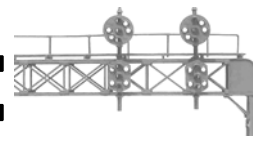


# THE SIGNAL BRIDGE



Volume 17

NEWSLETTER OF THE MOUNTAIN EMPIRE MODEL RAILROADERS CLUB  
JUNE 2010 ISSUE

Number 6

## CLUB OFFICERS

**President:**  
Fred Alsop

**Vice-President:**  
John Carter

**Secretary:**  
Donald Ramey

**Treasurer:**  
Duane Swank

**Newsletter Editor:**  
Ted Bleck-Doran

**Webmaster:**  
John Edwards

**LOCATION**  
ETSU Campus,  
George L. Carter Railroad  
Museum



## HOURS

Business Meetings are held  
the 3<sup>rd</sup> Tuesday of each month.  
Meetings start at 7:00 PM at  
ETSU Campus,  
Brown Hall Science Bldg,  
Room 312,  
Johnson City, TN.

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

Work Nights each Thursday  
from 5:00 pm until ??



## MEMRR Clinic: Athearn Diesel Axle Gear Replacement

By Joe Robert with Don Raney



P2K HO Scale Diesel Locomotives

### Tools Required

- Foam Cradle
- Needle Nose Pliers
- HO scale Standards Gauge
- Precision flat blade Screwdriver

Ready to Start



Place Frame upside down in cradle



Gear Box Cover removal: Carefully pry up one end of gearbox using precision flat blade screwdriver



Gearbox cover removed



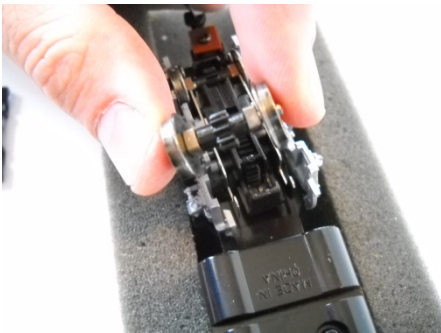
Split Axle Gear

### Thursdays

Are Work Nights Come join the Fun – There's always a project going on from 4:30 to 7:30 or later

### Saturdays

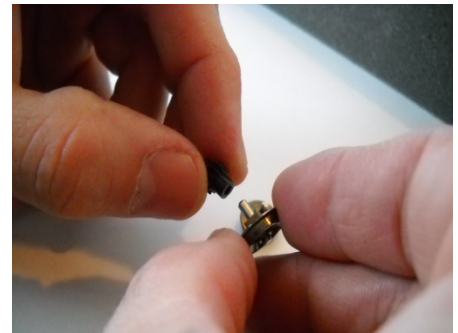
Are Open Sessions for Public Viewing – Sign up to help out for 9:30 -12:30 or 12:00 -3:00 or stay the day



Axle set is removed by gently lifting with a slight pressure between thumb and forefinger. Leaving truck assembly intact.



Separating Gear from Axle Wheelsets



Completing Axle Separation  
Axles are separated by pulling wheel unit from Gear



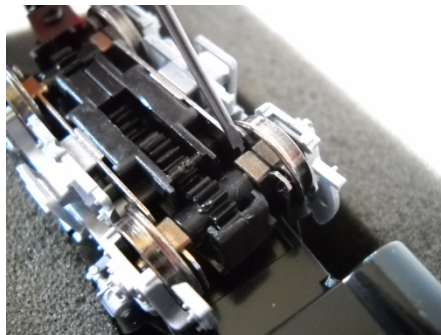
Axle Unit Dissassembled



Axle Reassembly  
Place wheel-sets into each end of gear and press together



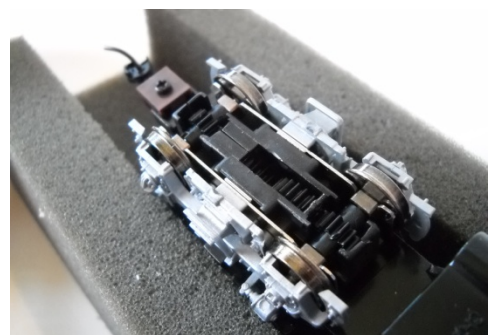
Gauging Wheel-sets  
Note slight clearance on wheels at gauge



Replacing Gauged Axle in Truck Assembly  
Note: Bronze bushings aligned with Screwdriver.



