

# SHORT LINE

Sierra Division \* Pacific Coast Region \* National Model Railroad Association



The  
**World's  
Greatest  
Hobby!**

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## KEYSTONE RUN

by Mike McReynolds—Steam Engineer

It is the fulfillment of a childhood dream. I am sitting in the engineer's seat of a 72 ton, 1922 Baldwin steam locomotive. Engine #28 simmers quietly in the afternoon sun. The low rumble of the burner in the firebox is only interrupted by the occasional THUMP, THUMP, THUMP of the air compressor keeping the brake pipe charged to 90 psi.

It is hot in the cab. On a day like this, the temperature can reach 130 degrees. I am soaked with sweat and loving every minute. I am one of a handful of people in this country qualified to run a steam locomotive in passenger service. My fireman, who is responsible for keeping water in the boiler and the steam pressure hovering around 180 psi, is relaxing on the left side of the cab and I am watching the conductor shepherd the last of the passengers on board. In anticipation of his imminent signal, I close the headlight switch, turn on the steam lubricator and pull the Johnson bar back into my lap.

We will be running in reverse the first half of the trip.

The conductor has the stragglers on board and takes a last look up and down the train for anything in the way. Satisfied, he turns toward me and raises his arm in a sweeping wave. "Highball!" I call to the fireman. He responds with, "All clear on this side." I repeat the all clear, give the whistle rope three short tugs, slap the brake handle into RELEASE and pull back gently on the throttle.

#28 slowly comes to life. Steam hisses from the open cylinder cocks; blowing a mist of water into the air.

Keystone Run | Page 4



End of the day at Jamestown. Mike McReynolds photo.

Follow this link for the expanded digital color issue of the Short Line:  
<http://www.pcnmra.org/sierra/index.html>

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(775) 883-0486

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bership problems,

### SHORT LINE

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be in Rich Text Format (RTF),  
with photos as JPEGs, but we  
will accept any format (from a  
PC or Mac; MS Word, Simple  
Text, typed, or handwritten).  
Send it to your editor by regu-  
lar mail to **SHORT  
LINE**, 6601 Ray Family  
Lane, Magalia, CA 95954 or by  
email to [gerber1926@gmail.com](mailto:gerber1926@gmail.com).

If e-mailing put EDITOR in the  
subject line.

## From the Superintendent

This is going to be a short report. My computer crashed yesterday and I lost all my files. We are having our **Summer Picnic at the Sacramento Valley Live Steamers on August 4, 2012**. They will be running their trains for us to ride and enjoy. They are located at Hagan Communities Park. We will be cooking hamburgers and have potato salad. We will start at 11 AM and eat about noon. **We will have our Laser Kit Modeling Contest. This is where we will bring the laser kits that we got at the last Division Meet and see how everyone built them.** They have a web site where you can get more information and a map with directions at <http://www.svls.org/> Their address is 2197 Chase Drive, Rancho Cordova, CA 95670. **Please RSVP if you are attending the meet so we know how much food to buy.**

We will also have nominations for Sierra Division officers. The Superintendent, Chief Clerk and Paymaster positions are up for nominations. The election will be at the October Division Meet. I will not be running for reelection as Superintendent so someone has to step and run for this position.

Jim Long  
530-676-1798

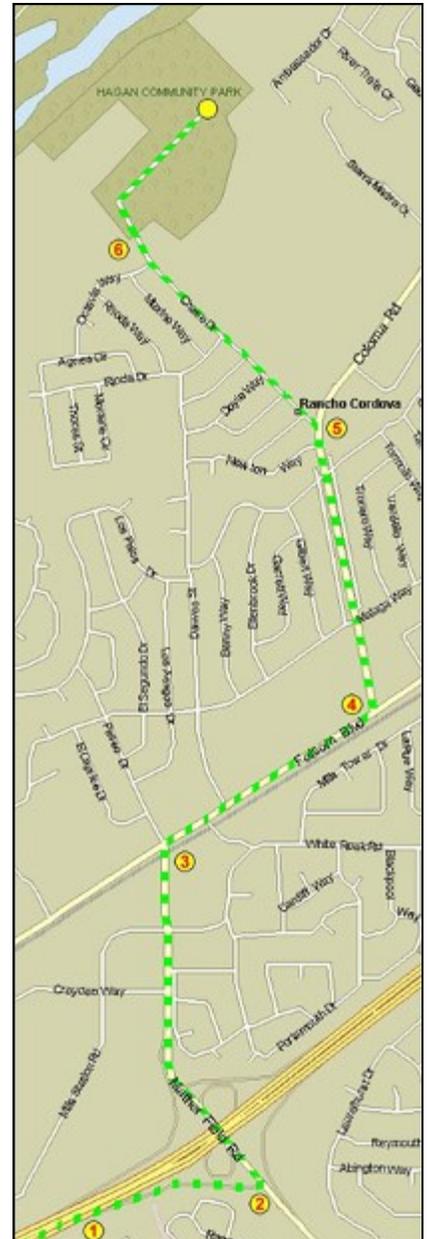
[jimclong@sbcglobal.net](mailto:jimclong@sbcglobal.net)



# AUG. 4th

#### From Sacramento:

- 1 Take Highway 50 East toward Lake Tahoe and exit at the Mather Field Road exit.
  - 2 At the traffic light, turn left onto Mather Field Road.
  - 3 From Mather Field Road, turn right on Folsom Blvd.
  - 4 From Folsom Blvd, turn left on Coloma Road.
  - 5 From Coloma Road, turn left on Chase Drive.
  - 6 Chase Drive goes directly into Hagan Community Park. Follow the park road to the end. Our facility is at the rear of the park, behind the petting barn.
- SVLSRM (Sacramento Valley Live Steamers Railroad Museum)



# From the Editor

I am pleased to report that over seventy-five members have signed up to receive only digital editions of the **Short Line**. There has been an interesting discussion among the NMRA regional and division newsletters about going digital. Some divisions offer only digital editions, others only print, some both. Some regions charge members if they want a printed copy.

I am hopeful that more members will switch to the digital issue only but realize there are reasons some don't. For some, computer or internet access is a problem. Others may find it difficult to read from a computer monitor for a long time or they can't take a computer into the bathroom! Some feel that division meets are better attended with a printed copy.

On the other hand, our digital version is longer and in color. Due to the length the Resistance Soldering article, it was necessary to carry it over into the digital edition. As far as meets go, our division should continue to work on the sharing of knowledge with more experienced members coming forward to pre-

sent workshops. Contact our Superintendent to volunteer.

Our division is fortunate to have the **International Railfair** each November as a fund raiser. The Short Line is our major expense each year, costing between \$8 to \$10 per member (depending on printing costs). **If you enjoy the digital version and haven't already asked to be taken off the printed subscription list and would like to do so, send me an email.**

## CONTENT WANTED

Editor wishes to add "HOW TO" more modeling content, **PROTOTYPE INFORMATION**, or **INDIVIDUAL LAYOUT ARTICLES** to the newsletter. If you have an idea or know of a website with a great idea, please **PASS IT ALONG IMMEDIATELY!**

[gerber1926@gmail.com](mailto:gerber1926@gmail.com)

Many thanks to **Mike McReynolds, Dave Musatti, and Glenn Edmison** for taking the time to share their excellent articles and photos in this issue.

## *Sierra Division Meet—May 12th by Gary Ray*

Almost thirty members attended the meet in Folsom on May 12.

**Dick Witzens** presented: "35 Years on the Sacramento Central." He has been part of the club for thirty-seven years. . The club has some unique ways of setting up and operating their layout that can grow to 25' x 60' and beyond. The club owns the 36' of yard modules, corners, and two reversing loops so now critical modules are missing when they meet.



**Dick Witzens**

Club owned modules are transported in the club trailer. Member's 15-20 pound modules are jig built several at a time and then given to members as they are needed. It takes about two hours to set up a layout and only forty-five minutes to take it down. Each day 15 to 20 trains are run. Members wrote their own switch list program and a computer generates switch lists for the modules used on any given day allowing the railroad to be operated in a prototypical fashion. The club does several operating sessions in addition to public sessions each year. Don't have room for a large layout, want to share or gain

**Meet | Page 6**

## Keystone Run FROM PAGE 1

Almost imperceptively, the wheels start to turn. The conductor gives another wave, "All moving!" and swings aboard the train.

Once we're moving, I close the cylinder cocks and make a running brake test. A tug against the drawbar tells me



the brakes are working. I release the air and settle in for the run to Keystone.

Just out of the yard is our first road crossing. I start blowing the whistle: 2 longs, 1 short and 1 long, the standard signal

### Westbound—running stupid.

Mike McReynolds photo.

for a crossing. The noise is deafening. Across the cab, the fireman gives me a quick wave indicating the crossing is clear on his side of the railroad. Looking back at the tender, I cannot see his side of the right of way and the whistle makes it impossible to talk.

The train rolls gently downhill toward Woods Creek Canyon, dragging the brakes to prevent a runaway on this grade. Occasionally, as we snake around the curves in the canyon, we can see a deer or Bobcat that has come to drink in the creek. The wheels squeal in protest as the brake shoes heat up in the battle against gravity.



Mike McReynolds headed down the canyon.

Paul Neidhamer photo.

At the lower end of the canyon we cross Woods Creek and start the short climb past Hatler's Quarry. We top Hatler's and start the roller coaster section to Deadman's Curve at the Caltrans yard. A short, hard pull puts us at the top of Montezuma grade where I make an immediate brake application over a short section of rough track that rocks the cars back and forth like a carnival ride.

