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*Hugh Earnhart's
3-Rail Diamond
in the Rough*

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Product Reviews:

- *Lionel ZW-L Transformer*
- *Williams by Bachmann GP30*
- *3rd Rail 4-8-4*

*Linda Quick's
High-Level Modeling
on a Low-Level Layout*





3rd Rail Santa Fe Class 2900 4-8-4

Review and Photos by George Brown

On the high iron of real railroads, 4-8-4s were big, while on the hi-rails of today's O gauge pikes, scale models of these locomotives are also big. So the immense size and weight of the 1:48 scale 3-rail Santa Fe Class 2900 Northern didn't surprise me at all. The profuse details were also not surprising given what I saw on a previous benchmark Santa Fe locomotive from 3rd Rail, specifically, the Class 3700

4-8-2 that I reviewed in Run 247, January 2011. Our evaluation sample of the AT&SF Northern with its huge 16-wheel oil tender proved to be every bit as detailed as the earlier Mountain. I had high expectations of the 4-8-4, and as I mentioned to Scott Mann of Sunset/3rd Rail in a conversation over the Internet, the model met or exceeded all of them. Scott was in China finishing one of his latest projects.



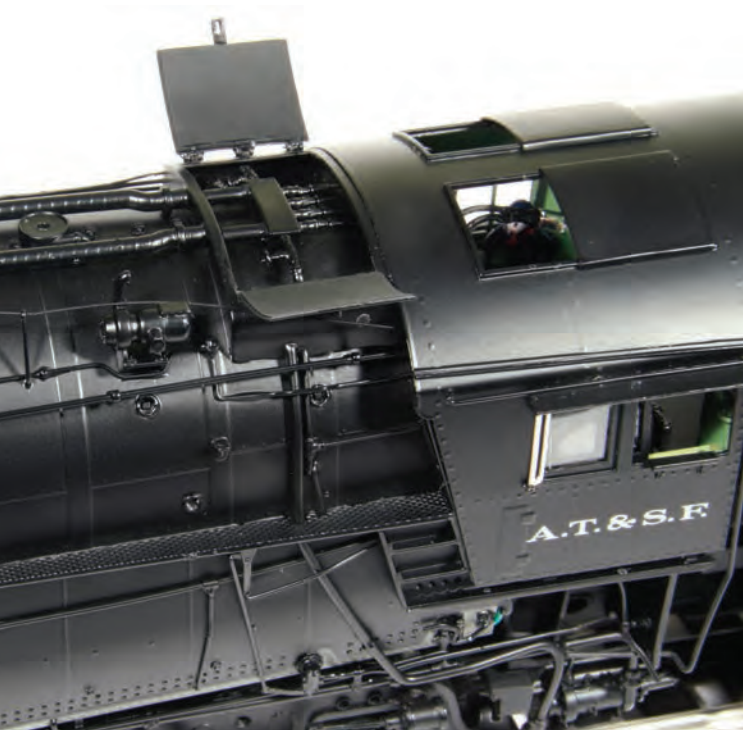
Prototype Notes

Baldwin Locomotive Works built 30 full-sized Class 2900s during WWII in 1943 and 1944 using the design of the pre-war Class 3765 Northern. Not only were the 2900s massive with a 121' overall length, but they were also the heaviest 4-8-4s ever built. Because of wartime restrictions against the use of high-strength steel alloys in steam locomotives, the 2900s were erected using milder strength but heavier steel. With 80" drivers, a boiler pressure of 300 psi, and a loaded weight of over 500 tons, these locomotives produced a tractive effort of 66,000 pounds with approximately 4600 hp available at 50 mph. Fully loaded, they held 24,500 gallons of water and 7,000 gallons of fuel oil.

Built for service across the arid and sparse Southwest, all of the 2900s hauled freight during the war, but afterwards they pulled passenger trains. Normally, the big Northern ran between La Junta, Colorado, and Los Angeles, California, which included the climb over Raton Pass. On occasions they also worked as far east as Kansas City. Retirement of the last 2900 was in 1959, with several on static display today. Santa Fe 2926 is currently being restored to running condition in Albuquerque by the New Mexico Steam Locomotive and Railroad Historical Society.