Additional Axle Checks  
Checking second axle revealed identical problem. Repeat corrective procedure for each axle that is split.



Ready to close up  
Now is time to lube all gears and bushings before cover installation.

## Track Side Details: Derailer at Jonesborough TN



# Train Watching at Mountain Empire Model Railroad Club: Amtrak in Miniature - Part 1

I have recently started collecting Amtrak Passenger equipment and want to make up a couple of representative train sets to run on the club layout Saturdays. This has taken me down a path of research to see what Amtrak has run in the past, what is contemporary, and what's in store for the future. In the next several issues I'll share what I've found out about Amtrak's fleet past – present – and future.

To start let's look at the EMD F40HP. The information is drawn from Wikipedia.com, the photos are from Geno Daily's Amtrak Photos archive at <http://www.trainweb.org/amtrakpix/>, and Amtrak Photo Archive at <http://www.hebners.net/amtrak/>.



EMD F40PHR #300 Phase III Paint Scheme at Depew New York  
Photo by Geno Daily

The General Motors Electro-Motive Division model **F40PH** is a 4-axle 3,200 hp (2.4 MW) B-B diesel-electric locomotive intended for passenger service, built from 1976 onwards.

### History

Introduction of the F40PH series was spurred as a replacement for the EMD SDP40F type, Amtrak's first series of locomotives built new for them (since its inception in 1971). Problems with the SDP40F led to the introduction of the F40PH, based on the proven EMD GP40 series freight locomotives using a two axle truck of known reliability. (The term "F40" by itself can lead to confusion, because the first locomotive to bear that designation was the F40C, a passenger C-C locomotive derived from the SD40-2, ostensibly similar to the SDP40F but with an HEP generator.)

While Amtrak's initial order for F40PH-type locomotives specified a 3,000 horsepower (2.2 MW) locomotive, the next order (from the Chicago RTA, later to become known as Metra) increased that specification to 3,200 horsepower (2.4 MW), which was the norm for most orders afterwards. Amtrak's earlier units were later updated to this specification as well. Notable exceptions are the units purchased and operated by VIA Rail Canada, which are rated at 3,000–3,200 horsepower (2.2–2.4 MW). The F40PH was purchased by many commuter railroads, such as the MBTA, Tri-Rail, CalTrain, NJ Transit and GO Transit; all except GO Transit still operate these locomotives. Amtrak's large fleet of F40PH-type

locomotives has largely been retired, scrapped, or sold following the purchase of GE Genesis passenger locomotives in the late 1990s and early 2000s. The largest fleet of these locomotives now operates in the Chicago metropolitan area on the Metra system, and totals 117 units. Included in this fleet is the last F40PH built by EMD (as an F40PHM-2) in 1992, Metra #214. After Metra, VIA Rail Canada has the second largest fleet of F40PH-2's which totals 54 units.

Dozens of F40PH units remain in service on various tourist and freight railroads, such as CSX (for use on business trains), the Grand Canyon Railway and the Ski Train.

Commuter agency Metrolink purchased four second hand from Amtrak with hopes to repower them with prime movers from second hand EMD SD60s bought from UP. Only one survived, as SCAX #800.

EMD F40PH series	
Power type	Diesel-electric
Builder	GM Electro-Motive Division (EMD) General Motors Diesel (GMD)
Build date	1976 - 1991
AAR wheel arr.	B-B
Gauge	4 ft 8½ in (1,435 mm)
Prime mover	EMD 645E3
Cylinders	V16
Top speed	103 mph (166 km/h)
Power output	3,000–3,200 hp (2.2–2.4 MW)
Nicknames	"screamer" "screaming thunderbox"

A handful were bought by shortline railways, and some continue to operate today, after receiving a front platform, made possible by shortening the nose.