We drift down Montezuma surrounded by pastures full of cattle and horses. The whistle at two private crossings turn the grazing cattle into a stampede for a short distance. Crossing Highway 49, we glide around a sweeping curve to Snyder's Lumber Mill. The railcar chip loader has covered the rails with woodchips from the Mill. I slow to a crawl as we plow through the blanket of chips. Clear of the Mill, I start picking up speed for the longest, toughest pull of the trip; Chinese Hill. This is a long train and I am a little anxious about making the hill without stalling. The throttle is wide open now. The exhaust sounds like shotgun blasts echoing off the hills, deafening the fireman and me. Any communication is done with hand signals. The train slows as gravity goes to work in earnest. I feel the engine stumble and slip just a little. Instantly I shove the throttle closed to stop the slip and hit the sanders to give us some extra traction, then back out on the throttle. The wheels grab hold and we pick up speed as we pass Quinn Siding at the top of the hill. We made it! I break out in a big grin. This hill is a test for man and machine, and we passed!

Over the summit, I set brakes again for the long winding drop through the Red Hills. One highlight is going by the movie set for Back to the Future III. The Hill Valley Depot glides by and in a few minutes we round the curve that puts us parallel to Highway 108. Motorists honk and wave with delight at this vision from the past slowly chugging along beside them. Many pull over and grab cameras for a quick snapshot as we pass.

More roller coaster as we pass the National Guard bivouac site. Several times a year there are dozens of men in uniform here conducting training exercises. They always get a kick out of our passing as passengers shout and wave to them. One more small hill, another curve, and here we are; Keystone! Watching the conductor's signals, I ease the train to a stop. He walks up to uncouple the engine so we can run around the train and pull it back to town from the other end. We tiptoe gently down the dilapidated siding, the engine rocking like a ship in rough water. As we pass, the passengers all smile and wave.

Once on the train again, we make a brake test and it is time to go. "Highball!" I call out at the conductor's signal, "Let's rock & roll." The fireman grins, because he



**Headed for Jamestown.**

Paul Neidhamer photo.

knows that means we are running late and will be trying to make up some time. I blow the whistle, release the brakes and we're off! Heading back, the engine is coupled next to the open mountain observation car. Looking back, I see Roberta walking through the car in her Car Host uniform. I catch her eye and raise my gloved hand in the deaf sign for "I

Love You." She returns the signal and I see several passengers watching this exchange. She starts explaining it to them and I know shortly, she will be telling the story of our wedding complete with pictures, in the cab of this locomotive several years ago. That was a memorable day!

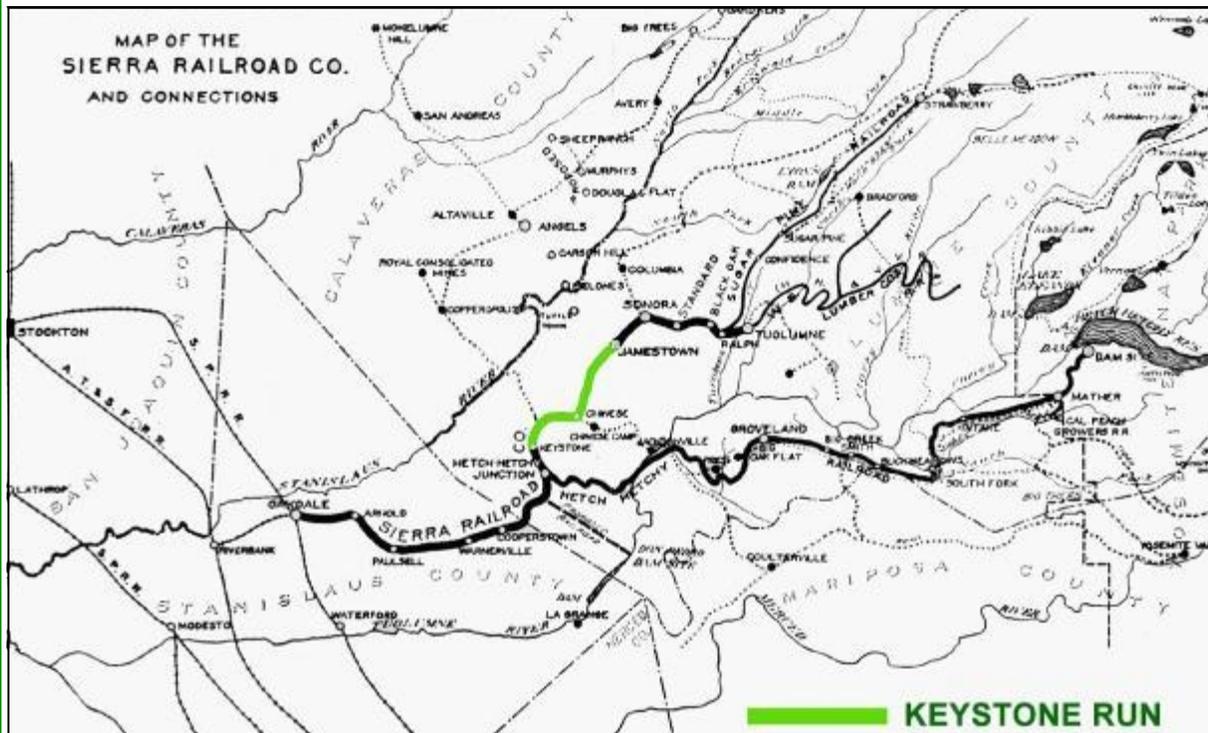
The trip back is uneventful. The sun is going down and the outside air is cooler now, making it almost livable in the cab. Going back up Montezuma hill, the engine casts a long shadow that dances through the pasture grass. Watching this and listening to the steady chuff of the engine I can almost forget this is the 20th century. It is almost dark as we roll into Jamestown. I make a gen-

tle stop at the depot and the conductor cuts us loose for the trip to the roundhouse. The hand lanterns of the conductor and brakeman passing signals, look like fireflies doing aerobatics in the deepening twilight. We stop at the water tank on the way. The fireman pulls the spout down to the tender hatch and 1500 gallons of water pour into the tender. The cool spray feels good on my hot skin.

Moving down to the turntable, we see quite a few passengers have come down to watch us put the engine away. I ease the loco onto the turntable and we swing it around to the proper stall. I spot the engine under the smoke Jack in the roundhouse, throw a chain around one of the drivers to keep it in place and shut down the engine. The fuel valve on the tender is closed and the fire sputters out. We close all the steam valves in the cab to try and keep enough pressure in the boiler to start up tomorrow morning. Finally, with everything secured, we climb down and head for the barbecue dinner out on the lawn.

At the roundhouse door a small boy stands with his parents, watching us approach. I stop and ask if he would like to see inside the engine. His eyes light up and so I take him and his parents for a quick tour. He sits in my seat and listens as I explain the controls. "Is it fun?" he asks. I answer, "You bet it is!" As we walk out of the roundhouse, I can almost hear his thoughts, "I am going to be an engineer someday." I know, because I recognize the look on his face. Man, I love this job!

Mike was running #28 out of Raitown 1897 back in November, 2004. He was working for M&ET during the week and volunteering at the park on weekends. Currently #28 is at Raitown with a damaged crown sheet awaiting repairs.



This is Mike's third article to appear in recent Short Line publications.

Consider joining Mike in becoming a Short Line author.

-ed.



skills with others, meet new friends—a great club to consider joining. Dues are \$30 a year. More info can be found at [saccentral.railfan.net](http://saccentral.railfan.net).

The **Sacramento Central Railroad** was set up in our meeting room. Nearby the **European Train Enthusiasts** and the **Northern California Narrow Gaugers** had modular displays. Outside there were speeder and streetcar rides along with other displays and music.

Mary presented Sierra Division Superintendent **Jim Long** the Sierra Division Member of the Year Award. **Mel Jones** is the new PCR Director, taking over from **Mary Moore-Campagna** who reached her term limits. Three lucky attendees won door prizes and Yard Office Kits were handed out for our Build and/or Modify Yard Office laser kit project. Forty-four members are participating and will be sharing their work in August. **Jim Dieckman** has volunteered to be our representative on the **International Railfair** planning committee.



Jim Long ~ Member of the Year!



The California State Railroad Museum had this 1931 Ford Model AA Fire Truck on display. This 4 cylinder, 40 hp fire truck was operated by the San Diego & Eastern Railway as MW 1003. It had the ability to refill it's tanks at trackside water tanks and was in service for almost 50 years.



One of the many modules on the Sacramento Central Railroad.



Al Rowe demonstrates an experimental two-sided scenery module developed for Sacramento Central Railroad.



Above: European Train Enthusiasts module.

Below: Generator powers #35 for rides.



Klaus Keil, member of the European Train Enthusiasts, presents a slide show about German streetcars.



The Sierra Division May meet even had live music and speeder rides (for a fee).



# Making a Low-Cost Resistance Solderer

by Glenn Edmison

## Typical Soldering:

An object of some mass is heated. Touching this hot object to another - to be soldered - transfers heat to the other until it is hot enough to melt solder. The hot object is removed and the second, with its solder, cools until the solder freezes.

## Resistance Soldering.

Two objects of little mass are touched to another - to be soldered. Electric current is passed through the other object creating heat within it until it will melt solder. The electric current is turned off. The heat dissipates quickly freezing the solder.

## Comparisons:

Traditional soldering uses great amounts of energy to create the heat but uses very little in the actual soldering process. The electrical energy continues to be used between soldering tasks. Resistance soldering uses only a small amount of energy for a very short period of time and none in between soldering tasks.

Traditional soldering requires heating two objects - the heat source and the soldered objects. Resistance soldering generates heat only in the portion of the objects to be soldered. It is evident that resistance soldering is much more **energy efficient**.

## Developing an Inexpensive Resistance Soldering Unit:

Several years ago, at my local club, I was installing track for the log-loading area of a new logging division. I needed a three-way switch. Ready-mades are expensive, and, as always, we were working on a shoestring. Our club leader suggested that I hand lay it. I was a new modeler, and up to that point had used only ready-made flex track and turnouts. The idea intrigued me, so I did a little research and laid out a pattern. I gathered up my meager set of tools and set to work.

The biggest problem, I found, was using a regular soldering iron while holding everything in place, and getting a joint while not melting everything nearby. I got it done. It didn't look too bad. And I had only melted a couple of ties a little bit. But when I tried running cars over the switch, they kept derailing. Not good.

