



THE SIGNAL BRIDGE

NEWSLETTER OF THE MOUNTAIN EMPIRE MODEL RAILROADERS CLUB
FEBRUARY 2015 - MEMBERS EDITION

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LOCATION

ETSU Campus
George L. Carter
Railroad Museum

HOURS

Business Meetings are held the 3rd Tuesday of each month. Meetings start at 6:30 PM in:

Brown Hall
Room 312

ETSU Campus,
Johnson City, TN.

Open House for viewing every Saturday from 10:00 am until 3:00 pm.

Work Nights are held each Thursday from 4:00 pm until ??

CSX #913- GP38-2

NORTH BOUND TANKER TRAIN OUT OF KINGSPORT, TN

Photos courtesy of Paul Haynes



NEW LIFE FOR AN OLD DEPOT
RENOVATING THE FORMER ET&WNC DEPOT IN JOHNSON CITY, TN
Photos and Description By Paul Haynes



The front entrance of the former ET&WNC depot in Johnson City is undergoing renovation. Having served for several decades as a tire store the building has been sandblasted to remove a coat of white paint and reveal the original brickwork.



Another trackside view showing the baggage and freight handling portion of the structure.



Above the window and door opening it is evident that the building received brick repair as indicated by the lighter color bricks. The new owners intend to restore the building to its original appearance and intend to replace the newer brickwork with once that match the original bricks.



This is a view of the trackside of the building showing some deterioration to the masonry in the lower right of the structure.



A photo of the interior of the waiting room and ticket area. Portions of the roof appear to have been water damaged and will be replaced. The new owners of the building plan this area to become a store and tasting room for their brewery.



Here's a detailed look at the ceiling rafters over the waiting room portion of the depot. Imagine what the room would look like with a finished high-vaulted ceiling,



A second view of vat room looking away from the waiting room of the depot. This view provides a great look at the original ceiling over the freight/baggage portion of the depot.



Here's a view of a diagonal brace under the overhanging eave along the platform side facing the Norfolk Southern tracks. Most of the braces will have to be replaced in the renovation. The photo also provides a good look at the original windows along the freight/baggage room. They appear to be sliding panels with screening.



This will be the vat room to be located behind main waiting room in the depot. The light line across the center of the picture is one of three drain troughs that have been cut into the floor. In the foreground are stacks of flooring grate to cover the drain troughs.



An excellent photo of the roof truss support construction in vat room.



This is an example of the diagonal support members being replaced. It's one of 50 to 200 that need to be made.

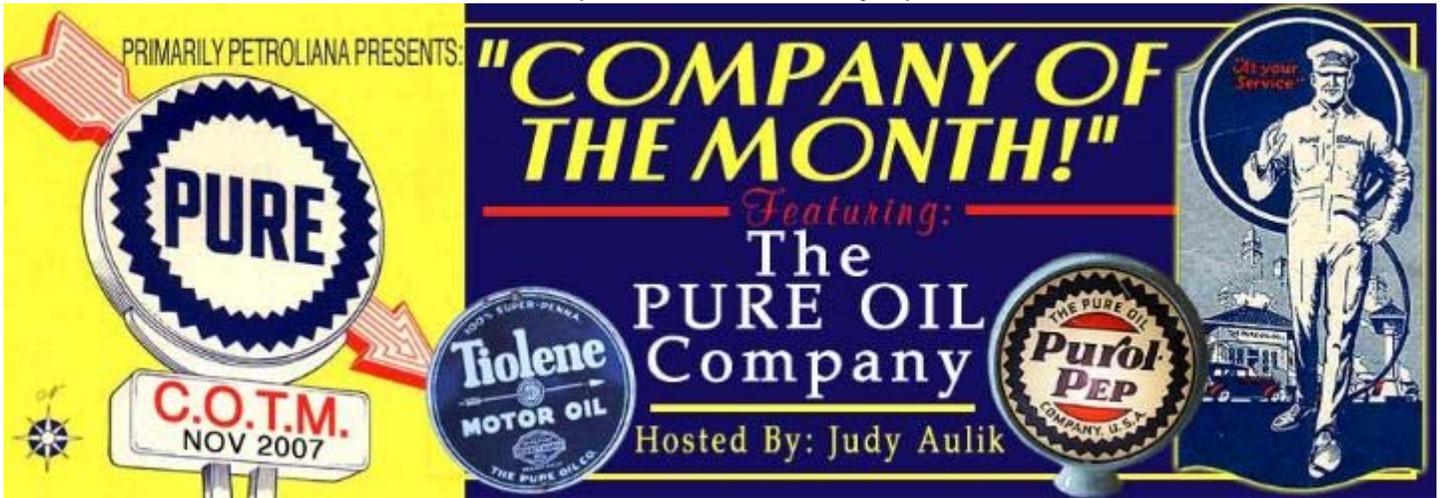


CSX #6111 (ex-B&O #4012) GP 40-2 leading a merchandise train through Kingsport, TN - photo courtesy of Paul Haynes



CSX #75 (AC44CW) on the point of a coal train through Kingsport, TN - photo courtesy of Paul Haynes

HISTORIC ARCHECTURE
PURE OIL COMPANY'S ICONIC SERVICE STATIONS
 From Wikipedia.com the online encyclopedia



Ex-Pure Oil Station,
Charlotte, NC

Pure Oil Company was an American petroleum company founded in 1914 and sold to what is now Union Oil Company of California in 1965. The Pure Oil name returned in 1993 as a cooperative (based in Rock Hill, South Carolina since 2008) which has grown to supply 350 members in 10 Southern states.

Three companies operating in the United States have used the Pure Oil name. The first began as a group of independent oil refiners, producers, and pipeline operators, in the Fall of 1895 in Butler, Pennsylvania, with headquarters in Pittsburgh, although it was incorporated in New Jersey. Pure was organized by independent interests to counter to the dominance of Standard Oil Company in the Pennsylvania oil fields, and was the second vertically integrated oil company (after Standard) in the region. Operations were based in Oil

City, Pennsylvania. David Kirk was elected the first president. He was succeeded in 1896 by James W. Lee.



Ex-Pure Oil Station,
Fairport, NY

Pure Oil sold illuminating oil in Philadelphia and New York City. Standard Oil was the major competitor. The company also built bulk terminals in Amsterdam and Hamburg and competed in Europe with Standard Oil, the Nobel and Rothschild families, and Deutsche Bank.

In 1900, Pure Oil became the holding company for three independent pipeline companies. Pure Oil Producing Co. was incorporated in 1902. In 1904 a refinery was built on the Delaware River which received 600 barrels per day (95 m³/d) from the United States Pipe Line. This increased to 1,800 barrels per day (290 m³/d) by 1906. The Pennoil tanker delivered oil to Europe.



Front view
Karz Dr. (ex-Pure Oil Station) – Johnson City, TN



Street view
Survival Outfitters (ex-Pure Oil Station) – Johnson City, TN



Side view
Karz Dr. (ex-Pure Oil Station) – Johnson City, TN



North side view
Survival Outfitters (ex-Pure Oil Station) – Johnson City, TN



Rear view
Karz Dr. (ex-Pure Oil Station) – Johnson City, TN



Rear view
Survival Outfitters (ex-Pure Oil Station) – Johnson City, TN



**Front view
Allstate Insurance building (ex-Pure Oil Station)**



**Side View
Allstate Insurance (ex-Pure Oil Station)**



**A side view Office section
Allstate Insurance (ex-Pure Oil Station) –
Note the letter “P” on the chimney**



**Front view
Allstate Insurance (ex-Pure Oil Station)**



**Rear view
Allstate Insurance building (ex-Pure Oil station) in Elizabethton**

a share for the company. Dawes was building an Oklahoma refinery, and Pure Oil had production capabilities there which would benefit his company. The Pennsylvania company accepted the offer and made \$22 million in profit on the sale.

In 1920, Ohio Cities Gas Company's name changed to Pure Oil. In 1926, the headquarters moved to Chicago. Refineries were located in Ohio, West Virginia, Oklahoma, and Texas. A Pure Oil Gas Station, built in 1933 and located at Saratoga Springs, New York, was listed on the National Register of Historic Places in 1978.

By the 1960s, sales were \$700 million a year, and Pure Oil ranked as one of the country's 100 largest industrial companies. Over 1,000 worked in the Chicago area. The headquarters at that time were in the northwestern suburb, Schaumburg, in a building which is now a campus of Roosevelt University. The company motto was "Be sure with Pure."

By 1917, operations in Europe ended. Also, Beman Gates Dawes and his brothers, whose Columbus-based Ohio Cities Gas Company had begun in 1914, made an offer of \$24.50

Union Oil Company of California purchased Pure Oil in 1965. Shortly after acquisition by Union Oil, Pure Oil's Refining & Marketing operations became the Pure Oil Division of Union Oil Company of California with the Pure Oil name continuing in full force. By 1970, the Pure Oil brand was phased out, and remaining service stations and auto/truck stops were rebranded as Union 76. The Pure Oil Division was merged with Union Oil's west coast Refining & Marketing division to become the Union 76 division.

After 1970, the Pure Oil name was retained as a registered trademark, while the Firebird brand name was retained and used primarily for motor oils and lubricants that were not extensively marketed toward consumers.

In 1992, Unocal announced plans to end Southeast operations. The 76 brand is currently owned by Phillips 66 while Unocal was later bought by Chevron Corporation.



Vintage Pure Oil sign located at Cuyahoga Valley National Park near Richfield, Ohio.

Pure, and later Union 76, was "The official fuel of NASCAR," a relationship that lasted over 50 years, ending in 2003. Sunoco has since replaced 76 as the official fuel of NASCAR

THE PURE OIL SERVICE STATION PROJECT – PART 1 BUILDING THE BASIC STRUCTURE

By Ted Bleck-Doran

While driving around the Tri-Cities region I noticed several interesting buildings with steep peaked roofs. They each shared common architectural features besides the steeply pitched roofs: a small office like wing attached to a 2- or 3-bay addition. I came across three examples of these structures: the Karz Dr. at the intersection of W Main and W. Market in Johnson City, the Survival Outfitters at the corner of Buffalo Street and Walnut also in Johnson City, and the Allstate Insurance Office located in Elizabethton. I took photos of each which appear elsewhere in this issue of **THE SIGNAL BRIDGE**.