### Equipment

The F40PH is equipped with a turbocharged EMD 645E3 V16 cylinder, two-stroke, water-cooled diesel engine (prime mover) that develops 3,200 hp (2.4 MW) at maximum rpm. Due to the high-pitch generated from its EMD 645E3 prime movers, the units have often been nicknamed by railfans and crews alike as "screamers". The main (traction) generator converts mechanical energy from the prime mover into electricity that is distributed through a high voltage cabinet to the traction motors. Each of the four traction motors are directly geared to a pair of driving wheels. The gear ratio of the traction motors to wheel axle determines the maximum operating speed of the locomotive; a standard F40PH has a gear ratio of 57:20 which provides a top speed of 103 mph (166 km/h).

The F40PH has a fully enclosed carbody which provides a cleaner, somewhat more streamlined appearance, than those of conventional hood unit type construction. While enroute, all-weather access to components is possible, passage through the engine room (and to trailing units) normally is used only during maintenance at repair points.

To support passenger service, the F40PH is equipped with a secondary electrical generator known as the head end generator. The HEP unit generates three-phase AC power at 480 V AC, 750 A or about 500 kW to provide power to the cars for lighting, heating, and air conditioning. Because head end power must be delivered to the rest of the trainset at a constant frequency, the prime mover in these locomotives must turn at a constant high speed (900 rpm) while delivering head end power (even if the locomotive is standing still). Power to the traction motors is controlled by varying the field excitation of the main (traction) generator.

Some later versions of the F40PH have a second small diesel engine at the rear of the locomotive driving the head end power generator. In these versions the prime mover can vary its speed depending on the amount of tractive effort needed. These locomotives can be identified by a small secondary diesel exhaust at the rear end of the locomotive, in addition to their quiet idle. The MPI version of the F40PH was built by Morrison-Knudsen.

### Disposition

#### Cabbage Car Conversions

In later years, as Amtrak's F40PH fleet was being replaced by the newer GE Genesis-series locomotives, Amtrak converted a number of the retired units—generally ones with major mechanical problems limiting their value in the resale or lease marketplace—into "Non-Power Control Unit" cab cars. Commonly known as "Cabbages," a portmanteau of "cab" and "baggage," these units had their prime movers and traction motors removed, and a large roll-up door installed in the side, allowing the former engine compartment to be used for baggage. The units were renumbered into Amtrak's car-series numbers by adding "90" before the former locomotive number; thus, the original F40PH, number 200, became NPCU number 90200.

#### Extant former Amtrak examples

There are currently a few ex-Amtrak locomotives that are in railroad museums, private owners and various commuter agencies; listed by Amtrak road number:

- AMTK 231, owned by Chris Fussell/Friends of SP 4449 in Portland, OR.
- AMTK 237, Undergoing rebuild for revenue service on the Grand Canyon Railway (GCRX 237).
- AMTK 239, In Daily Service on the Grand Canyon Railway (GCRX 239).
- AMTK 242, Denver Ski Train, SKTX 242
- AMTK 243, Agence métropolitaine de transport (AMT) 243
- AMTK 256, Metrolink LA (sold, unknown disposition)
- AMTK 265, Maine Eastern Railroad 265, now Transport Ferroviaire Tshuëtin TSH600
- AMTK 270, Agence métropolitaine de transport (AMT) 270