Frustrated, I again talked with my fearless leader. He suggested that I use a resistance soldering unit that was owned by the club, stating that I would have an easier time and better joints. He was right. This time the three-way turnout worked and I was hooked. The heating was quick - almost instantaneous. The cooling was almost immediate. I didn't melt anything that wasn't intended. I really liked resistance soldering. If I ever hand laid another turnout, I would most certainly want to use one.

Some years later I was working on my AP requirements for Model Railroad Engineer and had to hand lay three turnouts. But at that time I no

longer had access to that fine soldering unit. What to do? Armed with the knowledge I had acquired in my earlier experience, I toughed it out and got the job done with a regular soldering unit, mostly because I was working with wooden ties, and most solder joints were rela-



tively far apart. More than ever, I wished for a resistance unit.

This is a picture of The **American Beauty** brand of resistance solderer like the one I used. It is sold by Micro Mark. It is a wonderful tool. It is durable and likely would last a careful user for a lifetime. However, the basic unit is listed at \$490 discounted at Micro Mark to \$397. A similar unit from **Hot Tip** is \$615. For only occasion-

## SIERRA DIVISION

Next Meeting: Saturday, August 4

Place: Sacramento Valley Live Steamers

2197 Chase Drive

Rancho Cordova, CA

Time: 10:30 AM to 4:00 PM

### TIMETABLE UPCOMING MEETS

August 4

October 8

### SHORT LINE DEADLINES

Sept. 7 for the October issue

Jan. 4 for the Feb. issue

March 8 for the April issue



**Don't forget to bring your completed North Eastern Scale Models Yard Storage to the August meet on send the editor a picture or jpeg of your finished model.**

Jean Oriol, owner of North Eastern Scale Models in Chico, CA, is looking for ideas for new laser cut industrial models. **Here is a chance to get your favorite industrial model made.** Jean needs

either blueprints or pictures of all four sides. If he produces the model from information you shared, you will be given two laser-cut kits. Contact at [jean@nesm.com](mailto:jean@nesm.com) or call 1-800-840-0028.

Besides doing laser cutting for his own kits, Jean does it for **Geroge Sellios' Fine Scale Models** and others.

Photo courtesy North Eastern Scale Models



# Picture Gallery

Each month I'd like to have a few pictures to share with members. **Dave Mussatti** has sent a package of photos waiting to be scanned and as I went to press, a software glitch prevented me from scanning them as I went to press. Look for them in the next issue. Hopefully others will share—jpegs or actual photos (which will be returned).

Here are two of my photos taken at the **Portola Railroad Museum**. - ed.

# Siskiyou Summit Report ~ Joint PCR/PNR Convention May 2-5 Medford, OR

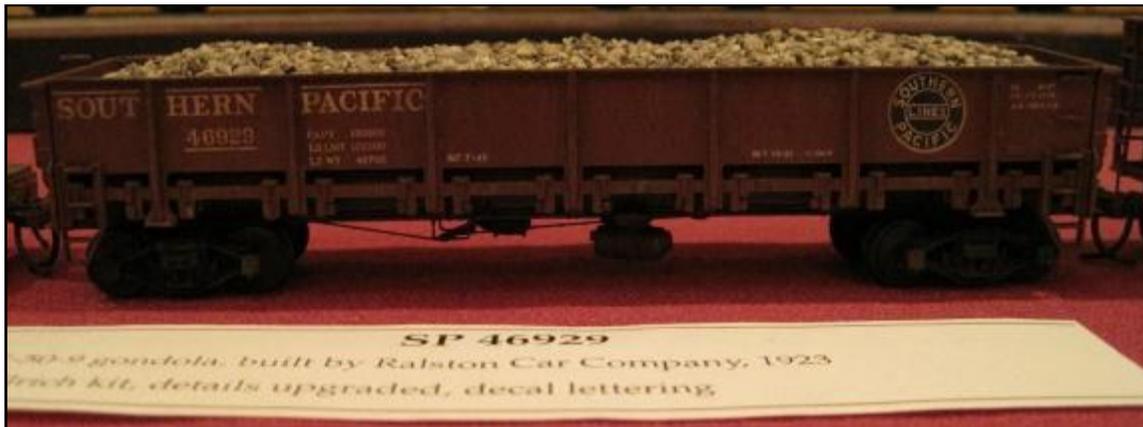
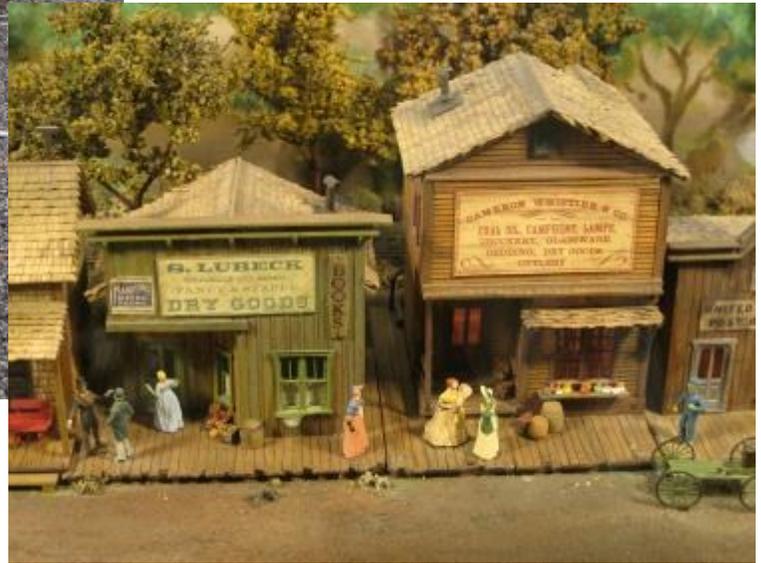


Pictures and articles on the PCR convention starts on page 15 of the Digital Short Line. Tours, sessions, contests and clinics are covered.

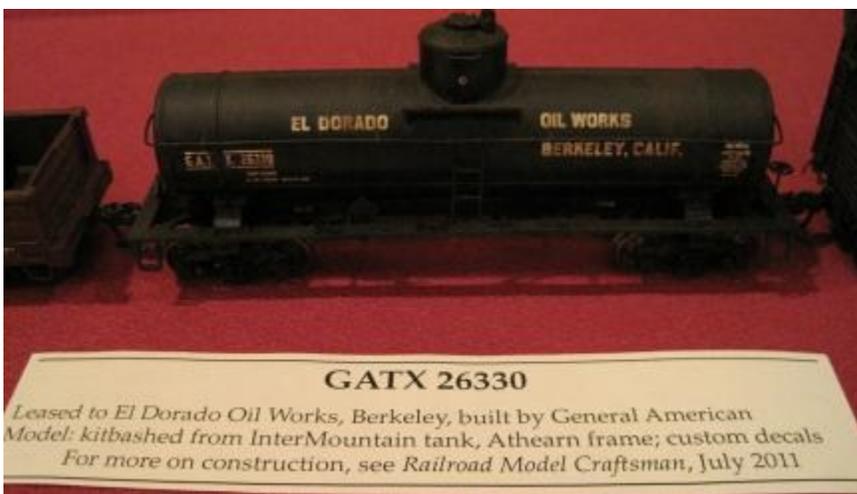
**Siskiyou Summit Report | Page 15**

Above: **One of three trains ridden at Train Mountain.**

Right: **Contest diorama.**



More models from the Contest Room.



**GATX 26330**

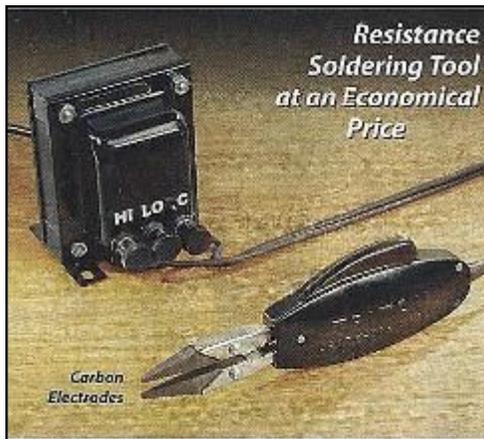
Leased to El Dorado Oil Works, Berkeley, built by General American Model; kitbashed from InterMountain tank, Athearn frame; custom decals  
For more on construction, see *Railroad Model Craftsman*, July 2011

**QUON'S QUARRY SUPPLY**  
CRUSHED ROCK - GRAVEL - SAND

## Resistance Solderer FROM PAGE 8

al use, I find that a bit expensive. It's true. I am of Scottish ancestry, and I am "keerful" of my money. But sometime, I thought, I will have one.

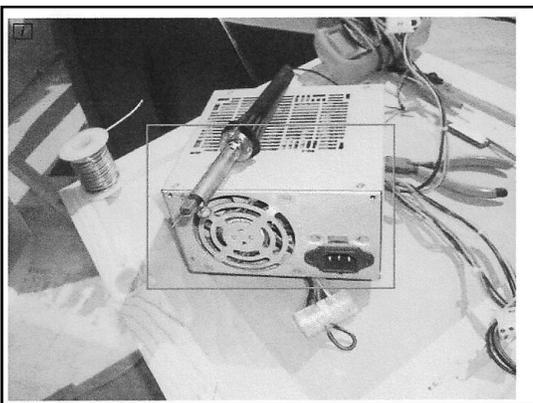
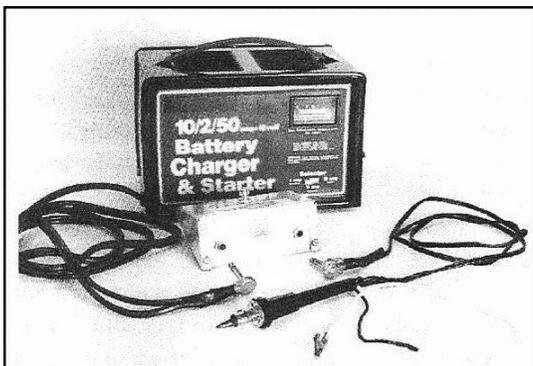
Now I am working on a scratch-built model of Beyer-Peacock Garratt steam locomotive. There



are many small parts needing soldering and often close together. More than ever I have wished for that type of tool. I wondered if there was not a less expensive

solution to my needs. Now I am retired, so I have

a bit more time to check this out. I went to the internet and found that a number of others have been down this path before me. There are a number of articles on the internet detailing



how they did it.

