ROSE CITY GARDEN RAILWAY SOCIETY

NEWSLETTER

See our Web page at http://www.rcgrs.com/

October 2006

Message from the Newsletter Editor

Allan R. Warrior

September has been a spectacular month for our summer activities. As a result, this month's newsletter would be too large for some people to download from the internet if I were to publish all of the material in one document. There will be an **October Special Edition Newsletter** published before October 15th. **Make sure I have any additional articles and club news for this Special Addition by October 10th.**

Glen & Judy Wadley's Open House

It was a beautiful day at Glen and Judy's open house on August 26th. Their house overlooks Tillamook Bay and Glen's Southern Pacific railroad has expanded to one of the larger layouts in our Society. In addition to an outdoor railroad, Glen has installed tracks in part of the basement so that he can run trains in bad weather. The indoor tracks are connected to the outdoor layout and also provide storage and space for train preparation.

Part of the switch yard. A main source of revenue for this railroad is the transportation of petroleum products.

New this year is the bulk oil plant

There are three water features on or adjacent to the layout. The concrete viaduct was one of the first constructs at the beginning of the railroad and the gazebo is new.

The evening commute begins as the railcar glides past the light house and onto the viaduct.

Glen works to fix a froward switch. (We all know this type of switch— often called a "company switch" which has worked perfectly for the past several hours until the guests arrive.)

A new stockyard is expanding the railroad's revenue base.

A pair of NW2s and a calf pull a freight train across the viaduct. The koi in this pond seem to have learned to dive deep when the raccoons come calling.

General Electric Diesels

What is a big steam locomotive doing in an article about diesels? A little history to explain why the Union Pacific has always had a demand for very large and powerful locomotives. The route from Omaha through Nebraska, Wyoming, and the demanding 1.14% grade over the Wasatch Mountains to Ogden, Utah requires both speed and power.

UNION PACIFIC RR - BIG BOY

During the late 1930s, the Union Pacific often used helpers to move trains from Ogden through the Wasatch. The UP wanted to simplify this move so they asked their "Department of Research and Mechanical Standards" to design a locomotive that could pull a 3600 ton train unassisted over the 1.14% grade of the Wasatch.

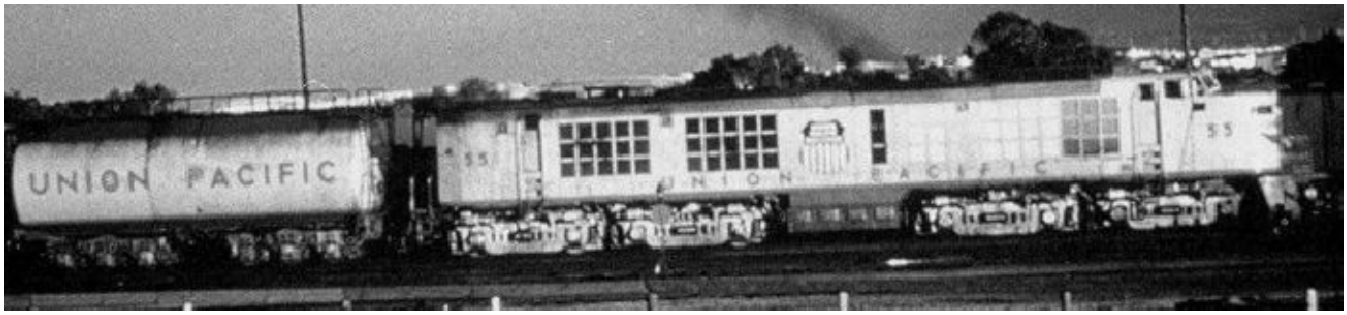
The designers determined that to pull a 3600 ton train, a tractive effort of 135,000 lbs would be needed. Assuming a factor of adhesion of 4.0, the weight on drivers would have to be 4.0 x 135,000 = 540,000 lbs. Given an axle loading of 67,500 lbs each, this would require 8 drivers or an x–8–8–x wheel arrangement. The designers agreed upon the 4–8–8–4 design. Next, the horsepower and cylinder sizes were computed based on 300 psi boiler pressure. Although they weren't planning to pull these freight trains at 80 mph, the DoRMS designed them for 80 mph in order to have a sufficient factor of safety built into the design. What resulted is considered by many to be the most successful articulated steam locomotive ever built. No. 4000 was delivered to Omaha at 6:00 p.m. on September 5, 1941. Between 1941 and 1944, 25 of these specialty locomotives were delivered to the UP for use on the route between Omaha and Ogden.