- AMTK 280, CSXT 9998
- AMTK 281, California State Railroad Museum in Sacramento, CA.
- AMTK 283, Denver Ski Train, SKTX 283
- AMTK 287, Agence métropolitaine de transport (AMT) 287
- AMTK 288, CSXT 9999
- AMTK 291, Maine Eastern Railroad 291, now Transport Ferroviaire Tshuëtin TSH601
- AMTK 295, In Daily Service on the Grand Canyon Railway (GCRX 295).
- AMTK 300, Metrolink LA (sold, unknown disposition)(this unit is unconfirmed, no photos)
- AMTK 307, under restoration at the NCTM in Spencer, NC.
- AMTK 308, MNCR 4193 (converted to F40PH-2CAT)
- AMTK 310, MNCR 4194 (converted to F40PH-2CAT)
- AMTK 315, Acquired by NCDOT for use on passenger train service between Raleigh and Charlotte known as the Piedmont.
- AMTK 319, Agence métropolitaine de transport (AMT) 319
- AMTK 332, Nashville Music City Star / MCS 120
- AMTK 338, Metrolink LA (sold, unknown disposition)
- AMTK 363, Tri-Rail 810 (underwent conversion to add separate HEP generator)
- AMTK 365, VRE V33
- AMTK 372, Agence métropolitaine de transport (AMT) 372
- AMTK 379, Tri-Rail 811 (underwent conversion to add separate HEP generator)
- AMTK 381, Nashville Music City Star / NERR/MCS 381 (on lease from NERR)
- AMTK 390, CSXT 9992
- AMTK 395, CSXT 9993
- AMTK 396, Metrolink LA / SCAX 800
- AMTK 398, Nashville Music City Star / MCS 121
- AMTK 399, Nashville Music City Star / MCS 122
- AMTK 400, Agence métropolitaine de transport (AMT) 400
- AMTK 411, Agence métropolitaine de transport (AMT) 411, ex GO Transit 511

#### Variants

- EMD F40PH
- EMD F40PHR
- EMD F40PH-2
- EMD F40PH-2C
- EMD F40PH-2CAT
- EMD F40PHM-2
- M-K F40PHL-2
- M-K F40PHM-2C
- MPI F40PH-2C
- MPI F40PH-3C



## Mountain Empire Model Railroaders General Meeting Minutes May 18, 2010

### All Aboard:

Vice President John Carter called the meeting to order under partly cloudy skies and 70 degrees at approximately 7:02. With 16 members present we settled into the business at hand.

### Officer Reports:

Secretary Report: motion made and approved without corrections as published.

Newsletters Editors Report: Ted was unavailable but the Signal Bridge continues to shine as our official monthly report of the business of the Mountain Empire Model Railroaders. Thanks Ted

Treasurers Report: Treasurers report was given, income and expenditures reviewed, and approved.

Note: Contact Duane Swank for remission of dues and payment of purchased items.

Web Masters Report: John was unavailable, however, the web site is up and running fine. E-Mail addresses for those wishing to acquire a MEMR web address are available. Please contact John Edwards for your club e-mail address.

Vice Presidents Report (upcoming programs): John Carter reported Joe Roberts was absent due to death in family and our backup program was also absent. We did however discuss the new Broadway Limited Imports N&W "Y" steam engine and the operating features. If you want to volunteer for a program and share your knowledge of model or "Full-Scale" railroads during the upcoming year, please contact VP John Carter.

Presidents Report:

Fred was out-of-town and scheduled to return on 6-1-2010.

Old Business:

1. Rail Grass: The Cope layout was set up and viewed by approximately 175 people. We actually had a slow day as far as viewing and sales go. Sales amounted to 3-prints, 5-ornaments, and several of the N-scale buildings. There were many comments on the "water" Fred had put in place on the Cope layout. Other notable displays included were by Ron Flanary, Dave Kistner, E.T. Railfan club, the S-scale display and the Knoxville Area Model Railroaders. We hope RailGrass continues to grow and there is more to see next year.
2. Brochures: The printed brochures looked good. However, there is no address on telling where club layout is located. We did discuss a "fix" and the correct address to enable users of GPS systems to be able to "find" us. More in June.
3. Craggy Mountain Railroad Trip: Hobie Hyder was absent but we do have the second weekend of June scheduled to visit and ride the speeders. If you plan on tripping over to Ashville NC with the club, be ready to leave ETSU (outside of museum) at 9:00a.m. June 12<sup>th</sup>. Also, please bring your own lunch...
4. Lyle Montieth has the decoder tester completed with both motor and speaker connections to fully test decoders before installation.. Thanks Lyle.