One of the reported projects used a step-down power transformer with outputs of 5 to 10 amps AC. (That is what I use; purchased many years ago. Works great. -ed.)

A second project used a batter charger with an output of 10 amps DC.

A third project used a salvaged computer power supply with an output of 6 amps DC.

Some use transformed AC current. Some use regulated DC current. Did it make a difference? Apparently not. The determining factor seems to be the wattage output. The projects reported had between 50 and 100 watts output. For example,

$$\text{Volt} \times \text{Amps} = \text{Watts} \quad 10 \text{ volts} \times 5 \text{ amps} = 50 \text{ watts}$$

$$10 \text{ volts} \times 10 \text{ amps} = 100 \text{ watts}$$

$$5 \text{ volts} \times 15 \text{ amps} = 75 \text{ watts}$$

*Etc.*

For most of the home built units, this output is fixed. It works the same every time, so you know what to expect. That is important.

**The first device** used a battery charger that I already had, although a new one was about \$50.



I just connected the charging leads to a home-made hand piece, applied it to my brass pieces, flipped the switch, and applied the solder. It heated almost instantly, melted the solder. I flipped the switch off and it cooled quickly. Eureka!

I still had the problem of needing a way to turn the power on and off while my hands were occupied. I remembered the foot switch that came

the *American Beauty* solderer. How could I find one that I could use? The answer? An instant on-off foot switch, which had been suggested by several authors.

The source article suggested just getting a simple push button on-off switch and mount it in a homemade metal box. . About that time I got a tool catalog from Eagle Tools. They had a foot switch made for power tools that was only \$29 dollars. That seemed very reasonable, since the official switch was sold for about \$55. And I knew I could use it for many different tools.

I did find that while it worked, there were some differences from using a traditional soldering iron. The hand piece had to be in contact when the current was applied, or I got sparks. That was where the foot switch served me well. When I was all ready to solder, I just stepped on the switch. When I was done, I just raised my foot.

Another problem: If the parts were small and the amperage high, the parts to be soldered overheated or another nearby solder joint melted, or the circuit breaker tripped. The answer? Some

way to control the amount of output. A dimmer switch might work.

I bought an ordinary household wall dimmer switch. I reasoned that it was designed to control household voltage of 115 volts AC and might not work on 12 volts DC, so I wired it into the input circuit in my design. In a test run, it worked fine at about one-third setting. I got the heat I wanted, and could crank it up a little if I had a larger joint. I think the internal resistance of battery that was ordinarily the victim of the charger should be taken into account. There is relatively little resistance in my modeling joints, so I reasoned I would be well-advised to not push the apparatus too far.

**The second device.** That not being too difficult for a non-electrician, I thought I might be able to try the computer power supply device. Many older computers are scrapped. It is the digital processor that becomes obsolete, not the power supply which has remained fairly uniform over time. The article suggested visiting my local computer repair shop to find a salvaged unit. I did find one, for only \$15. That was reasonable. At first I was intimidated by the spaghetti-like mess of colored wires coming out of it. That just about put an end to the experiment. Rereading the source article, it told how to identify the important wires. They are all color coded. The article told me to look for a set of two blacks, a red and a yellow wire AHAH!



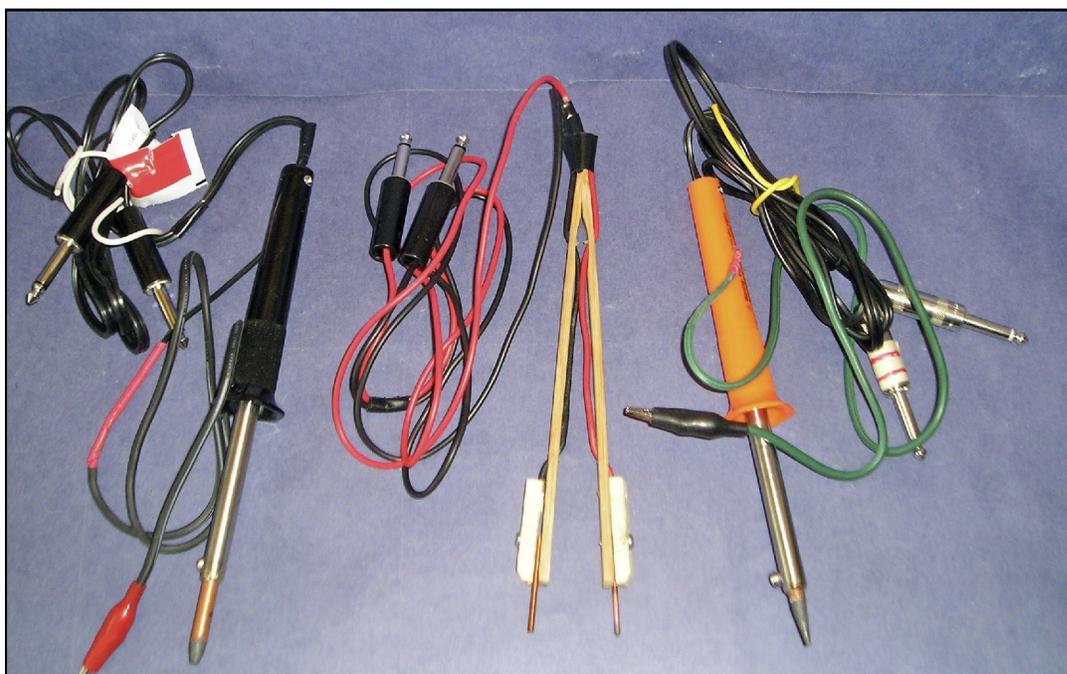
So I chose the correct set and cut off the connector that came with them. No sweat. I plugged in a salvaged computer power cord (Computers have cords with weird ends). I put probes from my multimeter into the red and yellow sockets and turned the unit on. Zounds! What is this? Nothing at all happened. But then, I remembered the article had said that most power supplies have a protection circuit that requires the black wires to be grounded to a green wire. Just make a jumper wire between them, and it should work. Easy enough, I told myself. I did as directed and again turned on the power. This time the cooling fan in the unit began to work, and I got an output reading of 10 volts and 6 amps on the meter. I still needed a quick-hands-free way to turn it on and off, but, I already had the foot switch I had purchased for the first unit. I could use it on this one, too.

Connecting my contact tool to the output leads, I tried it on a piece of brass. Good heat. The solder melted in only a few seconds. Off with the foot switch and it cooled just as rapidly. Success! Three lusty cheers!!! I had another working unit.

**The hand-pieces.** Next, I tackled the creation of suitable hand-pieces. The original and various other articles told how to make two different types. The first was a converted 30 watt soldering iron of the pencil type. This was converted to hold a single tip made from a piece of carbon arc soldering rod. A visit to a local welding shop netted me a couple for only \$1 each. That should be enough to last me for quite a while. I had to remove the heating unit from inside the tip, drill out the socket end to fit my rod, and re-wire it attaching one lead to the welding rod, and

routing the other out through the side of the handle terminated with a common electrical clip. I added 1/4 inch phono plugs to the power end of the leads with matching sockets on the power unit, in this case, both the computer power supply and the battery charger units which I had installed into a carrier box for each.

The second hand-piece was made from a simple bamboo kitchen tongs which I found at a kitchen supply store for only \$1.49. This unit simply added two wires terminated by, of all things, some salvaged pieces of drafting pencil lead.



These I had among my own tools, I created a slightly revised version of the lead holder suggested by the author, connected the hand-piece to my power supply and tried out a solder joint. It worked pretty well until I applied too much sideways pressure and the brittle tips broke. Well, the article was right again. One had to adjust the technique of making contact with the articles to be soldered so contact was a straight downward pressure. I wondered if I could find stronger tips. *Micro-Mark* advertised replacement tips for the *American Beauty* single hand-piece I remembered that these I had used before were copper clad, so should be stronger. So I ordered them. This was the single most expensive purchase I made. You get a half doz-



en for \$37. I reasoned that I could be careful, and they would last for a long time. I found they were stronger, but still required some care. They could break as well.

Here is a picture of my completed hand-pieces:

**Another method** I did think of another possibility. I have a venerable old *Weller* soldering gun that I have had for years. It is instant on and off. It uses a specialized application of resistance soldering to heat the tip by passing the current through a resistant metal tip. What would happen if I substituted the closed

### Some Internet Sources

#### Computer power supply

<http://www.instructables.com/DIY-Cold-Heat-soldering-iron/>

#### Battery charger:

<http://www.girr.org/girr/tips/tips1/solderer.pdf>

#### Transformer:

<http://slimguageguild.erikensandra.nl/soldering/soldering.htm> [http://www.geocities.ws/kammer0072000/lawrence\\_boul\\_RSU.html](http://www.geocities.ws/kammer0072000/lawrence_boul_RSU.html)

Glenn generously shared this article that he presented at the Siskiyou Summit 2012 PNR-PCR Joint Convention in Medford, Oregon. Here is a short bio from Glenn.—ed.

