurry with the preparation, looks like Danny is ready to tackle that fireman's boiler patch.

—And speaking of preparation

To get to this point, a lot of volunteers with a wide variety of skills and experience, (much of it unrelated to steam engines) worked diligently for many months to reach the point that Danny and the others can do their magic. There were many appliances, pipes, and a lot of rusty sheet metal to remove even before GrandCor came in to do the professional asbestos removal.

That was followed by many, many hours of scraping, needle scaling, ultrasound testing, staybolt removal, cutting, drilling, beveling, and myriad other grunt work tasks. Though the pictures on the next page represent only a small fraction of that work, they do reveal just how big this project is.

Our steam era forebears, who could rebuild one of these locomotives from the ground up in a fraction of the time, are probably somewhere watching, laughing and shaking their heads. One of our objectives is to gain their approval by bringing 2926 back to the condition it was in when they left it to us.

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solution, so they moved back to Albuquerque. Ralph had contacted the New Mexico Steam Locomotive and Railroad Historical Society while still in Louisiana. He found us immediately. He also found New Mexico Territorial Brass Band, the Shrine Band and the American Legion Band in Albuquerque. He joined all four organizations and moved to the La Vida Llena retirement home.

Now you can find Ralph beside the lathe in the NMSL&RHS machine shop every time the site is open (if there is not a concert requiring his duties elsewhere). You can tell if the 2926 part you are holding is his handiwork. There is a little "J" stamped on it. If you have a few minutes and he isn't busy ask him about Panama, Los Alamos, Boeing, or any of the other places he has been for some interesting tales. You'll be glad you did. Some day he'll also be



On a cold Wednesday morning, Ralph is hard at work at his lathe in the NMSLRHS machine shop.



(Above) Ralph in a Civil War reenactment band. (Below) Same Ralph, different instrument.



telling stories about rebuilding the 2926



GETTING READY FOR DANNY

Preparation for the welders is almost finished. Of the hundreds of pictures taken, the four here and the two on the front page provide a very brief glimpse at some of the work.

Don MacCornack drilling holes in the patch, (Right) and the two on page 1 were taken outside where the air is a bit fresher—though it can get hot or cold.

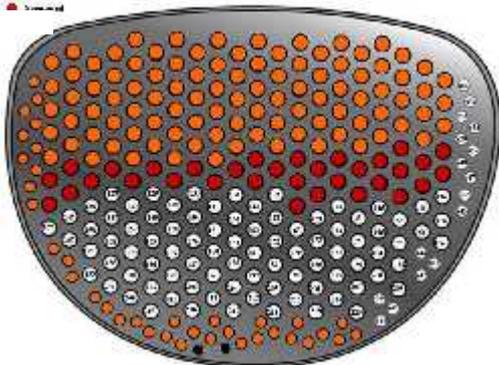
Inside is another story. Though the firebox is huge, it can get very uncomfortable—and dirty. In picture #1, Randy McEntire is installing a rig to suspend the drill in case of power failure. The magnetic drill holds to the wall for drilling, but a power loss would let it come loose quickly—while still spinning. No one wants a heavy spinning drill to suddenly drop in their lap.

For more pictures, go to our web site: www.nmslrhs@nmslrhs.org



FLUE TUBE SPONSOR REPORT

● = SPONSORED TUBE
 ● = SPONSORED TUBE

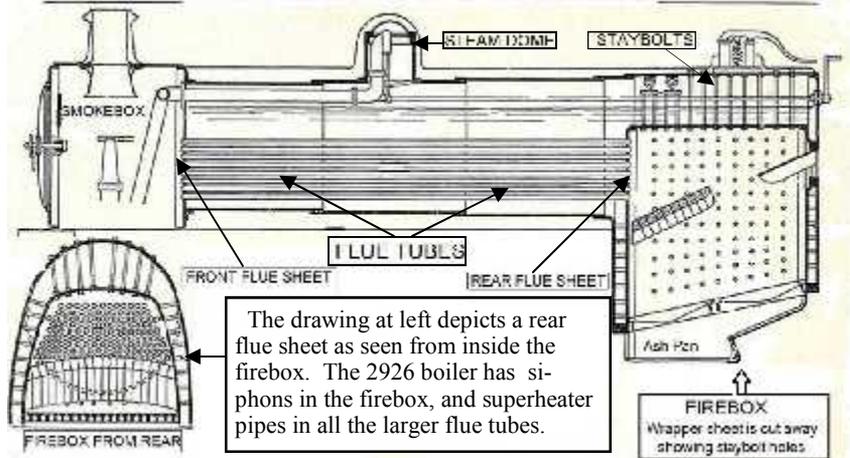


THEY ARE GOING FAST

Flue tube adoption has proved to be a success. Well over half of the 274 tubes have a sponsor. Many sponsorships are In Memoriam to family and friends who loved locomotives.

A list of sponsors can be found on our web site. For those who plan to sponsor one, time is getting tight. We are making a strong effort to fill all the spaces in the flue sheet (above) in a few months.

Locomotive boiler sectioned



The drawing above is of a much smaller locomotive than 2926, but it provides a good graphic presentation of where certain parts (such as flue tubes and flue sheets) are located. The flue tubes attached to the front and rear flue sheets are at the very heart of the steam producing process.

Pictures 1, 2, and 3 (above) were taken inside the huge 2926 firebox.