May Coordinators meeting:

- HO Yard: Cut list for the panels is ready and 1/2" plywood has been purchased. . Joe Roberts corrected the current yard power shields and reverser problems.. if issues do arise, please check the wheel gauge on both your engines and rolling stock.
- Little Engineers Rom: must be ok.. Kids are Happy :>)
- Cope Layout: volunteers are needed to make inserts to change the "theme" of the layout when it is on tour. If you are a member and not currently actively modeling with us, please accept this opportunity to make up the necessary additions for a "Thomas", "Circus", "1800's era" and other themes.
- G-gauge: Ballast is down and the weathering of the rail is next on the agenda. Plans are being worked up to display some of our G gauge equipment.
- Library: Jim Pahr is has donated magazine racks. More space is needed to properly store our library resource material and a box of Garden Railroad magazines has been received.
- N-scale: no report
- Sales: Please see Fred or Duayne to purchase any "for-sale" items of the Club's.

- ETWNC layout: Paul Haynes has the wood for the yard.
- Displays: Jim Pahr is to remove the ETWNC items and display a "History of Lionel"
- Newsletters: Good Railroading articles are needed. If you have any, please see Ted.

New Business:

1. June Picnic: it was discussed to be in June. However, and update is issued that the picnic date will be set at the June meeting for either July or August. Picnic is once again at Tom McGee's house and the membership will decide menu.
2. Blue Plum Festival will be 1<sup>st</sup> weekend in June. Volunteers were recruited to move the Cope layout from Kingsport directly to a "store front" at 124 Tipton (corner with Spring street) for display during the Johnson City Festival on Saturday from 12 noon till 6-p.m. Gary Cameron asked if anyone has anything they would like to display to please bring it on down.
3. A club Banner was discussed since we do not have anything with Carter Museum on it. Issues with the logo were discussed and would have to be resolved before a banner can be made. This banner would travel with the Cope Layout to sites around the area.
4. A brochure holder is needed for the Cope Layout.
5. A DVD player purchase was briefly discussed to promote the museum at different events in the area

Volunteer Recruiting for Saturday Operating Sessions:

Please come out and help run the trains on Saturdays:

Announcements:

No new announcements nor repeats of old ones made.

Program for the Evening:

Program cancelled due to family issues with presenter.

Next Scheduled Monthly Meeting:

Come join us on June the 15<sup>th</sup> @ 7:00 p.m. for our next scheduled business meeting.

Respectfully submitted  
Don Q. Ramey



Norfolk Southern Work Train at Jonesborough May 31 2010

## Johnson City: CSI to Film Episode: "The Missing Bridge"

Johnson City has lost nothing to the Town of Jonesborough. Jobo may have hosted the Food Network Channel's filming of a reality cooking show, but Johnson City is slated to host the filming of a CSI (Crime Scene Investigators) episode. YouTube camera crew members Joe Roberts and Donald Ramey arrived on the scene of last month's heist. "The aggrieved party, Mr. Allen Morton, provided us with evidence photos of the dastardly crime," said Ramey. "That's all the prompting we needed," suggested Roberts. With cameras and sound booms in hand, the CSI team began taking background interviews for the episode.

"I've had to hire additional security, and may have to hire more," stated Duane Swank. "Why just the other day the police caught thieves stripping car parts off a loaded box car the railroad had set out near my gravel pit." The theft was perpetrated in board daylight. "Don't that take the prize?" offered Hobie Hyder, manager of the Elkhorn Mine. "At least the bridge thief did the taking at night."