**I am Glenn Edmison. I hail from Bend, OR and I model in N-Scale with some side trips into HO. I do have a home layout, *The Oregon Short Line Railroad*. It is a 5 ft. X 9 ft., two-level walk around, suspended from my garage ceiling. I have belonged to a couple of HO based clubs, and do some HO modeling.**

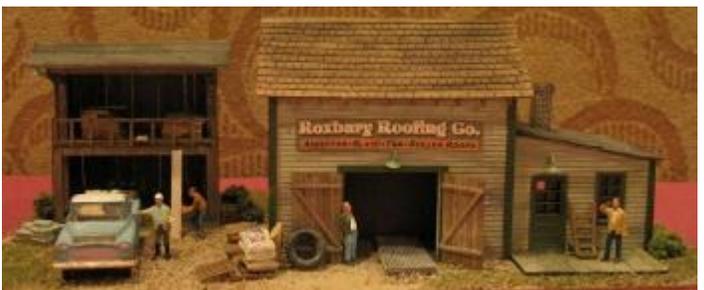
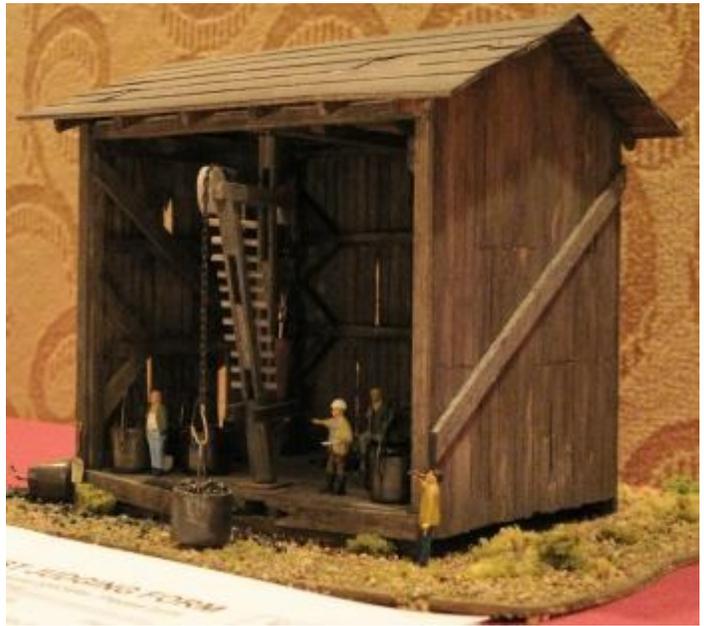
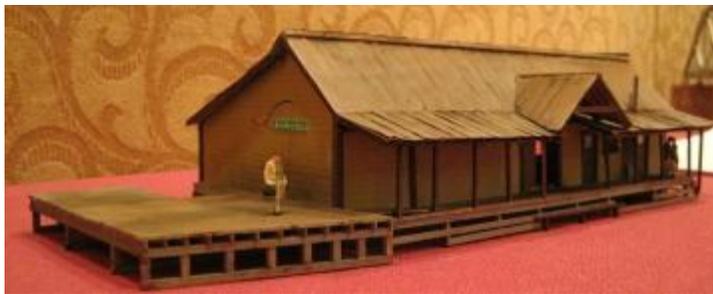
Gary Ray photo.





SANTA FE RIVERA DEPOT

LOOK AS MUCH AS YOU LIKE  
BUY IN CASE







The Rouge Valley Model RR Club opened up their layout several times during the convention for operations. Dave Spakousky explains operations to one group of visitors. To see more pictures, track plans, and other info about the club, go to: <http://rvmrc.net/>





**Sidetracks activities at Medford included making Linus blankets, Yo-Yo Wreath Christmas Ornaments, a trip to a quilt show and antique shops along with many entries in the contest room.**

**Total entries in the Contest Room were over 135. For more specific information, see the July/Sept. issue of the Branchline.**

# TRAIN MOUNTAIN

by Gary Ray

Three bus-loads of convention goers at the PCR/ PNR Convention in Medford took an all day excursion to the Chiloquin, Oregon area. This included a ride through a small portion of Train Mountain and a wonderful serve yourself buffet.



Train mountain has over 30 actual miles of 7 1/2 inch wide track on 2000 acres of forest land. Building of Train Mountain was the dream of Quentin Breen and construction began in the mid-1990's. Many others moved into the area to help with the project. Quentin had been a lawyer and also involved in real estate and cellular phones. The way I understand it, Train Mountain was to be a non-profit, but when Quentin passed away in 2009, his wife took over the facility. There have been a lot of legal disputes due to claims that the trustees have not properly managed the property. Also, the IRS denied non-profit status and is seeking almost \$14 million from the estate. The Oregon State Attorney General has stepped in to support the individual donors, volunteers and organizations that make up the supporters of the facility.

Additional track and ties are not being purchased, but remaining track is being installed. Much of the track is in the form of track panels. The newest rail is

steel rail on plastic ties. For a more detailed look at Train Mountain's history, go to: <http://www.discoverlivesteam.com/magazine/TM/TM2.htm>.

The first impression upon arrival is the immensity of the facilities. There are over three dozen "staging" tracks in a large yard and shop facilities. We drove by several full scale cars that had been obtained as part of the museum. A large building that contained a meeting area/dining room, kitchen, gift shop, bunk room, and a few motel rooms was our departure point. There were three trains waiting to take conventioners on a two-hour ride through a small portion of the property.

It had been sprinkling on and off through the day. The first train out managed to avoid the rain. The 8 mph leisurely trip through the woods was quite enjoyable. Our train passed a campground where visitors can have their equipment right where they camp. There are several cabooses on the property that eventually will be for guests to stay. It was my understanding that their were to be some home sites where members could have trackage right to their home.



**As we arrived, we drove past these engine unloading facilities. In the dining room a picture hung showing steam locomotives fired up and ready to go on each of the 28 tracks. This will give an idea of the immensity of the facility.**

We stopped at one location to walk through a large, outdoor G scale layout. We did have one unscheduled stop when a coupler separated from the first passenger car behind the engine and work car,



Three trains greeted visitors. Mine was the top pic. The gon held every tool needed when miles away.

which thankfully was fully equipped with lots of tools. The passenger flat cars were pushed backwards for a way until the missing coupler was found. Soon we were on our way.

At lunch time we were given a large map of Train Mountain. For a map of Train Mountain, go to:

<http://www.friendstm.org/Atlas/Atlas.shtml>

Our volunteer hosts were very gracious and I hope they are successful in keeping all the facilities in tact.

Train Mountain has seven meets a year for members who pay dues from \$50 to \$2000. Every three years they have a Triennial. This year from June 25th until July 1st they celebrated their 25th year. Approximately 1400 people attended from over eight countries. There were 275 trains with 93 gas, 84 electric, 95 steam, and 2 rail bikes. A twelve minute video of the Triennial can be found here: <http://youtu.be/UBEOMf8smP0>. A 2005 video by Oregon Public Broadcasting can be found at: <http://www.opb.org/programs/ofg/segments/view/1565>



Above: One of two turntables we passed.

Below: A yard any modeler could wish for.





Some of the cars belonging to the museum. Caboose are for visitors as is the campground.





Everyone was yelling as the engines pulled several car lengths ahead. Note the missing coupler . Stranded visitors are still all smiles. There is no dispatching on the "layout". Tracks are one way, most switches aligned manually by brakeman. A complete tool set is in the CP gon including wrenches, rakes, shovels and spare parts. We found the missing coupler back past the switch stand and it was soon bolted in place.





Many spurs and sidings have industries. Here are some of the buildings along the right-of-way.



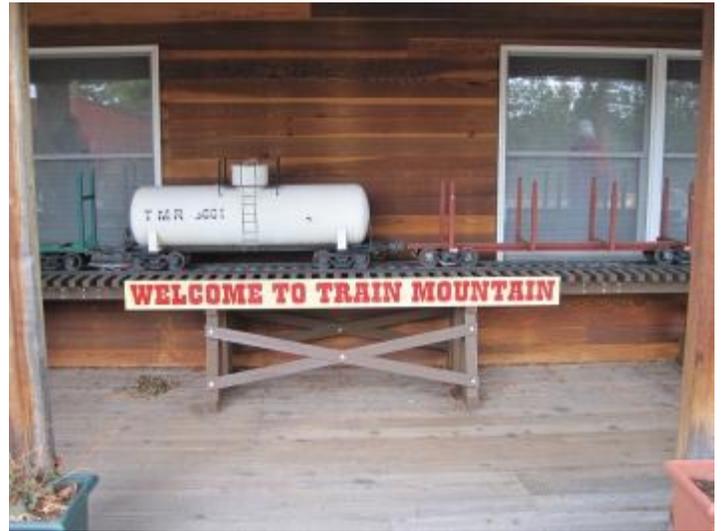


Above left: **Some of Quentin's locos next to shop building which was not open for viewing.** Above right: **More staging tracks.** Below left: **Two ways of clearing snow.** Below right: **Member train storage units. Ven-erator is one of several in yard for long tunnel running under yard area.**



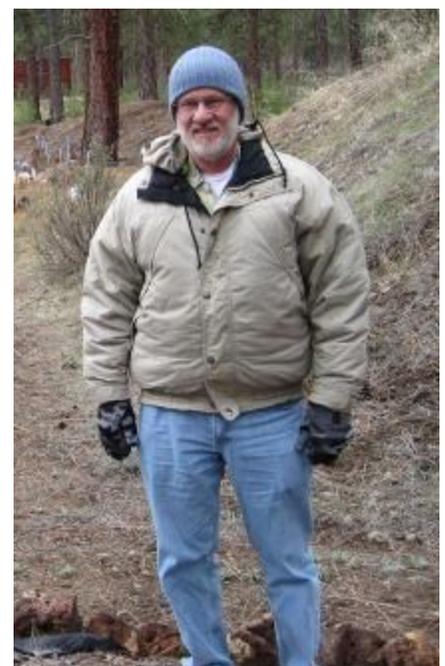
Above right: **Flat cars of ties ready to be laid.** Below left: **Aluminum rail and wood ties are being replaced with plastic ties and steel rail (no steel rail shown here).** Below right: **Stacks of track panels in the yard.**