I asked around the club if determine if my hunch that these were former gas company service stations. Much to my delight Dean Small immediately identified the buildings as service station outlets for the **Pure Oil Company**. The chain, I discovered, was primarily a southern based chain with an interesting history. It was the official brand for **NASCAR**. I decided then and there that this would make an interesting modeling project, one that would fit right into either the "Tweetsie" layout project, the club HO layout, or my NC&STL RY layout at home.

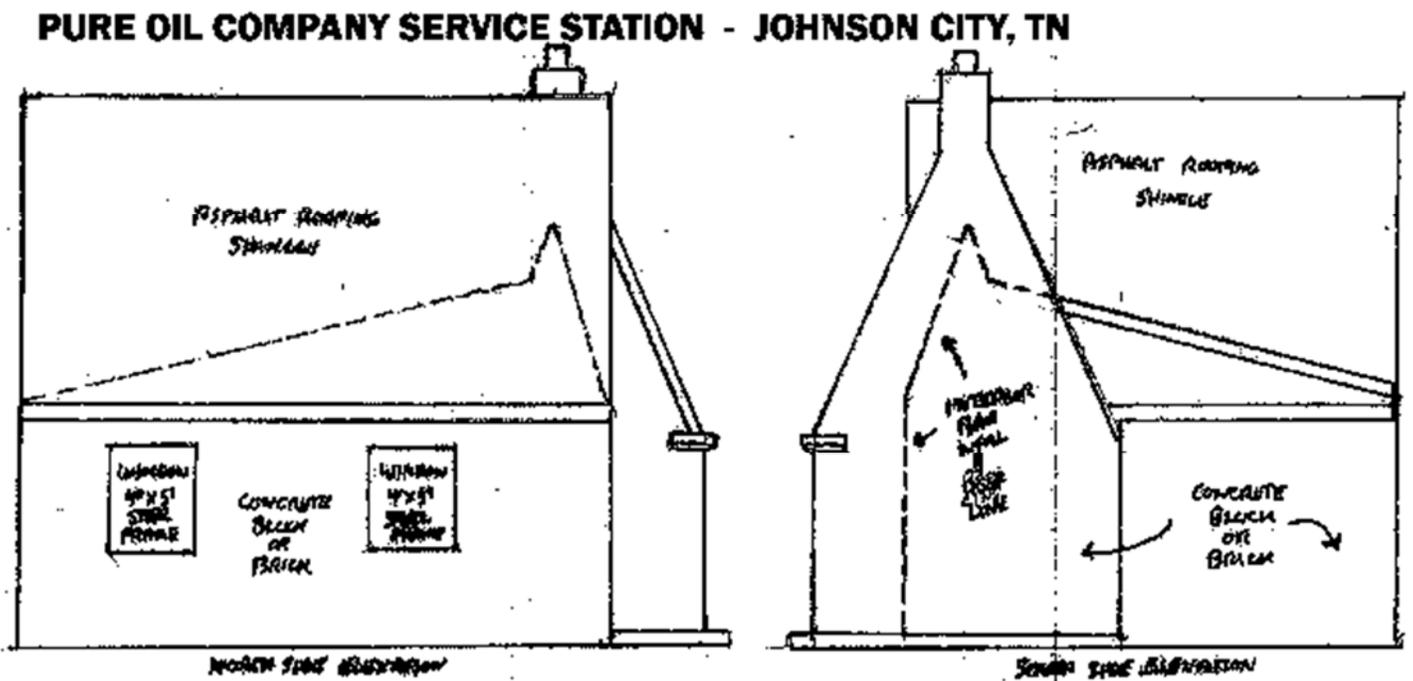
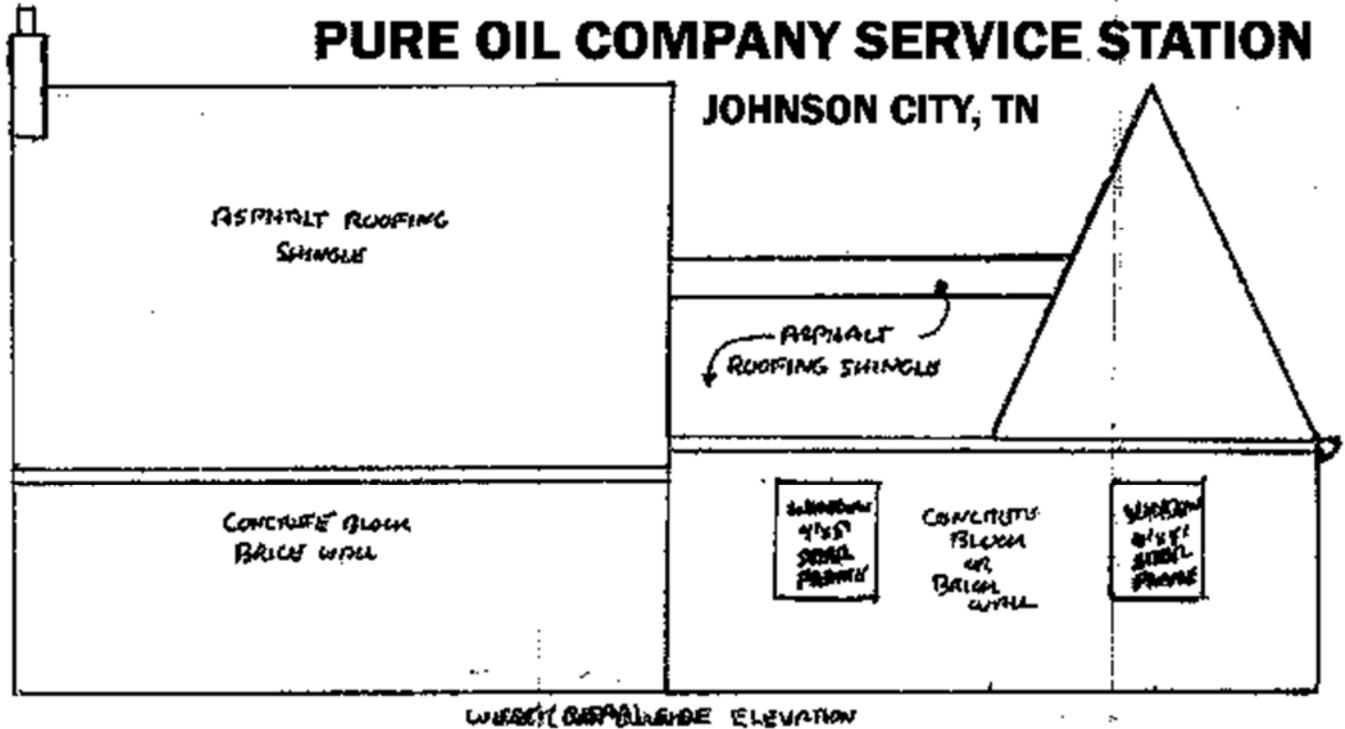
To start the project I needed some plans. A search of the internet provided the history of the company, but nothing in the way of plans for the structures. Therefore, I started working from the photos I had taken develop a set of drawings. There were two factors that helped me with dimensions: the office door (narrow and tall) and the visible cement block courses visible on the Survival Outfitters' building. Each structure had unique features to consider. The Karz Dr. building had been extensively modified with changes to the lower roof line and building floor plan. The Survival Outfitters had modifications to its floor plan but the added sections were obvious (e.g. - brick instead of concrete block). The Allstate Office showed the least modifications but the photos were less helpful in determining the building's dimensions as the brick courses were not a discernible.

The door appeared to be a standard 33" x 72" door, while a standard cement block is normally 6"x 15". These two dimensions allowed me to estimate the others measurements for the structures.

Each of the existing structures had received modifications over time. The Karz Dr. building was originally a 3-bay station and had received several later additions including a connection to a large warehouse type extension. The Survival Outfitters was a 2-bay station and had received an

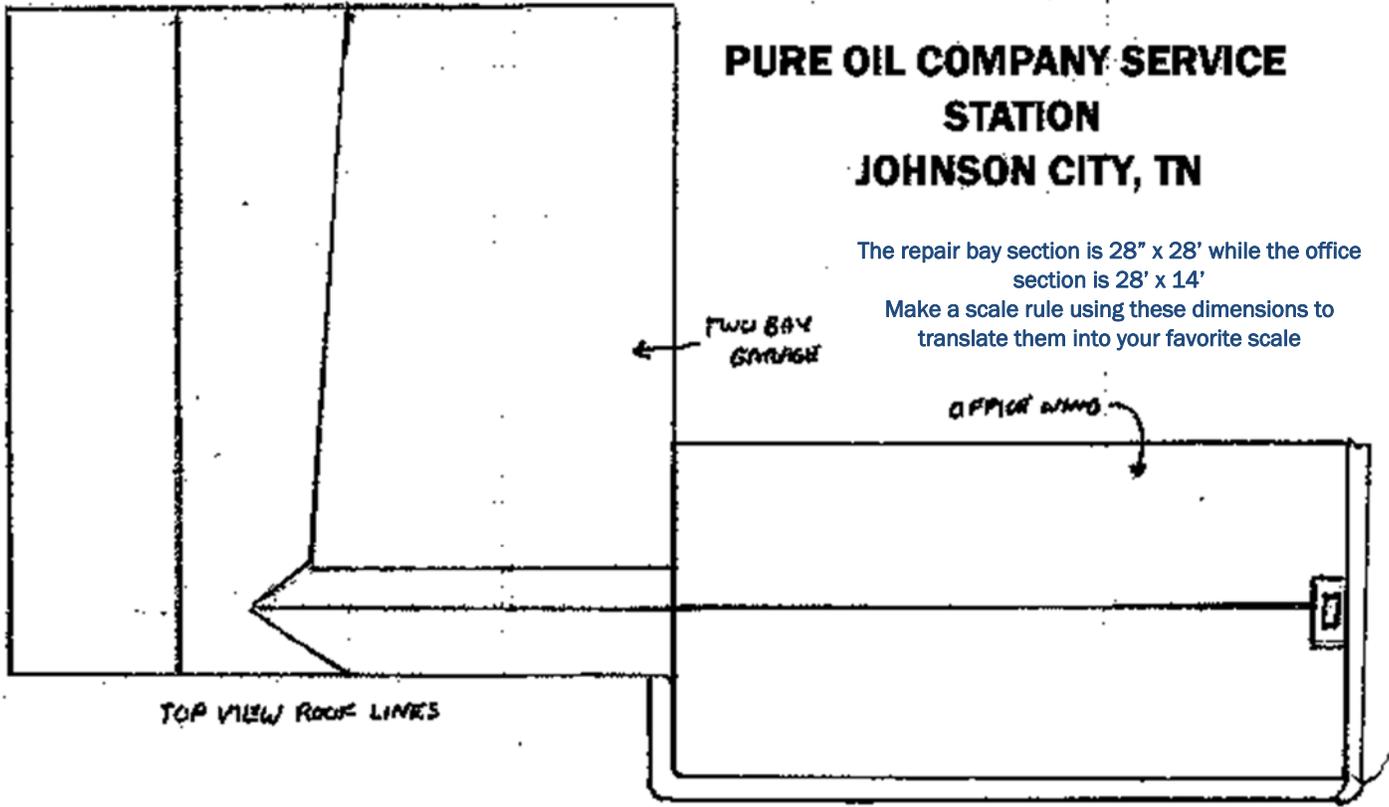
odd assortment of additions which served as storerooms (as evidenced by the use of brick in place of block construction). The Sycamore Shoals station had been modernized with the addition of a metal roof, but probably represented the least modified example of this type of station. The station in Charlotte NC station possibly started life looking a lot like the