Construction and Features

As with all previously released O gauge steam locomotive models from 3rd Rail, the Northern is all brass with lost wax castings and various sizes of wire for the details. The frame is milled from solid brass bar stock with etched brass sheets hand-soldered together to form the main structures such as the boiler, cab, and tender. Of course the drivers are coined brass, which is a high-pressure stamping process



that 3rd Rail has used for years. Steel rims pressed onto the drivers give them the necessary durability needed for rolling on rails.

The photos show most of the major details and a number of the subtle ones such as the sand pipes and nozzles in front of the drivers. Other subtle details include posts for flags and the simulated electrical conduit and junction boxes between the steam generator and the headlight plus the classification lamps. On the tender, heating pipes for the oil tank are included along with the rod that fits in on the real engines used to pull waterspouts down to fill the water tank. These are but a few of the details on our O scale Santa Fe 2916. The sidebar lists the salient features and major operating details of the locomotive.

Rollers under both the engine and tender pick up the electrical power from the track's center rail. Command and sound electronics ride inside the tender with a 10-wire tether cable carrying the necessary control and power signals between the tender and engine. The receptacle for this cable is recessed in the back of the engine's frame under the cab floor. With the tether cable connected, the plug is nearly hidden within the frame. On the back of the cab floor, a hinged step plate visually fills the void between the engine and tender and effectively hides the tether cable. However, nimble fingers are necessary to ensure the tether plug is fully seated in its receptacle. If it's not, the engine runs erratically or not at all.

As with its previous command-equipped brass locomotives, 3rd Rail employs the tender wheels and copper alloy wipers to

pick up the radio frequency TMCC signals directly from the track. Two sets of wipers on each truck are wired to the antenna lead for the TMCC receiver board. The normal design for metal steamers with TMCC uses one or more insulated wire handrails for the signal reception antenna.

A hefty speaker inside the tender does an excellent job with the RailSounds 4.0 repertoire of sounds for a large steam locomotive. For conventional operation, a volume control for the sound is located under the rear water hatch on the tender.

Bright plating on the side rods and valve gear was attractive, but I would have preferred a dull aluminum finish on the rods or even a light pewter coating. I liked the painted wheels on the pilot truck and would like to have seen the same finish on the wheels in the trailing truck and tender. I used to prefer bright rods and wheels but now favor the darker ones, or at least not bright and shiny. As I've come to expect from 3rd Rail, the satin black paint with silver lettering is flawless as is the graphite paint on the smokebox front.

In my checking several principal scale dimensions against those of the real 2900s, they were exact. Although I have a partiality for highly detailed steam locomotives, I'm by no means a rivet counter. But I understand from a reliable source that the rivets and other details on the model are accurate or very close to those on the real 2900s. To me, the O scale version of Santa Fe 2916 was fabulous in the detail department.

At Trackside

On the O72 oval of the editorial Carpet Central Railroad, the 2916 proved to be an excellent runner in command mode, which is how I ran it for most of its stay here at the OGR Southwest Office. Conventional operation was fine, but running any locomotive under TMCC brings out its best, and the big Northern was no exception.

A factory-installed 9-volt battery keeps the sound system running through its shutdown sequence in both command and conventional operation. The one recommendation I'd make for the command operator is to take this battery out of the tender. Removing the tender shell is easy, and because the battery serves no real purpose for the command operator, why risk a leaky battery sometime in the future, especially if you happen to forget it's inside the tender. Yes, alkaline batteries can leak.

I especially enjoyed watching the engine haul several different long and heavy trains of weighted steam-era freight cars, which it did without even breaking out into a figurative sweat. Given the herculean tractive effort noted in the performance sidebar, the engine could have hauled a lot more cars if I had both the track length and a sufficient number of cars, which I don't.

Our evaluation sample experienced no problems running on my Atlas 21st Century track and through O72 turnouts in forward or reverse. Naturally, reverse running was slow, especially through the turnouts. Fortunately, slow running was one of the engine's operating attributes with the Electric Railroad cruise control.

On the topic of the ERR Cruise Commander, its motor drive logic ran the locomotive almost silently, which I found delightful. Engine start was smooth at the first speed step, and there were another 99 steps to go for full throttle. Oh, the Northern never saw full throttle, but it tracked rock solid at all speeds.