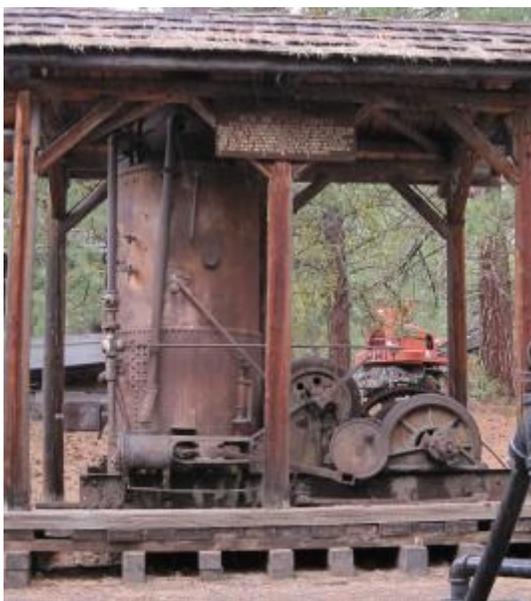
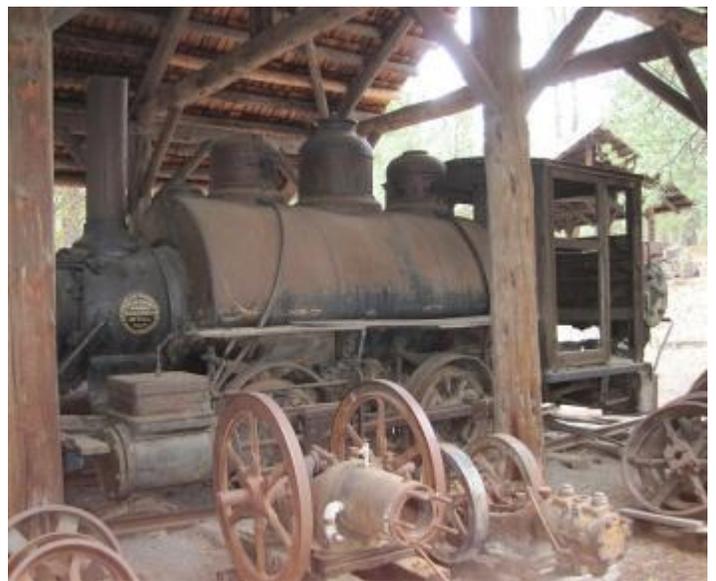


Above: Two of the many bridges. Pulling back into the parking area. Dining hall and bunk rooms.

Below: Thanks to our engineer, Dennis Ward, for a wonderful trip. Buffet in dining hall. I'm dressed to keep warm on this rainy May day at over 4200 feet. Hope you enjoyed the pictorial tour.



After lunch at Train Mountain, we were given guided tours of the Collier State Park Logging Museum.



# The Great Western Railway

by *George Booth*

Published with permission

Photos by *Gary Ray*

One of the great things about conventions is the chance to operate on other layouts. I had the pleasure of spending an evening with George Booth during the Medford convention. Many thanks to George for sharing about his layout and for opening it to convention members several times. ~ ed.

## Operating the Great Western Railway

My new **Great Western** layout was designed with a couple of goals in mind. It should represent the modeled area (Northern Colorado) with as much fidelity to the prototype as is reasonable, it should provide a platform for good quality models of the sugar beet industry and it should provide a basis for enjoyable operation.



**George Booth explaining the operations session.**

It has been over two years since construction started and the benchwork, trackwork and electrical systems are complete. All of the industries are represented

by mockups and some scenery work has been started. Recent activities have been geared towards getting the layout operations working to my satisfaction.

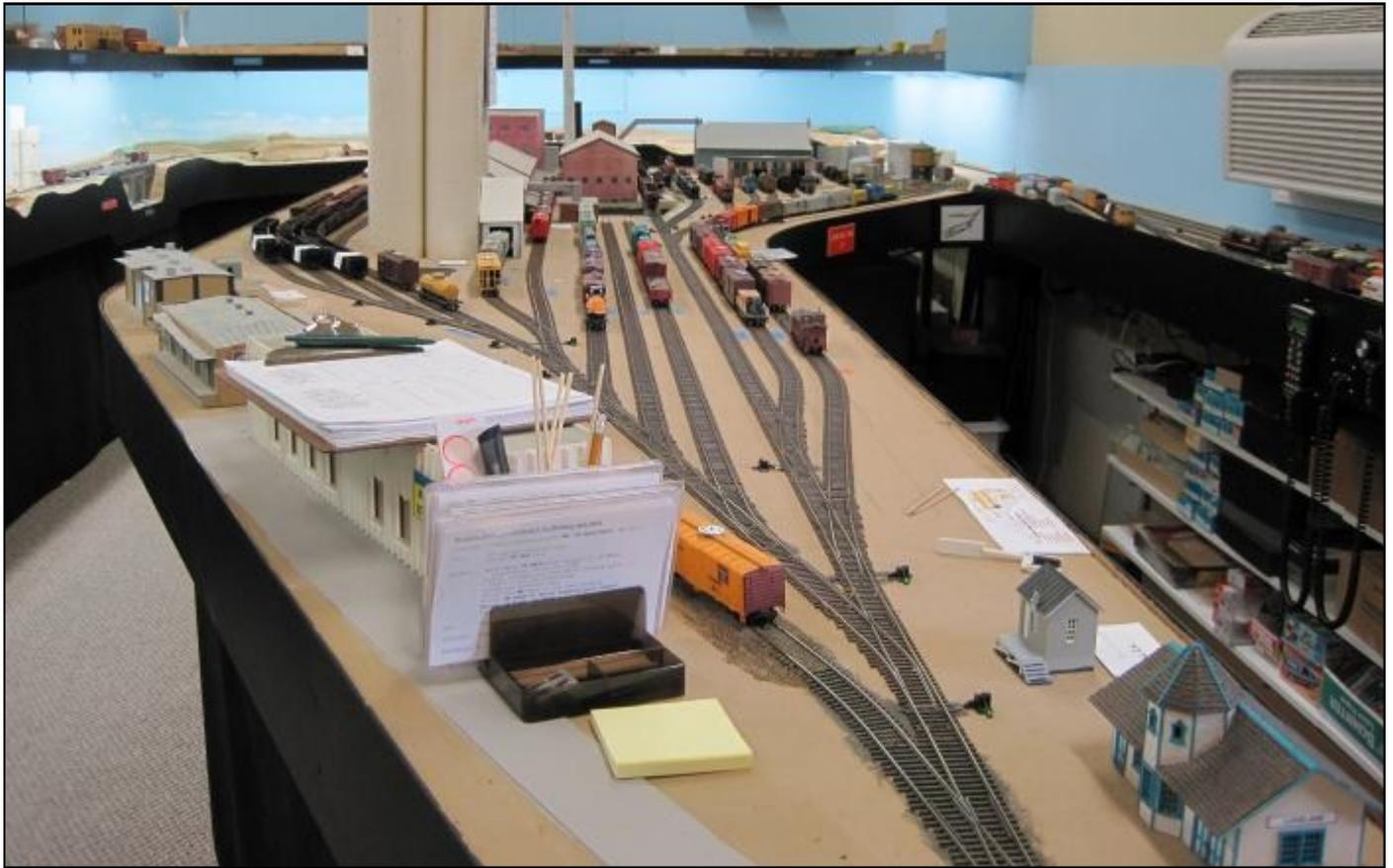
Numerous “test” operating sessions have been conducted with local modelers to help define traffic flow, determine a workable schedule and troubleshoot any



awkward situations. The following comments will discuss this in excruciating detail.

### Prototype Great Western Traffic Flow

The prototype Great Western Railway is a classic shortline operation. It was built in the early 1900s to support the five northern Colorado Great Western sugar beet factories in the towns of Loveland, Windsor, Johnstown, Eaton and Longmont. It also had connections to three Class 1 railroads in the area: the Union Pacific, the Chicago, Burlington and Quincy and the Colorado and Southern (a CB&Q subsidiary). Those connections provided a link to the outside world for raw materials needed for refining sugar beets and finished products.

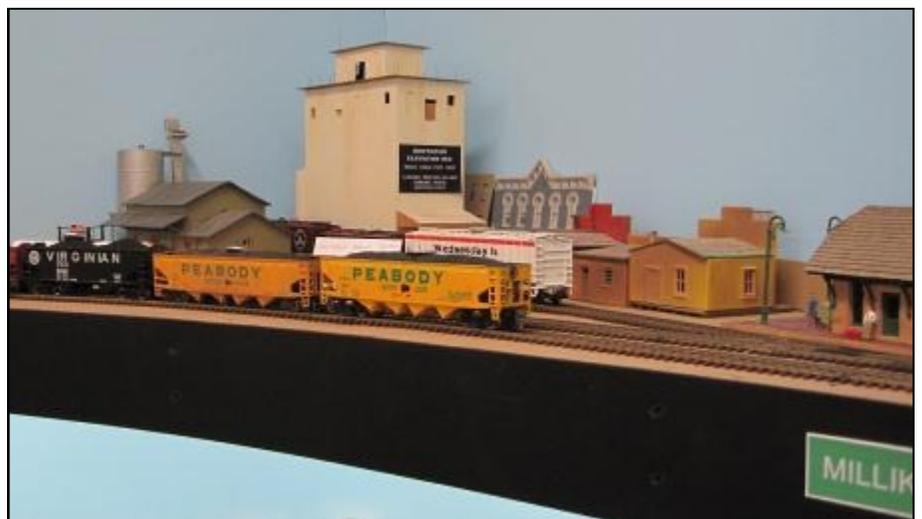


Sugar beets were harvested in the fall and the “beet campaign” was a hectic time with trainloads of sugar beets being moved from local beet dumps near farmers to the factories. Since the beets began metabolizing their sugar as soon as they were picked, it was imperative to move them to the factories and process them as quickly as possible so that the maximum amount of sugar could be extracted. The sugar beet trains and sugar beet factories ran 24 hours a day during the beet campaign.