Fairport NY station but received an enlarged office with carport entrance later in its life. The photo of the Fairport NY station (a single bay service station) is possibly the least modified example, however, the arched style of windows may indicate a later updating of the structure.



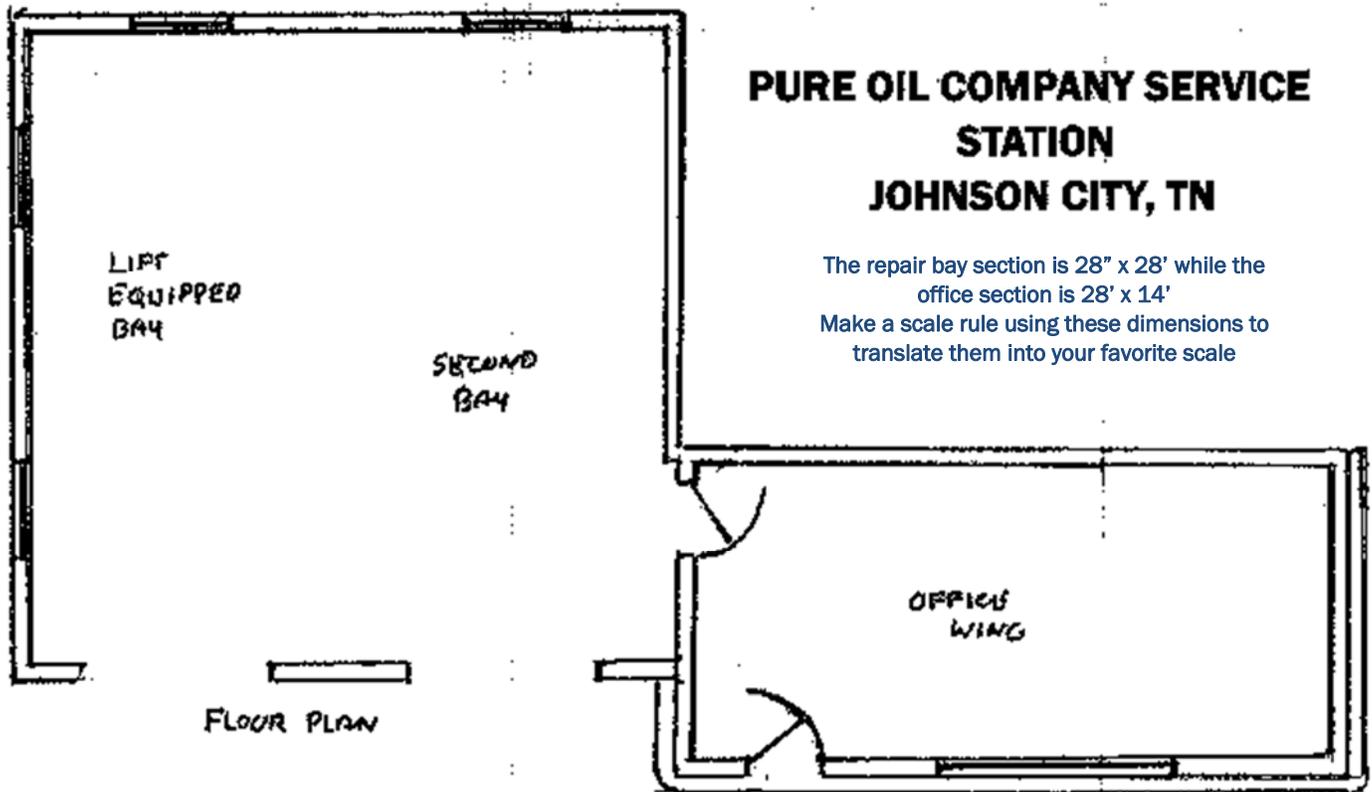
PURE OIL COMPANY SERVICE STATION JOHNSON CITY, TN

The repair bay section is 28' x 28' while the office section is 28' x 14'
Make a scale rule using these dimensions to translate them into your favorite scale



PURE OIL COMPANY SERVICE STATION JOHNSON CITY, TN

The repair bay section is 28' x 28' while the office section is 28' x 14'
Make a scale rule using these dimensions to translate them into your favorite scale



While creating the drawings for the project I estimated the office portion to be a standard 14' x 28' and the Service bay section to be a 28' x 28' (each bay a standard 14' x 28'). I chose to model the Survival Outfitter's building, I decided to include appears to have been a modification to the roofline, the steep pitched portion over the second service bay. I believe it was added to accommodate a service lift later in its life as a service station.

Gathering Up the Necessary Building Supplies

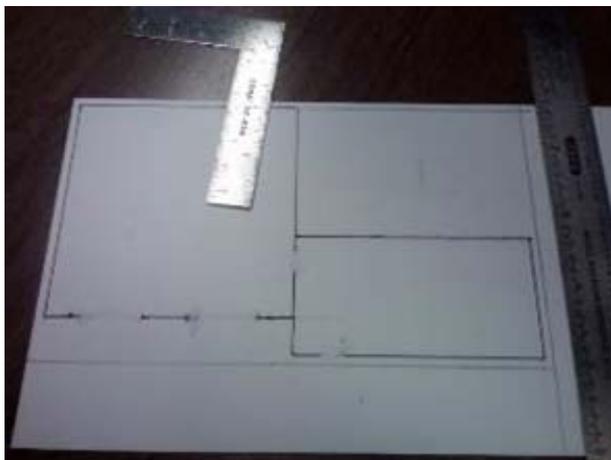
Parts List:

- Styrene Brick or Concrete Block sheet
- Styrene Asphalt Roofing sheet
- Styrene plain sheet (for base)
- Assorted styrene shapes (for bracing and trim)
- Tichy Door
- Tichy Garage Door
- Tichy Windows
- Tichy Windows
- JL Innovative Gas Pumps
- JL Innovative Gas Station interior details
- JL Innovative Gas Station junk details

Tools

- Fresh knife blade
- Assorted files
- CA or plastic glue
- Assorted paint colors
- Scale ruler
- Square
- Hobby cutting surface
- Sharpie fine point drafting pen

Let's Start Building
Part 1: The Basic Structure



STEP 1:

Working from the drawing I prepared, I started by marking out the major structural pieces of the building. Since the station was built over a concrete slab, I laid out the floor plan on a sheet of plain .020 styrene pictured above. I also laid out the walls for the office and repair bay sections on the brick styrene. I used a scale rule, 90-degree metal rule and a fine tip Sharpie to markup the wall sections.



STEP 2:

No, the knife blade is not accidently upside down. Using the back side of a Xacto #11 blade lets you score a cut line. Use steady pressure on the blade, but don't try to cut the styrene in a single sweep of the blade. Too firm a pressure and you run the risk of having the blade wander off line. Use a metal ruler to guide the blade. The Evergreen brick sheet is only .020" thick so only 3-4 sweep are needed. For thicker styrene 4-5 sweeps can be made and if the cut line extends to both edged the sheet can be bend along the cut and the styrene will snap. A file or piece of sandpaper can be used to dress the cut edge.



STEP 3:

I had purchased the architectural shapes sample boxes available from Tichy several years ago. There are two sets of pieces for the HO modeler, both contain a wide selection of doors and windows. These are my go-to sets for molded parts. I selected a two-pane door for the front of the station, a solid door for the interior doorway between the office and repair bays, 12-pane metal frame casement windows for the repair bay section, and 5x8 pane metal frame casement window for the office section. I was going to use the Tichy solid garage door for the repair bays but came across the cast metal rollup garage door with three rows of windows which looked better. The part was from a Fine Scale Miniatures kit. Since I only had a single door I had to cast a set (more about molding parts from dental stone later).