3rd Rail Santa Fe Class 2900 Features and Details

- Skew-wound Pittman motor with flywheel
- Carbon fiber belt drive
- Ball bearing drive shaft with bronze drive gears
- TMCC with RailSounds 4.0 from The Electric RR Co. under license from Lionel
- ERR Cruise Commander cruise control
- Switch-selectable two or four steam exhaust chuffs per driver revolution
- Traction tires on rear drivers
- LED headlight, classification lamps, number boards, and directional backup light
- Smoke unit switch selectable for command or conventional operation or off
- Coil-operated coupler on tender
- Standard and Santa Fe lifted smokestacks included for owner installation
- Opening turret hatches, cab roof vents, and cab windows
- Illuminated cab with crew figures on seat boxes
- Detailed boiler backhead with hand-painted valve handles
- Opening water hatches on tender cover sound and program controls
- Sprung journals for driver axles and axles on trailing and tender trucks
- Individual articulated side rods
- Dual rods between main and third drivers
- Clear plastic windows in cab
- Minimum 3-rail O72 curve





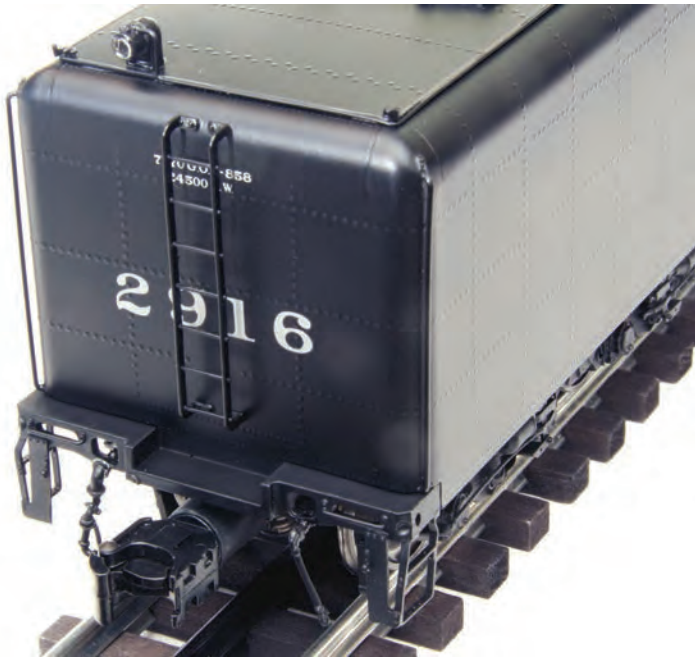
At the End of the Run

For the brass locomotive aficionado or the modeler of mid-20th-century Santa Fe, a Class 2900 from 3rd Rail could prove quite interesting and enjoyable. It's big and powerful as was its prototype. And on the display shelf, I found the 1:48 scale Santa Fe 2916 to be an unusually appealing and handsome model. 

Santa Fe Class 2900 4-8-4

Retail price: \$1,399.95 at 3rd Rail or 3rd Rail dealers

800-373-7245; www.3rdrail.com



3rd Rail Santa Fe 4-8-4 TMCC Performance

(smoke unit: off; sound: on; speed control: on)

Length: 31" over couplers; 30-1/2" pilot to tender sill

Distance Between Locomotive Pickup Rollers: 5-1/8"

Distance Between Tender Pickup Rollers: 4-9/16"

Weight on Driving Wheels: 8 lbs, 2 oz

Tender Weight: 3 lbs, 8 oz

Power Consumption at Idle @ 18 VAC: 0.3 A, 5 W

Tractive Effort @ 18 VAC: 3 lbs, 4 oz @ 3.8 A, 68 W

Minimum Sustained Speed @ 18 VAC: 1 scale mph @ 0.7 A, 13 W

Maximum Tested Speed @ 18 VAC: 60 scale mph @ 1.8 A, 32 W

Test Train

15-car mixed freight; train weight 13 lbs; pull to move train 7 oz; recent-production O scale cars from various manufacturers