Prior to the start of the harvest, raw materials were stockpiled at the factories. Huge amounts of coal for the plant boilers were brought in and stored in coal pits and outlying piles. Coke and limestone needed for the chemical extraction of sugar were also hauled in and stored where ever space was available. Nasty chemicals like sulfuric acid were delivered and stored in tanks. Packaging supplies were also brought in to bag the sugar after it was refined. Leftover sugar and by-products from last year’s campaign like beet pulp and molasses were sold at discount prices and shipped out to make room for the latest products.

During the campaign, raw materials were delivered constantly as they were used up. There was also some inter-plant traffic moving supplies from the main warehouses in Loveland to other beet factories. In addition, molasses (a by product of the sugar refining process) was shipped from both the Loveland and Windsor factories to the Johnstown plant. The Johnstown factory had specialized processes to extra more sugar from the molasses and also produced monosodium glutamate (MSG).

The Great Western concentrated on supporting the factories during this time but also served the local





needed

- Running east to Milliken to work the UP interchange
- Heading down the southwest branch towards Longmont working as needed

Interchange with the C&S and CB&Q at Longmont if there was no local Longmont switcher

The general operation was to run around the entire line and do whatever work was needed.

### **Model Great Western Traffic Flow**

The prototype had three operating “seasons” – preparing for the campaign, the campaign itself

and the rest of the year. The seasons obviously had specific traffic patterns. I’ve chosen to blend the seasons together on the model layout to best represent the general feel of the prototype. In essence, the beet campaign is continuous and all types of traffic happen all the time.

Even though moving sugar beets was a major activity of the railroad, it’s not very exciting for a model operation. Like coal hauling operations, sugar beet operations involved moving empty cars to the sugar beet dumps and bringing loads back to the factory. Constantly moving empties and loads back and forth gets boring quickly, so I only run three beet trains during a session, each one servicing different sugar beet dumps.

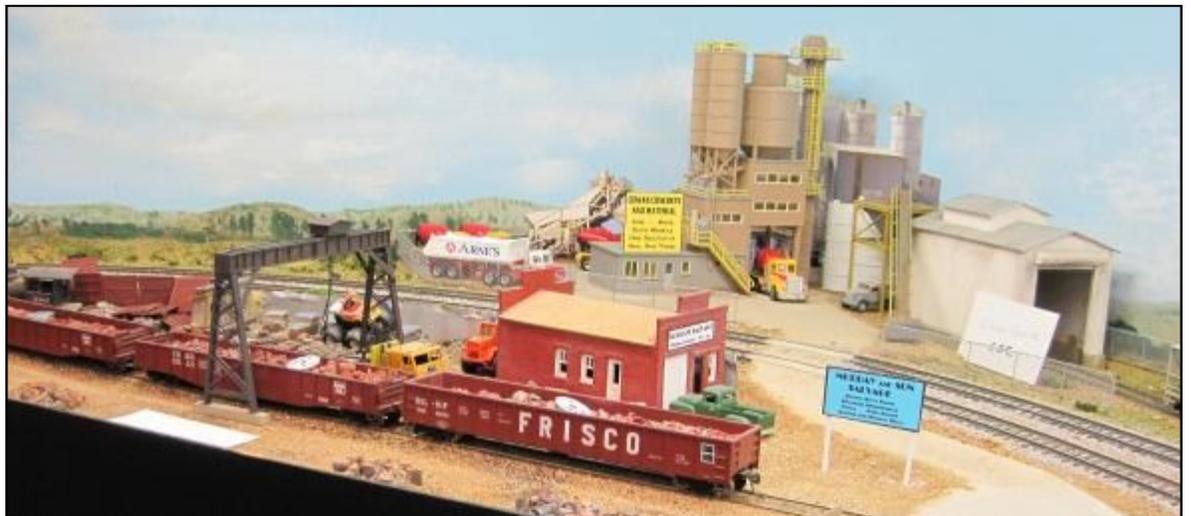
A key part of the model operation is interchange traffic from the C&S and UP. The GW was not a stand-alone entity and the interchange traffic provides raw

industries on an as-needed basis. Agricultural products were shipped from on-line grain elevators and supplies were delivered to local warehouses.

After the beet campaign was finished, the Great Western slowed down considerably and returned to supporting the local industries and continued shipping the stored sugar and by-products. Train operations were pretty structured during the campaign - beet trains, inter-factory trains, general freight – but after the campaign they ran as a typical shortline would. There might be two or three train crews operating daily, moving freight on an as-needed basis.

A typical run might entail:

- Picking up inbound cars from the Loveland C&S interchange
- Collecting and classifying cars in the yard
- Running eastbound to Officer Junction and setting out cars bound for Windsor to be picked up by a train operating out of Windsor
- Running southeast to Johnstown and perform setouts and pickups as



materials, empty cars for loading and a means to ship the finished products.

The primary interchange point is the Loveland yard connection to the C&S. Dozens of cars come and go through this connection during an operating session, keeping the yardmaster on his toes. Much of this traffic is destined for the Loveland factory with the remainder used to make up local trains.

Other interchanges provide less traffic but have well defined purposes. Union Pacific interchanges in Kelim and Milliken provide coal, coke and some general freight for the various factories. A C&S interchange in Windsor provides small amounts freight traffic as well as sugar beets loads from the Ft. Collins area. A staging yard in Windsor acts as the eastern branch of the line to Eaton and provides sugar beets and general freight. Another staging yard in Johnstown acts as the south-western branch to Longmont and provides a small amount of general freight.

Inter-factory traffic originates at the factories and is handled by locals servicing them. Most of it goes from Loveland to Johnstown. A number of cars that originate in Windsor are moved to Loveland then added to the Johnstown train (and return via the same route).

General freight traffic destined for industries along the line originates mostly on the interchanges. However, sugar beet pulp (a by-product of the refining process)



is pelletized in facilities at Loveland and Windsor and is used for cattle feed. This is shipped from the pellet warehouses to various feed mills and stock pens.

For my operation, car movement is the essence of the GW. I don't pay much attention to what is in various types of cars other than the obvious sugar beets, coal, coke and limestone seen in open cars. Box cars and tank cars have "stuff". If anyone is interested, I can detail the kinds of loads handled by the factories and local industries.

### Great Western Schedule

The goal of my operating sessions is to keep four or five operators busy during the entire session. I prefer



to have very little dead time between runs since I find that pretty boring. However, some slack is needed in the schedule to account for slow operators, new operators and general mayhem. The schedule is a balancing act that is refined by experience.

Another facet of the schedule is to keep operators from interfering with each other. The layout is double decked and the overall plan was based on the prototype geography without much concern for interference between levels. The areas to be switched are quite large and, by necessity, overlap between levels. Thus it is important to arrange trains so that upper level operations don't impact the lower level and vice versa.



You will note from the layout plan that while upper level Johnstown proper is across the aisle from the Windsor factory, the three track Johnstown yard is right on top of the Windsor factory lead and staging yard. It is very awkward to have operators in Johnstown and Windsor at the same time, as was demonstrated during some initial operating sessions.

I had initially planned to run 14 trains during an operating session: 5 interchange trains running on the outer C&S/UP tracks, 3 GWR sugar beet trains and 5 GWR factory and industry locals. This proved to be too many for a three hour operating session (12 fast hours) and created inter-level operator interference.

After some fine tuning, one of the beet trains was dropped and two of the town locals were combined into one. This gives 11 trains to run during a session and the work is well balanced.

The spreadsheet below shows the schedule and is also a tool I can use to balance trains. Each colored block is a train and the text inside gives a rough picture of where they will be in time. The highlights off to the side of each block show when that train is between Loveland and Officer Junction (yellow) and is in the helix (grey). Two trains can't be in those areas at the same time.

## OPERATIONS

There are three operators and a the fourth is the Loveland yardmaster who is in Loveland all the time and is responsible for maintaining the schedule as best he can (at least keep the trains in sequence if not on schedule).

Here is a brief description of work each trains does. First are the **C&S/UP** interchange trains.

(Note: northbound and eastbound are the same direction on the interchange loop, heading to the right as you face the staging yard (clock-wise). Southbound and westbound are the same direction, heading to the left as you face the yard (counter-clock-wise))

**C&S 138W** is the Greeley to Ft. Collins local on the "Greeley" branch. It leaves the staging yard westbound and interchanges with the GW at the east end of Windsor. It also has some switching work in the industrial west end of Windsor not served by the GW. It then continues

westbound and returns to the staging yard.

**UP 15** is the UP local on the Ft. Collins branch. It leaves the staging yard eastbound then heads up the "Ft. Collins" branch. It works the interchange at Kelim then returns to the staging yard.

**C&S 43N** is the Denver to Cheyenne local on the C&S main line. It leaves the staging yard northbound and interchanges with the GW at Loveland. It will drop the inbound cars on the C&S interchange tracks then enter Loveland yard to pick up outbound cars. It then continues northbound and returns to the staging yard.

**C&S 54S** is the Cheyenne to Denver local on the C&S main line. It leaves the staging yard southbound and interchanges with the GW at Loveland. It will drop the inbound cars on the C&S interchange tracks

then enter Loveland yard to pick up outbound cars. It then continues southbound and returns to the staging yard.

**C&S 139E** is the Ft. Collins to Greeley local on the "Greeley" branch. It leaves the staging yard eastbound and has some switching work in the industrial west end of Windsor not served by the GW. It then interchanges with the GW at the east end Windsor and continues eastbound returning to the staging yard.

Next are the **Great Western Railway** trains.

The **Windsor turn** leaves Loveland yard eastbound with all traffic destined for the northeast end. It will switch Gove on the way to Windsor. Upon arrival in Windsor, it will collect cars from the Eaton staging and C&S interchange. After doing all the switching in the factory, it will spot any outbound C&S cars on the C&S interchange and move eastbound cars to the staging yard. It then returns to Loveland with any westbound traffic.