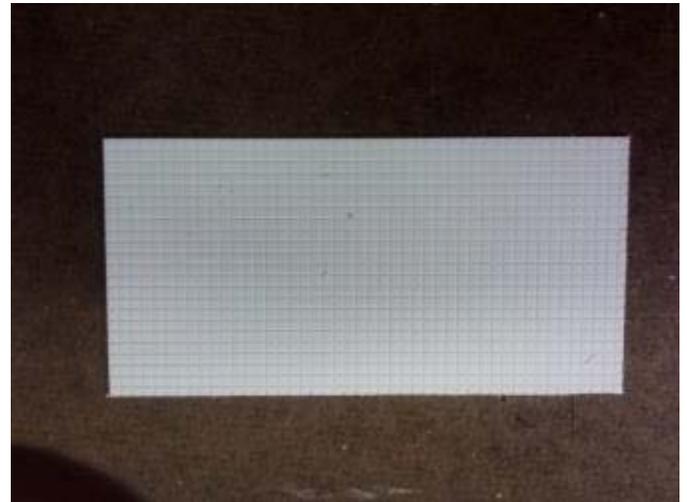


STEP 4:

Having selected the doors and windows and separating the building sides I measured the door and window pieces and marked their positions on the wall sections. This time I used a single edge razorblade to make the cuts since I wanted a crisp cut edge. As with cutting with the hobby knife blade, several strokes with moderate but firm pressure is better than trying to make the cut in one stroke.

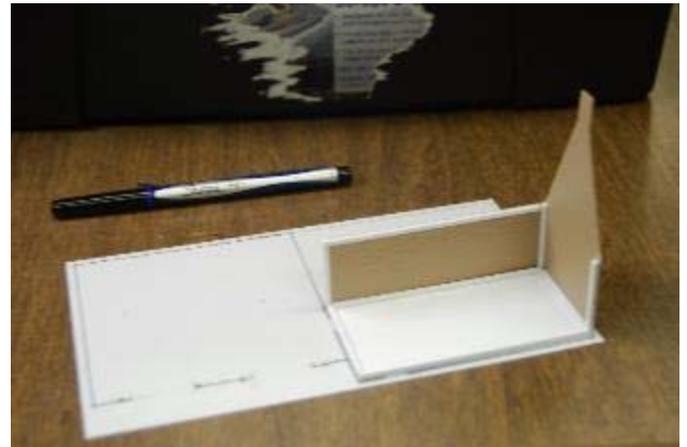
HINT #1: use a .60 drill bit in a pin vise to drill a small hole at each corner before you cut out the door and window openings. This will prevent marking the cuts extend beyond the intersections. A hobby file can be used to square up the corners. This is critical for the steel frame window casings since they lack the frame flanges to disguise the mounting edges.

HINT #2: Fred Alsop has been using a 90-degree cutting stamp he found from Micro-Mark Tools. They come in several sizes so they can be used to cut openings for both small and large window/door openings.



STEP 5:

With the wall pieces cut and the windows and doors installed I turned my attention to the foundation. The station has two levels, the floor of the repair bays made of poured concrete and the office floor 6" higher. I decided to use a piece of styrene with a 6"x6" tile pattern for the office floor. I cut this piece 1/16" smaller all around than the length of the wall pieces so that I would wind up with the corner joints of the walls butting flush.



STEP 6:

I centered the tile floor on the piece I had drawn the building floor plan on and glued it in place. Taking the hobby knife and using the back of the blade, I scored expansion joints on a 14'x14' grid in the repair bay area since this represented poured concrete.

I then started to position the walls. I used styrene .080x.080 square strips to reinforce the walls. Since I plan to have the interior lighted the reinforcing strips will also help keep the light from bleeding through at the corner joints.

HINT: a word about adhesives. I like to use Testors' Master Modeler glue to affix the sections of the building. The needle applicator makes running a bead of glue an easy task and the solvent based glue stays pliable for several minutes allowing truing up the jointed pieces. Testors, Tenex, Plastestruct all make a brush-on solvent based glue. I find it trickier to apply.

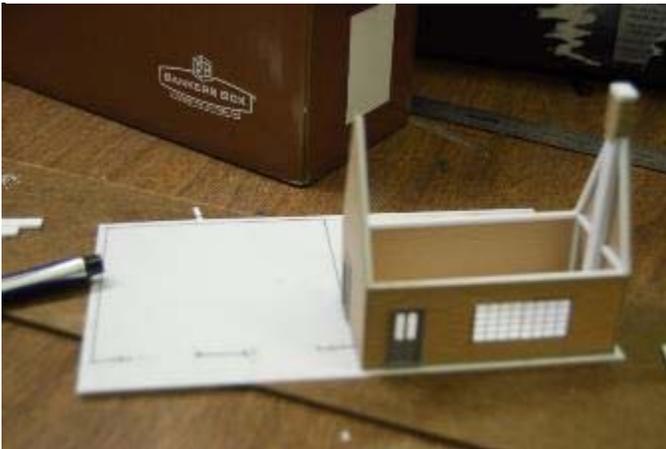
HINT: Tenex is especially good for affixing window glazing to window and door frames. Just position the glazing material over the back side of the window frame; run the applicator brush along the edge of the frame and glazing material; the glue will seep between the frame and glazing and create a tight bond. The nice thing about Tenex is that it does not fog the clear glazing like other solvent/CA types of plastic cement,

HINT: Arlene's clear Tacky Glue can be used to make window glazing. Just take a good sized drop of glue on a piece of scrap strip wood or styrene and sweep the glue diagonally across the window frame until a thin film of glue fills the frame. Allow the glue to dry and a clear pane of "glass" will have formed. For frosted panes of glass, use Elmer's white glue. For a broken pane of glass - take your hobby knife blade and pop out the "offending" pane.



Step 8:

Before moving on to the repair bay section I added the rain gutter to the front and rear of the office section. The gutter was formed using .020" x .040" U channel styrene with a piece of .020" x .020" square styrene glue under the channel. The gutter extend around the corners. I found an example of this on the **KARZ. DR.** building in Johnson City. I thought the gutter would enhance the visual appeal of the building when viewed from the front.



STEP 7:

Continue assembling the walls and adding the structural bracing, ensuring that the corners are square, brick courses line up and the walls are sufficiently braced and sturdy. Here the chimney has been formed. The chimney for the station on Buffalo Street was laid up along the interior of the office wall. I used pieces of .040" x .080" strip styrene to form the chimney. These strips form an interior wall brace. The exposed portion received a brick facing made from pieces cut from scraps left over from cutting the large office window opening. A cap was formed with a small piece of .040" x .080" styrene. Since the chimney was lined, I added two 1/8" hollow styrene tube extensions.



STEP 9:

Fabricating the walls for the repair bays followed the same process as for the Office section. Each wall piece was measured and cut to size. Door and window opening were marked and cut out. Framing for the bay doors was formed using the .020"x .040" U Channel styrene. The addition of the U channel nicely reinforced the front wall unit. The U channel was also added to the top course of each wall unit. Additional bracing of .020" x.020" square styrene was added around each wall piece to further reinforce the walls making a fairly sturdy structure for handling.

**STEP 10:**

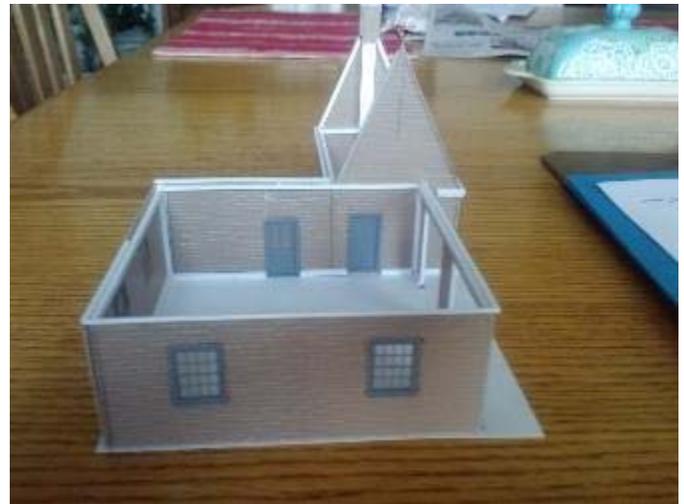
When assembling the section, make liberal use of your square to insure that everything lines up. You will notice the expansion joints scribed on the repair bay floor. This was done much in the same manner as cutting the styrene. The back side of the hobby knife blade was used to scribe the lines, only care was taken to avoid cutting through the styrene sheet.



View of the side from the office section



View from the rear of the structure



View of the Repair Bay side of the structure

You will want to touch up some of the construction flaws before moving on to the next stage of construction. Before making the roof sections, I added another layer of styrene (.020" thick sheet styrene) to insure that the interior lighting would not show through the walls of the building.

I also made the standard doors double sided since the interior would be visible. The door leading from the repair bays to the store yard is a double window door with clear "glass" panes. The windows were also double sided to provide a more finished appearance.

COMING UP IN THE MARCH ISSUE OF THE SIGNAL BRIDGE:

*Building the roof sections
and
Preparing the interior for painting.*

**BUILDING A VILLAGE:
PROGRESS ON MODELNG SHELL CREEK**
Models by Fred Alsop



Fred Alsop has been busy and Shell Creek is shaping up



The Shell Creek school house has received a base coat of grey paint to serve as a starting point for weathering



In this photo Fred has finished painting the school house



The Church family residence is ready for final painting and installation



The General Store and Post Office is taking shape and will provide a see-through interior



Fred is adding interior walls to the Shell Creek Store – Fred is using similar techniques to those described in the Pure Oil station project – styrene is a fun medium to work with for these sorts of projects



Fred has added the final colors to the Shell Creek station – the basic green and Tuscan red for the ET&WNC properties



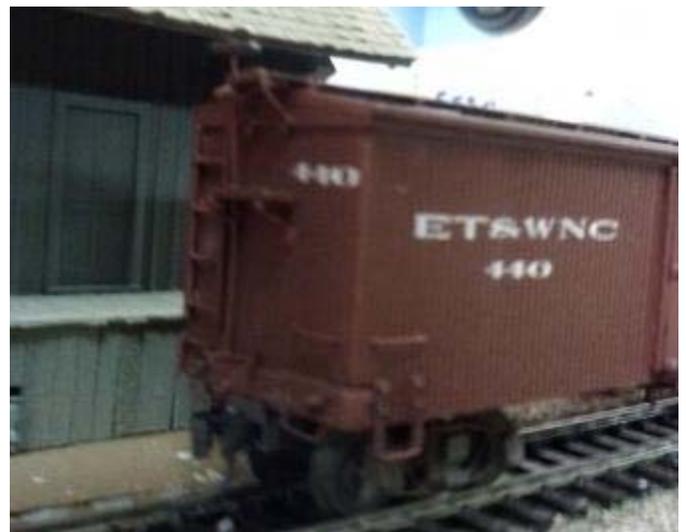
The ET&WNC Depot at Shell Creek is wearing a primer coat of brown and like the school house is ready for weathering



Note that the passenger and freight portions of the depot are different colors on the interior



The Shell Creek depot is in its final location



An ET&WNC boxcar has been spotted at the Shell Creek depot



Two vies from street level



The original location markings for the residence is visible - they will be covered when the village receives its final scenery



A street level view of the depot and the residence



Several buildings will have completer interiors and will be views from the isle - you can get an idea of how it will look when done.