NOTE: Periodically, The Big Boy is referred to as a "Mallet". Technically, this is not true. Anatole Mallet designed his steam locomotive that 1) was articulated, and 2) used compound expansion (high and low pressure cylinders). The Big Boys, as well as many other articulated steam locomotives, used simple expansion, and thus, are not true mallets.

The Gas Turbines

Union Pacific needed a locomotive to replace the "Big Boys" and became the only railroad in the United States to own and operate gas turbine locomotives. The turbine, rather than an internal combustion diesel engine, drove an alternator/generator to supply electricity to electric motors mounted on the axles. Union Pacific's gas turbine fleet totalled 55 locomotives.

The first turbine, No. 50, was built by ALCO–GE in 1948 and was tested extensively on the UP in 1949. Although it was painted in Union Pacific colors, the railroad never owned No. 50, but it paved the way for the GE turbine fleet which followed. The first ten UP turbines, Nos. 51–60, packing 4,500 horsepower each, were delivered to UP by General Electric in 1952. Fifteen more of these units were ordered in 1954 and numbered 61–75. Thirty units of a larger model, numbered 1–30, were delivered between 1958 and 1961. With a hefty 8,500 horsepower apiece, the last 30 units were the largest locomotives ever built.



UP "Big Blow" No. 55

The turbine fleet pulled freight trains between Council Bluffs, IA and Ogden, UT. Although tested on the Salt Lake City to Los Angeles run, their tre-

mendous noise quickly made them unpopular in California. The locomotives were nicknamed “Big Blows” for their deafening jet engine exhaust noise. The huge locomotives, with their big appetite for bunker C fuel oil, eventually fell victim to the more efficient diesels, and in 1970 the last turbine was removed from service.

Union Pacific also experimented with a steam turbine in 1939 and a coal–fired turbine in 1962. Neither locomotive, however, was successful.

The first diesel replacement for the gas turbines was the 1963 GE U50 series described in last month’s newsletter. The 1965 EMD DD35A and the 1969 DD40AX were the next replacements.

Dash 7 Series (1977–1984)

The next models after the Universal series (”U–boats”) was the Dash 7 Series. The B30–7 and the C30–7 were manufactured as either 4–axle or 6–axle locomotives. There are several variants as requested by the railroads. These locomotives were available with either a V–16 or a V–12 Cooper–Bessemer diesel. Both diesel engines produced 3000 hp.

Dash 8 Series (1984–1989)

The GE Dash 8–40B and the Dash 8–40C were manufactured as 4–axle and 6–axle diesel locomotives built by GE Transportation Systems in the late 1980s. This locomotive model is sometimes referred to as a C40–8. or simply “Dash 8”. This model was built in several variants including a passenger locomotive for Amtrak. It was available with a V–16 (4100 hp) or a V–12 (3200 hp). Most of the models built were the 6–axle Dash 8–40C variants.

The AC4400 (4000 hp) and the AC6000 (6000 hp) were similar in appearance to the Dash 8 series but were equipped with AC traction motors. The AC6000 has a much larger radiator shell extending over the rear of the locomotive.

GE C40–8. or simply “Dash 8”

Dash 9 Series (1998–2005)

The GE Dash 9–40CW is a 4,000 hp (2,980 kW) diesel locomotive built by GE. It is also known as the C40–9W or “Dash 9”. The primary buyer of this locomotive has been Norfolk Southern. Their reasoning is that a slightly less powerful locomotive can still perform the same tasks but will put less stress on its components and thus will require less maintenance. The Dash 9 was only built with 6–axle trucks and uses AC traction motors.

The Dash 9 is limited to a primary crew of just 2, an engineer and conductor; trainees and/or brakemen must ride in a very cramped seat behind the conductor. Because of more stringent emissions requirements that came into effect in the United States on January 1, 2005, the Dash 9–40CW has been replaced by the Evolution series

GE Dash 9

Evolution Series

Beginning on January 1, 2005, all locomotives manufactured for use in the U.S. had to meet the EPA Tier II emission standards for diesels. GE began manufacture in January 2005 of its new Evolution Series after six years of development. The new locomotive meets the EPA Tier II emission standards for diesels. More than 1200 locomotives have been delivered.

The new GEVO 12–cylinder diesel engine produces the same 4,400 horsepower as its 16–cylinder predecessor. It accomplishes this feat using 3 to 5% less fuel, and decreasing emissions by 40%.