The **Kelim turn** leaves Loveland yard with traffic for the Birds district (Gorom, Birds and Kelim). Some sidings are facing point on the way to Kelim and must be worked when the train returns. Other sidings are worked on the way out. At Kelim, the local will turn the train on Officer Junction, interchange with the UP and work any industries requiring service. It then returns to Loveland and works any sidings not already worked.

The **Johnstown-Milliken turn** leaves Loveland eastbound with all non-sugar factory traffic destined for the southeast end. It will go up the helix to Johnstown then use the three track yard by the sugar factory to sort cars as needed to work Johnstown industries, the Longmont staging yard, the Milliken industries and the UP interchange in Milliken. It returns to Loveland with any westbound traffic.

The **Welty Beet turn** leaves Loveland yard eastbound with empty beet cars for the Welty branch. It will go up the helix to Johnstown then take the Welty branch out to the beet dumps. After switching empties for loads, it returns to Loveland.

The **Johnstown factory turn** leaves Loveland yard eastbound with all traffic for the sugar factory. It will go up the helix to Johnstown then use the three track yard by the sugar factory

to sort cars as needed to work the factory. It will pickup some inbound cars in the yard, switch the factory as needed and leave any UP interchange cars in the yard. It returns to Loveland with any westbound traffic.

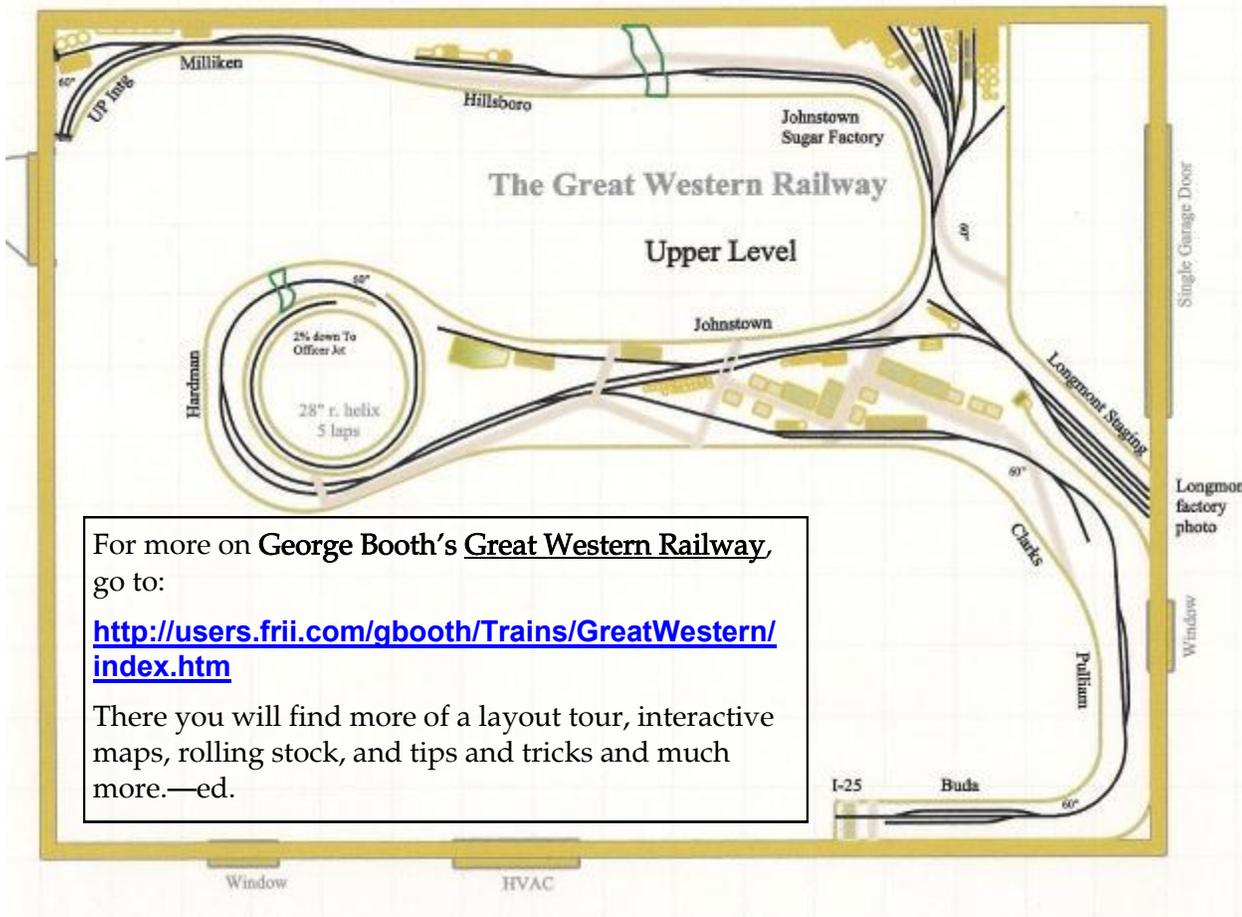
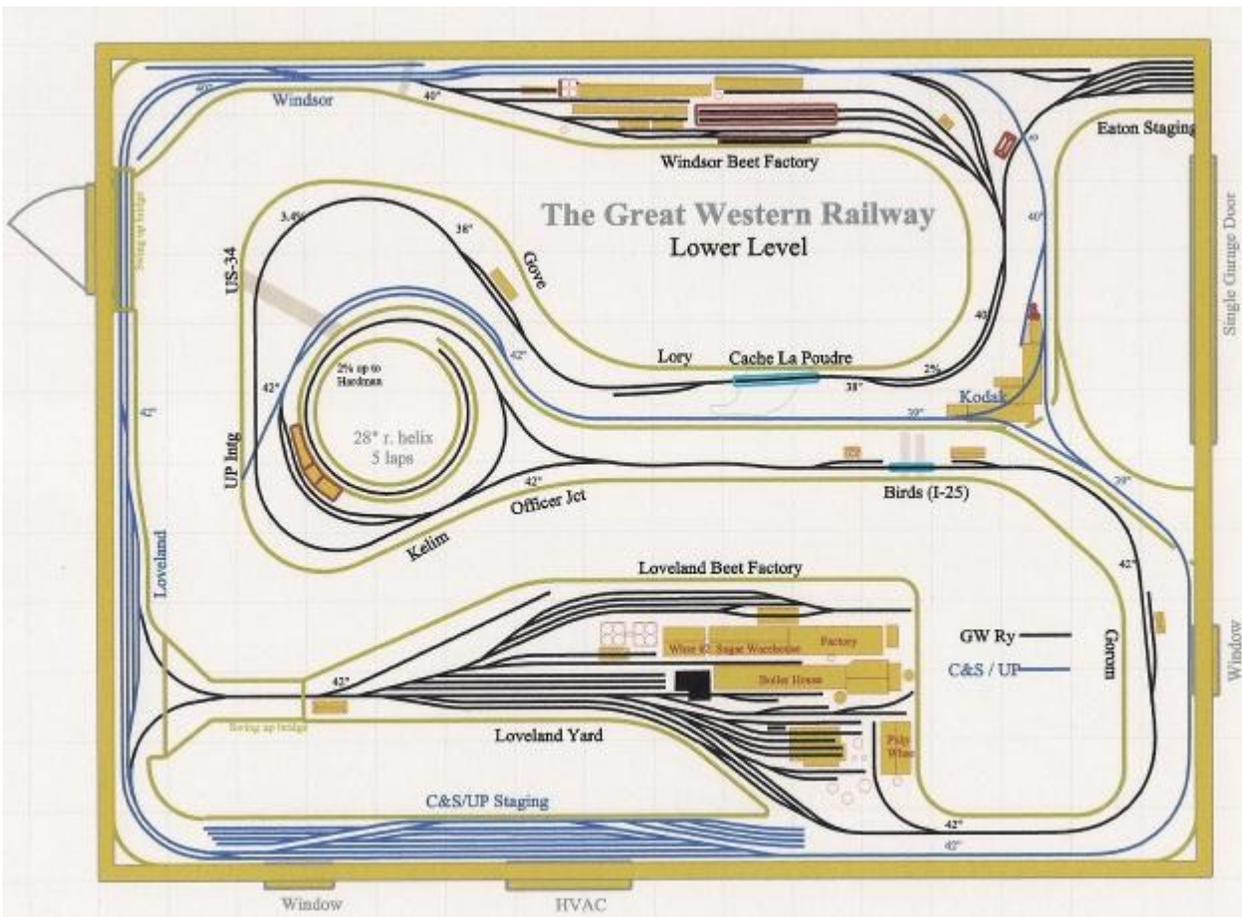
The **East Side beet turn** leaves Loveland yard eastbound with empty beet cars for Johnstown and Milliken. It will go up the helix to Johnstown, switch empties for loads at the Hardman beet dump, the Johnstown beet dump and Milliken beet dump then return to Loveland.

The initial plan was to have the last trains that return to the Loveland yard left unclassified, giving me something to do between sessions (classify those cars and make up the first two trains for the next session). It turned out that yardmaster couldn't leave well enough alone and spent extra time at the end of the session switching Loveland. Since the operators tend to car pool to my place that meant most of them were standing around at the end of the session. Boring.

To remedy this and "complete" the operating scheme, I will add some simple passenger operations and one or two beet trains at the end of the schedule (not shown). Passenger trains will leave Loveland and "Longmont", meet at Officer Junction to exchange passengers and terminate in "Eaton" and Milliken. This is close to what the early GW did and gives me an excuse to run some steam engines that are less-than-capable of hauling freights up the helix.

The beet trains will be a GWR train running from Loveland to Windsor (the one that was dropped from the original schedule) and a C&S train running from "Ft. Collins" to Windsor with interchange for the GW train. These operations will not interfere between levels since the passenger trains don't do any switching and the operators can stand back as they run.





For more on George Booth's Great Western Railway, go to:  
<http://users.frii.com/gbooth/Trains/GreatWestern/index.htm>  
 There you will find more of a layout tour, interactive maps, rolling stock, and tips and tricks and much more.—ed.