**MOUNTAIN EMPIRE MODEL
RAILROADERS
COORDINATORS' MEETING
January 15, 2015**

WEBMASTER (John Edwards)

Working on getting Membership list together and getting membership cards out.

COPE LAYOUT (Dean Small):

Farris Wheel on the cope layout is near complete. The cope layout is currently at the Agapic center I Johnson City and needs to be picked up 1-17-2015.

McKEE LAYOUT (Mike Baker): The G- scale is up and running in the layout room and the kid's room.

BANKUS LAYOUT (Gary Gilliam): N -Scale is up and running

SECRETARY (Debbie Edwards): Sent cards for Roger, Jerry Dennis brother, Mira Hensley and Allen Morton.

LIBRARY (Gary Emmert): There are currently 913 Hardback books in the library. He needs time to explain the new time table for Tuesday.

TREASURER (Gary Emmert): All Club fees are due March 1, 2015. Check ASSDC Membership By-laws. Need budgets for 2015.

NEWSLETTER (Ted Bleck-Doran): MEMRR Time Table Program for February. The Signal Bridge for February is 24 pages.

HO LAYOUT (John Carter): HO Layout is moving along slowly. Frank is currently working on wiring and has been able to fix some the problems. There continues to be a problem with a couple of areas in the track.

HERITAGE DAYS (Jeff Geoff): NORTH EAST RAILROADS for January. SHORT LINES in February. We need to be planning

ahead to move the china in the display cabinet so there is no damage to items.

*Submitted by:
John Carter
Vice-President MEMRR*

**MODELLING IDEA
T-GAUGE GALLERY**

By James Gregg (USA)

James Gregg may be submitting more photographs as the work progresses. He may also add description and explanation to some of these pictures too.

From TrainAidsA



Hmmm! T-Gauge in this Briefcase.
The idea looks interesting!

After retirement I no longer needed my briefcase that I carried for many years so I decided to build a train layout in it. I first learned of "T-Gauge" in 2009. Upon receiving my package from TrainAidsA, I started to work on it. All I had before then was a briefcase and an idea. Once I got the train, ran it on the top of my desk for a couple of days, and ran my cat crazy. Then I started to work.

Starting with 1" thick Styrofoam from my local hardware store, I cut it to fit inside the case. Once the lid was able to close due to the hinge brackets, I removed the Styrofoam and worked outside the case. I cut a hole in the middle for the controller, river, and lake. Then I covered the Styrofoam with plaster cloth.

My first attempt to install the newly covered Styrofoam with plaster into the case prompted me to place the buildings just to see what it was going to look at. Note the mountain in the center was too large so it was scrapped, and I had to make another one. I was also unable to use the controls at this point. So back to square one for a cover.



Re-Doing the cover and moving on.

To make a cover for my present controller I first covered it with Saran wrap then applied a couple layers of plaster cloth over it. Then I cut holes for the controls and added some grass, shrubs, and stones to make it look like a normal hill. Painting the white plaster cloth brown works good on all layouts for me. I would cover with grass later. If the grass does not cover completely, the brown will look like soil. Of course, if you live in a red clay state and you are modeling, you would use a redder color.



How can I get what I want in this Briefcase Creatively?

I made sure my track would lie flat. My pond is made from plaster and rock from a hobby store. I used green and brown paint for the bottom. One should not use blue in the bottom of a lake or stream, unless you are wanting a reflection of

the sky. Water is not blue; the sky is blue. Note the smaller controller cover with holes for controls.

All of these buildings were purchased from TrainAidsA and built in the winter time when I could not work in the shop. Some of them are challenging, to say the least.

I used thick paper to lay out my streets using masking tape to tape as needed to get a good pattern.



The next Step & Fine-Tuning.

At this point of the build I had one engine running. The dollar bill is for scale only. It's also a silver certificate. The street was cut from a silver piece of 1/16" material I had lying around. I painstakingly tried to paint a white center line on the road. All of the rocks and stones were formed from Hydrocal casting plaster. Molds and Hydrocal can be purchased from your local hobby store. The grass and shrubbery also came from the hobby store.



I am close.

The cover for the controller is approximately 1/8" thick and can be removed to get to the controller. I wanted to keep the briefcase as original as possible. The only thing I had to do extra was to add two snaps to pull the leather upper part

tighter, just above the dollar bill, to keep it from hitting the trees and houses once the lid is closed.

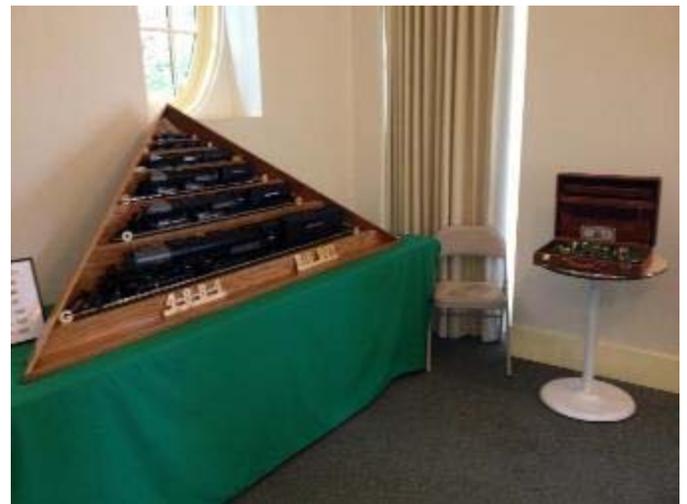
One very neat thing can be done with this layout. I can leave the engine on the track, close the case, carry it around the room, open it back up, hit the switch, and the train has stayed on the track and away it goes. Magic!!!!!!!

There are stones in the bottom of the lake. Special water was poured and hardened in the lake. Please note the illegal dumping going on at the bank of the lake. A truck has backed over starting to dump some bad stuff. OH MY!!! Where is OSHA?



Finally I have it !

I do have people that are 1/450 scale, but I'm afraid to use them. They are almost too small to see, and one sneeze would blow them away. Several people have suggested I need a boat on the water. Maybe next summer I can get a boat and some sun bathers out there.



Big Boy(s) !

Everything is glued down except the train. When the show is over, I simply close my briefcase and away I go unless of course I have to box my big boys which take about an hour.

Even though you can't see it in the larger picture, there is a "T-Gauge" engine at the top of my big boy collection. I painted one of my "T-Gauge" engines big boy colors. Starting with "G" gauge on the bottom it goes to "O", "S" "HO" "N", "Z" all of which are the big boy steam engine and then the "T-Gauge" on top. You can see my "T-Gauge" briefcase on the right. I have shown it in six different shows, and I always get the same reaction, "Oh how cute" young and old alike. Several people make a point at each show to return to see what changes have been made and have told others about it. It's always a hit at each show.

This was a fun project and continues to delight!

I always say that if your pocketbook can support your imagination, you can do anything.

Contact:

James Gregg is a retired manufacturing engineer from the casting industry. His hobbies consist of woodworking, fishing, and model railroading. He is also a collector of "big boy" steam engines which he has shown in the photo. If you have questions for James Gregg, please contact via: james_gregg2000@yahoo.com.

**CARTER MUSEUM'S HERITAGE DAY
SEASON ON JANUARY 31
YANKS GO RAILROADING!
NORTHEASTERN EVENT BEGINS 2015**

**ETSU TRAIN MUSEUM TO FEATURE CLASSICS
FROM NOTED EAST COAST RAILROADS ON
SPECIAL DAY.**

At their apex, these various operations employed tens of thousands of people and operated thousands miles of trackage, and were all serious competitors for luxury travel to distant places. This included trains such as the legendary Broadway, Capital and 20th Century limited passenger trains westbound, and others that handled through passengers from the cold northeast to sunny southeastern vacation spots. Moreover, freight traffic patterns were also aligned for rapid handling of dry goods and perishables from points west and south into the populous northeast, making this a hugely diverse mix of traffic that continues on today's Norfolk Southern, CSX and Amtrak operations.

"These companies set the stage for what is considered a golden age of American railroading during the 20th century, with each carving out a niche in the overall transportation network," states Geoff Stunkard, the museum's Heritage Days program coordinator. "Whether it was produce, products or people, they moved the nation's goods and population to market. We look forward to showing some of the memorable railroad lines from this time period on January 31st."

As always, volunteers from the Mountain Empire Model Railroaders club are heading up the effort for this day; joining them will be members from the George L. Carter Chapter of the National Railway Historical Society. Models of these trains will run primarily on the club's 24x44 foot HO scale model operation, while period-correct posters and displays making up the remainder of the exhibit.

The Carter Railroad Museum is open on Saturdays from 10:00 AM to 3:00 PM, and includes model railroad layouts, a special child's activity room, and ongoing programs. There is no admission fee but donations are welcome for its upkeep. The museum is also seeking artifacts for display, including the newest addition dedicated to the long-defunct, but well-remembered 'Tweetsie' line, the East Tennessee & Western North Carolina Railroad; this room, still under



The first of this year's Railroad Heritage Days at the George L. Carter Railroad Museum in the ETSU Campus Center Building will highlight famous railroad lines of the Northeastern region. Visitors coming in January 25th to see "Yanks Go Railroading: The Northeastern Lines." The multi-room facility will showcase its normal local displays plus both historic and model operation of the lines in the Northeast region, including the Pennsylvania Railroad, New York Central, Baltimore & Ohio, and others.

construction, again will be open for guided tours during event days.