GE C45AC–CTE Evolution Locomotive with the GEVO 12–cylinder diesel engine

Just Another Day's Work On The Railroad

By Jan Zweerts

My Friday, most people's Wednesday, started at 0400 as the alarm clock went off after too little sleep. Once at work Skip, my conductor, and I checked out our track warrants and other paperwork. The night crew on the Albany Hauler went dead on the hours of service law in nearby Tigard, so we got a ride in a company rig from Bo, one of our supervisors, to our train tied down on the main inside yard limits.

Twelve loads on the rear and 30 empties in front with 2 locomotives was our starting consist. We set out some cars off the head end at Tigard Siding and advanced 4 miles to Beberg Siding and picked up some cars to be delivered to the Port of Tillamook Bay Railroad (PORT) in Banks 19 miles away. After doing an air test on the pick up, I accelerated the train to track speed (25 mph) though downtown Beaverton, slowed down in St. Mary's yard limits and then sped up for the roller coaster run to Hillsboro 6 miles away.

Running downhill from 185th Street, one of many gated crossings, I saw on the next crossing a school bus with a large straight truck just behind it. They were waiting for the traffic lights to automatically turn green for them when the railroad crossing circuit is tripped by an oncoming train. The bus moved on but the truck was trapped by traffic on the tracks. I set air into the train 1000 feet away to start the braking process. The drivers door opened up and we could see legs running towards the rear of the truck.

Thinking that the driver was abandoning his truck, which was a bulls eye for the train, I dumped the air throwing the train into emergency. The train stopped 2 RR car lengths away from the crossing with a nice solid thump on the rear as the 12 loads on the rear ran into the rest of the train. The driver of the truck got cars behind him to back up allowing the truck to back off the crossing. After the train had stopped traffic started moving again as the gates came up and the truck drove off unscathed. We however had to inspect our train in case any wheels had jumped the rails. Skip set off on foot to check 3000 feet of train, he came back quicker than I expected, as he got a ride from a fellow employee driving nearby.

The rest of the day went smoother as we ran around our train at Banks, ran to Linnton in North Portland, over the United Railway District, through a 4100 foot tunnel, down a 5 mile grade at Cornelius Pass. At Harbor Siding the Linnton Day Switcher met our train and pulled it away after we got inside the Harbor Siding. I coupled into our outbound train, swapped ends and after the Linnton Switcher had

cleared, pulled out onto the main and backed as far as we could safely and did an air test.

Editor's Note: I have often passed by that tunnel and wondered where it went. It must be a pretty severe grade since the highway grade is fairly steep and makes a few switchbacks in climbing the three miles to Cornelius Pass summit.

After the conductor, Skip, finished the air test on about 2700 feet we returned back uphill, the tunnel, and Banks. Checking the PORT radio frequency we knew that the PORT was in Banks with a train they had pulled from Tillamook over the Coast Range on 3% grades.

A nice mess in Banks with two long trains meeting and no good places to park railcars. Banks has two main tracks parallel to each other with three crossover switch's. We cut off our train at the middle crossover and ran light engine down to the Banks Lumber Mill to pull the wood chip track. Meanwhile the PORT with four elderly SD 9 engines was working the Banks Lumber Board track. With coordinated moves, both crews sawed cuts of cars back and forth as we interchanged railcars between us. The 4-ganged SD 9's shot 4 plumes of diesel smoke into the air on every move. Bells clanged, whistle signals were given in order to warn mill workers on shift change of the back and forth movements on the railroads.

We finally got our train out of Banks and back to St. Mary's to tie up and let the next crew take the train south to Albany. Just another day on the railroad.

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Schedules & Timetables

Make sure you check the calendar on our Website at **http://www.rcgrs.com/** for the most up-to-date schedules and timetables.

October 14, 2006, Saturday, 4 - 9 p.m.: Open House at Shannon and Millie Pratt's home, 6677 SW Bancroft Way, Portland, OR, 503-292-9464.

Soft drinks will be provided. Pot Luck: B to D dessert, E to M main dish, N to Z side dish.

Shannon's railway is Marklin Gauge #1 and uses track power. The railway is in two large L-shape loops. Shannon states that the flanges on the wheels of most other manufacturers (LGB, Aristocraft, USA Trains) are too deep and usually will not operated correctly on Marklin Track.

October 28, 2006, Saturday, 4 - 9 p.m.: Open house at Allan & Kathryn Warrior's. Halloween trains and night themes.

November 11, 2006, Saturday, 4:00 p.m. until 10:00 p.m. RCGRS Annual Banquet. Carolyn Rose, Penny Walker and Barbara Clark are in charge of the details.

December 8, 2006, Friday: Open house at Jan and Rae Zweerts'. (Christmas Ships)

Editor's Note: The deadline for the November newsletter is October 25, 2006.