In addition to the displays, there is also a growing research library, the National Railway Historical Society chapter, membership opportunities, and an oral history archive being established as part of the museum's programs. Info can be found online at

<http://etsu>

or

<http://johnsonsddepot.com/glcarter/cartermuseum.htm>

The Mountain Empire Model Railroaders (MEMRR) works in conjunction with the museum to demonstrate and maintain the model layouts, museum exhibits and other projects. More info can be found at <http://www.memrr.org>. Membership opportunities are available to adults, and include special benefits and model railroading enjoyment.

The George L. Carter Railroad Museum is located on the campus of East Tennessee State University, Campus Center Building, 176 Ross Drive. The entrance door is adjacent to the flashing RR crossbuck; for more information contact the Museum Director, Dr. Fred Alsop, at telephone 423/439-6838 or by email at alsopf@mail.etsu.edu.

2015 Dates to Remember: George L Carter Railroad Museum

January 31:

Yanks Go Railroading: Northeast Lines

February 28:

Appalachian Conquest: Coal and Mountain Railroads on the Blue Ridge

March 28:

5th Annual STEAM-UP

April 25:

Song of the South: Southern Railway Heritage

May 30:

Modern Railroads: Moving Mass in the 21st Century

June 26-28:

ET&WNC RR Historical Society National Convention (June 27: For Power and Glory: Passenger Trains of Yesterday and Today) - SPECIAL: Second section of Walker china collection debuts

July 25:

Go West, Young Man – Big Country Railroading west of the Mississippi

August 29:

Little Engines that Could: Industrial and Shortline Rail Operations

September 26:

ChiTown – Midwestern Lines and the Windy City

October 31:

George L Carter’s Fabulous Clinchfield Lines; HarvestFest for Little Engineers

November 14:

Homecoming at Carter’s Place – 8th Anniversary

November 28:

Precision Transportation: N&W and NS Glory

December 19:

Home For Christmas: Railroading in the Cold Weather States

MEMRR CALENDAR OF EVENTS FOR 2015

JANUARY

- 8 - Deadline for newsletter submissions
- 15 - Coordinators meeting
- 20 - Business meeting
- 31 - **Heritage Day:**
Yanks Go Railroading; Northeast Lines

FEBRUARY

- 8 - Deadline for newsletter submissions
- 9 - **100th anniversary of the driving of the last spike on the CRR**
- 12 - Coordinators meeting

- 12 - **RR Museum visit by Appalachian Christian Village residents**
- 14 - **Valentine’s Day with Thomas the Train – Little Engineers’ Room**
- 17 - **Business meeting**
- 28 - **Heritage Day:**
Appalachian Conquest: Coal and Mountain Railroads on the Blue Ridge

MARCH

- 8 - Deadline for newsletter submissions
- 8 - **100th anniversary of the last spike driven on the CRR at Trammel**
- 12 - Coordinators meeting
- 17 - Business meeting
- 20 - **Spring Fling, at the Black Olive in Jonesborough**

- 21 - Circus Day – Little Engineers’ Room
- 28 - **Heritage Day:**
5th Annual Steam-Up

- APRIL
- 8 - Deadline for newsletter submissions
- 16 - Coordinators meeting
- 21 - Business meeting
- 25 - **Heritage Day:**
Song of the South; Southern Railway Heritage

- MAY
- 2 - 70 Years of Thomas the Train- Birthday Party for Thomas – Little Engineers’ Rom
- 8 - Deadline for newsletter submissions
- 9 - National Train Day
- 14 - Coordinators meeting
- 19 - Business meeting
- 30 - **Heritage Day:**
Modern Railroads; Moving Mass in the 21st Century

- JUNE
- 8 - Deadline for newsletter submissions
- 5-7 - Blue Plum Festival
- 11 - Coordinators meeting
- 13 - Carter Chapter NRHS rail excursion:
Three-Rivers Rambler/steam shop/river boat
- 16 - Business meeting
- 26-28 - ET&WNC RR Historical Society Annual Convention, Johnson City, TN
- 27 - **Heritage Day:**
For Power and Glory; Passenger Trains of Yesterday and Today
Special:
2nd section of Walker china collection debuts

- JULY
- 8 - Deadline for newsletter submissions
- 3-4 - Jonesborough Days
- 16 - Coordinators meeting
- 21 - Business meeting
(Plan annual picnic)
(Poll members for site for annual Christmas party)
- 25 - **Heritage Day:**
Go West Young Man—Big Country Railroading West of the Mississippi

- AUGUST
- 8 - Deadline for newsletter submissions
- 13 - Coordinators meeting
- 18 - Business meeting
Annual picnic (date to be announced)?
- 29 - **Heritage Day:**
Little Engines That Could; Industrial and Shortline Rail Operations

- 8 - Deadline for newsletter submissions
- 10 - Coordinators meeting
- 15 - Business meeting
- 26 - **Heritage Day:**
ChiTown-Midwestern Lines and the Windy City

- OCTOBER
- 8 - Deadline for newsletter submissions
- 15 - Coordinators meeting
- 20 - Business meeting
(Nomination of offices committee formed)
(Planning of annual Christmas party)
- 31 - **Heritage Day:**
Precision Transportation; N&W and NS Glory
- 31 - Press release for Take a Toy Train to Work Day
- TBA - Carter Chapter Fall Rail Excursion

- NOVEMBER
- National Model Railroad Month
- 8 - Deadline for newsletter submissions
- 12 - Coordinators meeting
- 13 - Take a Toy Train to Work Day
- 14 - Carter RR Museum’s 8th Anniversary—Homecoming at Carter’s Place (tie to 100th anniversary of the CRR last spike driven at Trammel)
- 17 - Business meeting
(Election of officers)
- 28 - **Heritage Day:**
George L. Carter’s Fabulous Clinchfield Lines: Harvest Fest for Little Engineers

- DECEMBER
- 8 - Deadline for newsletter submissions
- 10 - Coordinators meeting
- 15 - December Annual Christmas Party
- 26 - **Heritage Day:**
Home for Christmas; Railroading in the Cold Weather States



The Hampton Station on the ET&WNC RY Layout

SEPTEMBER

SPRING FLING

The GEORGE L. CARTER Railroad Museum plans to hold its Spring Fling at the BLACK OLIVE Restaurant 125 East Jackson Boulevard, Jonesborough, TN. Friday, March 20th at 6pm.

Reservations cost \$1 per person - the money to go to the museum. Each party will place their order from the menu and pay their own bill plus gratuity. This is an ADULT ONLY party. Reservations are required in order to give the restaurant a head count as Friday evenings are very busy. Please contact Jim Pahriss at 423-753-8045 or pahrissj@comcast.net to make your reservation. Directions to the Black Olive are provided below.



**MOUNTIAN EMPIRE MODEL
RAILROADERS
BUSINESS MEETING MINUTES
January 20, 2015**

The meeting was called to order at 6:35 by club president Fred Alsop. We had nineteen members and no guests in attendance. Fred told us that Danielle Holder (Michelle Kelly's replacement) will be Helping Taylor Jessee in the Little Engineers Room. Danielle is a Communications major and has some expertise in web site creations. She is excited about her position at the museum and the possibility of helping the club with our web site.

OFFICER REPORTS:**SECRETARY:**

Debbi Edwards reported she purchased 1 book of stamps, 2 get well cards and 2 sympathy cards which were mailed out to the proper recipients.

TREASURER:

Next was the treasurer's report. Gary Emmert reported that for December we had a starting balance of \$2709.78 with \$572 in income and \$361.92 in expenses for an ending balance of \$2919.86. For January we had an income of \$475, expenses of \$99.05 for an ending Balance of \$3295.81 with an available balance of \$902.91.

Fred reminded us that membership dues are now due and that he will send E-mail reminders to all members who have not renewed.

WEBMASTER:

Bob Jones reported that the member list will be updated with current members. He will be deleting the links for past meetings and coordinators meeting notes. He will also be adding links for excursions and other items of interest.

John Edwards reported that he will be sending out the newsletters, notices and press releases to all club members with computer access.

President Fred Alsop informed the members that Geoff Stunkard writes the press releases which then go to University Relations to be edited and condensed. They are then released to the various media outlets and also E-mailed to the membership.

Newsletter Editor:

Ted Bleck-Doran reported that the current newsletter is 24 pages. Newsletter submission deadline will be the 8th day of the month.

Fred Alsop thanked Ted for all the hard work he puts into our great newsletter.

Vice President:

John Carter reported that the program for next month's meeting will feature Gary Emmert who will be discussing our new HO operating timetable.

PRESIDENT:

Fred Alsop then gave the meeting attendees a short overview of his travels this past month and thanked everyone for their hard work and keeping things running smoothly in his absence. He then thanked the club members for getting the Cope layout to Appalachian Christian Village in support of Michelle Kelly's special rail related project. Michelle thanked the members with donuts on Saturday morning which quickly disappeared. Fred also informed the membership that thanks to Dan McCleod the Tupelo Honey layout has been running smoothly for the past couple of weeks. Dan feels it is about ready to be turned over to Tupelo Honey. The owner of Tupelo Honey would like someone to service the layout on a regular basis. They will set up a contract and this will be a paid position. Info will be put in the newsletter and website to get the word out.

OLD BUSINESS

1. New Signage for the museum will be up soon. They are just waiting on sign posts. We will have signs on State of Franklin, the south side of the Campus and possibly a large sign hanging over the State of Franklin entrance. We will also have a large sign on the outside wall of the museum. Our new street (911) address is 176 Ross Dr.
2. Fred asked the members if there is any interest in continuing the planned learning sessions. Members were receptive to continuing these sessions and came up with several ideas for classes.
3. John Carter reported that there were no new updates on the HO wiring project.
4. John Edwards reported that the flashing red light, switch and wiring were purchased for placement over the Wye and just needed someone to run the wires in the ceiling. Jonathan Gilliam was quickly volunteered for this project.
5. Don Ramey requested that more care be taken when using the lift up bridge and to make sure it was completely down before walking away.
6. Inquiries regarding our train show were made by Fred and Bill Hensley. It was decided that it was too late to

schedule one for 2015 but now is the time to start thinking of one for 2016.

- Irene Hughes with Appalachian Christian Village asked if we would open the museum for a visit by the residents on Thursday February 12th and we need volunteers to work this event starting at 10:30AM.

NEW BUSINESS

- The Heritage Day event for January will be “**Yanks go Railroad**”, Northeast Lines. Geoff Stunkard said anything north of the Mason-Dixon Line. The china display will be left out another month.
- Fred read an E-mail from Hobie about the 100th Anniversary of the spike driving ceremony at the south end of Trammel on February 9th, 1915. They were trying to plan a 100th birthday party and asked if we were interested in participating. Due to the late notice it was decided not to. Gary Emmert suggested placing a sign on our baggage cart commemorating this event. Geoff Stunkard suggested we tie the anniversary in with our homecoming which is also the Clinchfield Heritage day in November.
- Fred Alsop then explained Article IV of our current bylaws. This article states clearly that:

A full adult member is defined as one who pays “full member” dues as set by the club in Article VIII and is willing to construct or assist with the building and/or operation of one or more modules or layouts which meets the club specifications. Only paid up full members will have access to the museum key box.

This key box code is changed yearly and will be changed on January 31st. Only full paid up members will be sent the key box code by E-mail. Full paid members are not to

give out this code to **ANYBODY** even if you think they are a paid member.

After much discussion Jim Pahr made a motion seconded by Bob Jones to remove the associate membership classification effective 2016. The motion was tabled and a committee formed to work on the wording and will report back in 2 months. Committee members are Gary Emmert, Ted Bleck-Doran and John Edwards.

- Ted Bleck Doran gave a brief overview of the new HO Timetable draft. John Edwards stated that the club has been using the Dispatcher/Yardmaster Trainsheet for about 6 weeks now and it helps the dispatcher/yardmaster do his job more efficiently.
- John Carter has the opportunity to order Clinchfield hopper cars for \$10 per kit. See John Carter for more info.
- Coordinator financial needs for the coming year were discussed. \$500 was set aside for reserve, \$714 for electrical, \$1000 for track and \$400 for parties for a total of \$2614.

VOLUNTEER CALL

Fred called for volunteers to man the museum on Saturdays. We then discussed the calendar for 2015. It was also discussed that we will take an E-mail poll with venue options for our annual Christmas Party.

ADJOURNMENT MOTION

Jim Pahr made a motion seconded by Geoff Stunkard to adjourn the meeting at 9PM.

*Respectfully submitted,
Debi Edwards
MEMRR Secretary*

RIP TRACK LESSONS FEBRUARY'S “HOW-TO” CLASSROOM February 19, 2015

Fellow MEMRR Members:

We are continuing, by popular demand, the series of **How-to-do-it** workshop clinics that we began in the Fall of 2014 with a program for members that I feel will be most helpful to all of us. **Jim Hoit** has been our coordinator for our RIP Track for several years repairing club and museum rolling stock and/or upgrading them to NMRA standards for operation on our layouts.

On **Thursday February 19th** Jim will be presenting two similar classes, **one at 5:00 PM and one at 6 PM**, that will demonstrate how to bring your freight and passenger cars into their best performance trim. He will show us how to gauge wheels and install wheels; how to change out couplers and adjust coupler height and body mount coupler; how to bring cars into proper weight and balance, and much, much more. Mark this workshop on your calendars and come learn how to improve the running of you cars on any layout.

Regards,

*Fred Alsop
President, Mountain Empire Model Railroaders*

THE VIEW FROM THE ENGINEERS SIDE OF THE CAB THE PRESIDENT'S COLUMN

February finds us with rollercoaster weather patterns that seem to be leaning towards spring for a few days and then back to winter with very cold temperatures and snow flurries the next. A very good time to be a model railroader with new kits to complete, new locomotives to test, and perhaps to become more involved in the multiple projects that are underway at the George L. Carter Railroad Museum that the club calls home.

MEMRR members please welcome our newest member, **Carl Hacker**. Carl is primarily an HO scale modeler and will be helping us get some of the kits for the ET&WNC RR rolling stock put together so we can have some freight for our little narrow gauge engines to pull. Carl is a great guy and I know you will find him an easy, knowledgeable fellow to talk to about model railroading. He is ready to contribute to the club so please seek him out at your earliest opportunity and introduce yourself.

Speaking of the Tweetsie Project, the long-anticipated 6th Edition of the *HON3 Annual* finally was published by its new owner, White River Publications, and **Geoff Stunkard's** terrific photos of our museum's layout grace the 10 page article he wrote about our modeling of the ET&WNC RR in HO_{N3} scale. The article is outstanding and is preceded by two articles in the same edition that also cover 10 pages written by Johnny Graybeal, author of many books on the Tweetsie, about the history and the locomotives of the prototype railroad. Geoff's article gives a brief history of the Tweetsie railroad and carries the reader through some of the history of the Carter Railroad Museum's being established on the campus of East Tennessee State University and then into the layout itself. Everyone should take pride in our joint accomplishment and the outstanding achievement of creating a layout that has been judged worthy of being in a model railroad annual (not one of the monthly published model railroad magazines that many of us subscribe to—but a publication that only sees print once a year!). Geoff did a great job of giving many of our members the credit they richly deserve for their continued contributions to the layout that is still a work in progress. *This is a big deal!* How many model railroad clubs do you know personally that have had their layout featured in a national/international publication? Kudo's all around!

We had HobbytownUSA order 20 copies for us and they sold out in the first week. I have 50 additional copies coming to the Railroad Museum that will be delivered by the time you are reading this. So, if you missed getting one of the Hobbytown copies please see me, **Jim Pahr** or **Gary Emmert** and we can sell you one or more. I also have one copy that

was purchased just for the museum's library and you may check it out from our librarian. I have had the opportunity to present a copy of the annual to **ETSU President Brian Noland** and have made an appointment for later in the month to present one to **ETSU President-Emeritus Paul E. Stanton, Jr.** Both presidents have been extremely important in the establishment and in their continued support of our museum and Geoff has indicated this in his article.

Bill Hensley continues to work to pull together a big train show for us to sponsor, as we decided we wished to do at a business meeting in November 2014. Bill is working with a person out of state who has a lot of experience organizing and producing train shows and who has contact information for lots of vendors. We will be pursuing the best Johnson City venue we can find, probably on the ETSU campus, or nearby, for some time in 2016. Other club members have also been compiling lists of possible vendors. Waiting and working on this project for a 2016 opening will give us plenty of time to learn about creating a big train show instead of going to one someone else has established and will be a great way to raise additional funds for the club and the museum. If we do it right and the show is successful, Johnson City could become an annual regional venue for a train show that could draw thousands of visitors each year. If Bill asks you for help, suggestions, or whatever, regarding this project please do what you can do to be of assistance. We will be in the planning stages for this first-ever event for our club for many months to come.

Several MEMRR members, including **Ted Bleck-Doran**, **John Edwards**, and **Gary Emmert** (please forgive me if you are one of the working group and I left your name out because of my faulty memory) have been working diligently on the creation of a *Time Table* for use on the club's HO layout. Their draft includes a bi-folded booklet that has great information on engineer whistle signals, use of the engine bell, end-of-train designation, radio communications, point-to-point operations routing for the layout, a switch list for the yard, a dispatcher/yardmaster trains sheet, system start-up and system shut-down information, and a flow chart for possible radio communications. There is a tremendous amount of most useful information packed into the time table that will make it indispensable for all of us as we learn better ways to operate our trains on our club layout. Please express your thanks to these fellows for initiating this task and we look forward to having the finished time table in our hands and by our sides as we operate our locomotives in our HO world.

We will be hosting our first **birthday party** at the railroad museum since the summer on Saturday, **February 21** for two Little Engineers and **Taylor** and **Danielle** and I could really use some help to decorate the Party Room we will be using in Brown Hall (room 131) and getting everything ready so the children and their guests have a great time on the honorees' birthdays. These children and their parents are "regulars" at our museum so please help us show them a great time.

The Little Engineers room will also be the site of a special Valentine's Day event for children on February 14th. **Taylor** and **Danielle** will have a Thomas the Tank special going on for the children who look forward to their Saturday museum visits. Wait until you see what they have planned!

MEMRR Coordinator for our RIP Track, **Jim Hoit**, will conduct two back-to-back workshops for members only on improving the performance of your rolling stock. He will detail the techniques for gauging wheel sets, getting proper coupler height, proper car weight and balance and other important tip to make your cars track better and spend less time on the ground. The workshop/clinics are set for **5 PM** and **6 PM** on **Thursday, February 19th** in the Carter RR Museum's large workroom, room 108. Please come and see what Jim has to offer to increase your modeling fun.



THE SALT HOUSE – JONESBOROUGH TN
NOW A DISTILLERY BY THE NS TRACKS

Our Heritage Day Coordinator, **Geoff Stunkard**, has created a list of great 2015 Heritage Day events for us and we will be celebrating ***Appalachian Conquest: Coal and Mountain Railroads on the Blue Ridge*** on Saturday, February 28th. So, make your plans to celebrate this popular event by bringing in your favorite display items for our display cases and your favorite locomotives and consists to run on the museum and club layouts on that day. Our visitor traffic has increased greatly since we have been doing these special publicized events each month and this one should be no exception. Please plan to participate as we are sure to draw a lot of visitors (weather permitting—it's still winter) to see your long coal drags and the passenger and mixed consists that typify the railroads of this part of the Appalachians. Bring in your L&N, Southern, N&W, Clinchfield, CSX, NS, B&O, C&O, Interstate, etc. and the short lines that penetrated and conquered these mountains to carry out their resources to distant markets and run them for your fellow members and our visitors.

We have a big social event for the MEMRR, the Carter Chapter NRHS and the Carter RR Museum coming up in March. When we put together our annual calendars (MEMRR and Carter Chapter NRHS have been distributed and can be found on the club website) at our club's January business meeting we jointly decided that we would like to have another **Spring Fling** similar to the first one we had in 2014, but at a different venue. The consensus from both clubs was that the restaurant of choice for 2015 would be the **Black Olive Restaurant** in Jonesborough, TN. **Jim Pahris** agreed to organize the event and to make the reservations for us. He is selling reservation tickets for \$1 to get a headcount for the restaurant, each participant will order their choice of meal items from the restaurant menu after we are seated and each of us will pay for their own meals (or wash dishes later). The date is set for the evening of Friday, 20 March. Details and a map to the restaurant have been distributed via email. Please contact Jim if you are interested and make your reservation for the evening through him. This should be a fun evening for all of us, including our spouses and/or significant others and I urge you to plan to attend.

The next time you come to the Carter RR Museum from the north side off State of Franklin Rd. via Jack Vest Drive on the ETSU campus, or from Southwest/Seehorn streets on the south side of the university campus; look for the rectangular signs that point to the "Carter RR Museum". New signs have been created and installed at every intersection on the campus from these two boundary roads to get visitors to our museum doorstep. You will also notice on the west end of the building we are housed in a big new sign that marks the museum. All this is further recognition of the value the university is placing on our railroad museum that is the result of your volunteered work and the outstanding exhibits you have helped to create that are bringing a lot of visitors to the university campus on weekends. There are 4 other museums on campus, but we are now the best signed one making it much easier for our train enthusiasts to locate us on a very complex campus.

I attended a meeting on February 6th with two ETSU vice presidents and the university's legal counsel to begin the process of creating an agreement between ETSU and the Town of Jonesborough that would seek to detail the requirements and conditions for both parties to join in with the goal of establishing a satellite of the Carter Railroad Museum in Jonesborough. You have been kept aware of these proceedings based on the town's request of the University for such a Museum since early last spring. This meeting is just another step in providing the documentation necessary for a formal agreement that would have to be approved by the Town of Jonesborough and then by the President of ETSU before any further plans for implementation would be made. The final decision will be that of ETSU President Noland. As I become aware of any

news on this possible undertaking I will do my best to keep you updated in a timely fashion.

If you know of members who have not yet renewed their memberships for 2015 please use your influence to urge them to do so, and as soon as possible, so they will not miss editions of *The Signal Bridge* and the opportunities membership in the MEMRR affords to us all. I personally wrote letters to everyone on our treasurer's list of members in areas in mid-January to remind them that the deadline for renewal was drawing near and asking them to renew with us. Many of our members have responded and will continue with us this year. Some have not and it is these folks that I need

LOCOMOTIVE EASILY CARVES THROUGH SNOWDRIFTS

Spectacular video shows train creating white clouds like a skier in fresh powder, February 05, 2015 by [David Strege](#)



There is a locomotive behind that wall of exploding snow in New Brunswick, Canada. Photo is a screen grab.



your help with to keep them with us as we continue to explore and enjoy the privileges of membership in an outstanding model railroad club and its affiliation with a wonderful little railroad museum.

Hear the sound of the whistle of the train in the night and dream of all the destinations yet to come!

Fred J. Alsop III

*President, Mountain Empire Model Railroaders
Director, George L. Carter Railroad Museum, ETSU*

The historic snowfall in Salisbury, New Brunswick, was not enough to stop a Canadian National Railway locomotive on Tuesday. The red train barreled down the snow-covered tracks, kicking up white clouds like a skier in fresh powder.

"I'm not sure how the train crew can even see with all that snow on the locomotive's nose!" wrote Darren, the videographer.

Darren, who goes by [containerman2](#) on YouTube, has produced several videos of trains and container ships, but none are as popular or as spectacular as this one:

After three blizzards struck Southern New Brunswick, Darren, who lives in Riverview, New Brunswick, set up his camera at a railway crossing at mile 11 of the CN Sussex Subdivision.

"I guess I was a bit too close to the track!" Darren wrote. At the 1:14 mark, you can see him clearing the camera lens.

After that, it was just one long train passing by.

The Electronics Shop

Frank Fezzie

Our Mountain Empire Model Railroad modular HO layout and the museum's new ET & WNC layout both use the Digitrax DCC system to operate trains and to control turnouts. The system gives us a lot of ability to control operation of the engines such as sound and lights in addition to the basics of speed and direction.

It is important that the ability to control these functions be reliable so that an engineer can trust the system to execute his commands. Which raises this month's question; what causes the DCC system to fail and what can be done to make the system more reliable? Some are obvious, such as a dead battery in a throttle, and are easily corrected by the engineer. The most critical is a failure of the Loconet itself.

The basic components of our systems are;

1. **Command Station** – The central brain of the system. It handles all communications between the operators and the trains. It produces the signal that is put on the rails to power and control the trains. The low power version of this signal is called Railsync, and is amplified to a higher current capacity to feed to the rails as Track Power.
2. **Booster** – Produces Track Power for a section of the layout by using the Railsync signal from the Command Station.
3. **UP5** – A small panel mounted on the fascia of the layout that throttles or other devices can be plugged into in order to directly connect with the command station.
4. **Throttle** – The device that operators use to control trains and turnouts on the layout. It can be plugged into a UP5 or it can operate in a wireless mode using radio or infrared light to send signals to the command station via a radio receiver.
5. **Radios (UR90, UR91, UR92)** – These devices are the receivers of radio or infrared signals that allow throttles to operate in wireless mode.

The Command Station, Boosters, UP5's, and Radios are connected together by the Loconet. When a throttle is plugged into a UP5, then it is also connected to the Loconet. Here are a few more important terms;

- **Loconet** – The overall standard that connects devices in a Digitrax DCC system. It consists of the following three parts.
- **Loconet Cable** – a flat 6-wire cable with connectors that carries the Loconet signals. Pins 2 and 5 carry the signal ground for the system. Pins 3 and 4 carry the Loconet Data signal. Pins 1 and 6 carry the Railsync signal.
- **Loconet Data** – are the messages between any of the devices connected to the Loconet. For example, the

throttles sends Loconet Data messages to the command station indicating the desired speed and direction for an engine to run.

- **Railsync** – is the signal generated by the Command Station that will be amplified to become Track Power and put onto the rails. It contains a steady stream of commands for all engines under the control of throttles and indicates what the engines should be doing. It is used by Boosters to create Track Power for sections of the layout. In addition, devices such as throttles and radios can draw their operating power from this signal, but the capacity of Railsync for this purpose is extremely limited and should not be depended upon.

In summary, the Loconet Data signal is how the Command Station and all devices except equipment on the track can talk to each other. Railsync, which is amplified to become Track Power, is how the command station sends commands to equipment on the track such as engines.

The Loconet functions like a big “party line” did back in the old days of telephone service. All devices connected to the Loconet can “hear” all the messages, and any device can send messages, or “talk”, and all the other devices will see those messages. But just like to old “party line”, any device that malfunctions can jam the Loconet and cause a communication failure for all the other devices that are connected. As a result, engineers will lose control of their trains.

Experience has shown that throttles are the most common source of problems on the Loconet because they take a lot of abuse. They get dropped and bumped. The batteries go dead. They get plugged into and unplugged from the system. The cord gets pulled, straining the circuit board inside the unit, the cord, and the connector at the end of the cord. The jack that they get plugged into collects dirt and lint making for an unreliable connection. None of the other equipment on the Loconet are subject to this treatment and therefore are much less likely to malfunction and cause a problem.

When a throttle is plugged into a UP5 and connected to the Loconet, it is connected to both the Loconet Data signal and to the Railsync signal. A malfunctioning throttle can render either or both of the signals unusable, resulting in a failure of the whole system and affecting all users of the system. While many other devices are also connected to the Loconet, such as command station, boosters, and radios, they seldom fail because they do not take the abuse that throttles have to endure. The key to improving reliability of a Digitrax system is to prevent a malfunctioning throttle from causing the Loconet to fail.

In 2008 Digitrax launched a device called the Loconet Repeater or LNRP. This device connects to an existing

Loconet and creates a second Loconet that can connect to any Loconet device. The LNRP receives all messages on the Loconet Data signal from either the original Loconet or the second Loconet and passes them along to the other. It also receives the Railsync signal from the original Loconet and sends it out on the second Loconet. For very large layouts the LNRP allows us to overcome the length limitation on a Loconet network by creating a second Loconet, or even a third, fourth, or more as needed.

The LNRP has a very important second feature that we can use. Any malfunction that jams or shorts out the second Loconet created by the LNRP does not affect the original Loconet that the LNRP is connected to. The LNRP isolates the second Loconet until the problem is fixed and then it automatically resumes normal operation. The original Loconet is protected from any malfunction on the second Loconet and is therefore called the "Protected Loconet." The second Loconet that is created by the LNRP is called the "Standard Loconet" by Digitrax.

The "Protected Loconet" becomes the heart of the system and to it are connected the Command Station, Boosters, Radios, Computers, and one or more LNRP's. Throttles are not normally allowed to connect to the "Protected Loconet." All UP5 panels that throttles will use are connected to the "Standard Loconet" created by the LNRP. I prefer the term "Throttlenet" for the "Standard Loconet" as it is more descriptive of how we use the LNRP.

Should a malfunctioning throttle be plugged into a UP5, only the "Throttlenet" will be affected. The "Protected Loconet" connecting the command station, boosters, computer, radios, and any throttle operating in wireless mode will not be affected and will continue to operate normally. The only devices affected will be any other throttles that are plugged into UP5's connected to the disabled "Throttlenet". Multiple LNRP's could be used to create multiple "Throttlenets" and thereby isolate plugged-in throttles from each other, but general experience has shown that one LNRP is enough for most layouts if the engineers operate primarily in wireless mode. If a significant number of engineers routinely operate with the throttles plugged into UP5's then it may be advantageous to create several "Throttlenets" for the layout to minimize the number of throttles affected by a failure.

We plan to incorporate an LNRP into the HO modular and the ET & WNC layouts this year to create a "Throttlenet" as part of a program to bring the DCC systems up to the best practices that have been developed over the years. All UP5's that are intended for use by throttles will be isolated onto this "Throttlenet".

If you have a question about electronics in model railroading, please send it to me via e-mail at frank@ffweb.info and I will do my best to answer it for you, either directly or in this column.