A Bird's Eye View of the Crime Scene



The missing deck span is obvious

"There's a veritable crime wave," reported Larry Frasier, owner of the Swift Packing House and Cold Storage. "Used to be the local police would catch a few speeders and a few teenagers making out across from the cattle pens. But now things have changed. I've got to lock things up when I'm not around"

"This has the potential to be a riveting episode," suggested Ramey, "The police don't have a suspect as of yet," he noted. "And this could be the crime of the century. Who could have taken an entire bridge deck with no one even noticing?"

Ted Bleck-Doran noted, "You got to be careful who you rent to even." Bleck-Doran was victim of tenants who were caught poaching deer out of season and running a corn mash still in the hills on the south side of town. (see the full story of this incident in the October 2008 issue of *THE SIGNAL BRIDGE*).

"The culprit or culprits must have taken flight," suggested town council president and bird fancier, Fred Alsop. "The thief must be truly a rare bird to have carried out the heist," he concluded. As for the crime wave that has blighted his administration, Alsop retorted, "You know what they day 'Birds of a feather flock together'". He went on to blame that influx of diesel era railroaders that have move to the area. "Steam you could see and trust, those stink buggies... well that's another story," he opined.

With no suspect or firm leads in solving the crime Mr. Morton has begun the construction of a new bridge deck. "I've learned my lesson," he stated. "Say, has anyone seen the decking I was working on last week?"

Watch for updates on YouTube.com.



Loram Ballast Machine in Jonesborough TN May 30, 2010

## Railfan Outing – June 12<sup>th</sup>

All interested members are urged to RSVP, ASAP. Saturday, June 12 was to be our trip over to ride speeders on the Craggy Mountain Line in Ashville. Due to a scheduling conflict by our host, this event will be rescheduled. However, the scheduling conflict has led us to another great outing. Our host has been invited to go to Charlotte for a behind the scenes tour of Charlotte Trolley and we have been invited to go along. It has taken him one year to get this tour scheduled and this might be a once in a lifetime railfan opportunity. We will meet in Ashville at 7:00 A.M. Plan A, if enough people go, we will try to take a bus or van and split the cost, otherwise, Plan B we will carpool. The tour will include a trolley ride along the completed 2 1/2 miles of line plus other activities. Hobie's e-mail is [juliehobie@earthlink.net](mailto:juliehobie@earthlink.net) or you can leave a message on my cell at 213-4067. If interested please let Hobie Hyder know ASAP.

## CTI's Partnership with the City of Charlotte: Economic Development Meets Public Transit



In June, 1998, the Charlotte City Council allocated \$16.7 million in public funds to create a two-mile rail transit corridor through Uptown Charlotte and Historic South End which would accommodate both vintage trolley and eventually light rail transit. Trolley proponents believed this investment would stimulate economic development along the corridor, and that property tax values would be high enough to repay the investment in eight years. In fact, it took only four years, and the City's investment paid off even before the Uptown component of the trolley line was established. Since the creation of the Historic South End Municipal Service District in 2001, property values in the corridor have increased by 89.6%. Today, more than \$600 million in private funds have been invested in the development of over 800,000 square feet of space along South End's trolley corridor. In the Fall of 2007, the Charlotte Area Transit System (CATS) will

offer trolley and light rail service along this corridor, leading to even greater levels of development, and connecting Uptown and South End even more closely.

## 'Change is a Coming'



Pictures were taken near Hannum mile post 128.9. Notice anything different? The once, what has become the trademark brown ballast of the former Clinchfield Railroad is soon to be no more. In efforts to get ready for the usual July fourth shutdown for track repair and upgrades, CSX has been dumping large amounts of light grey ballast from Erwin to Kingsport. Apparently the change was because of price. Note, the new ballast doesn't appear to be as large. It looks more like large gravel. Norfolk Southern has also started using what appears to be the same ballast. So be prepared to see change there as well.



### From the Engineer's Side of the Cab:

Thanks to **John Carter** for presiding over the May MEMRR meeting while I was conducting workshops in west Tennessee for TWRA.

We exhibited the "Cope Traveling Layout" in Kingsport at their annual RailGrass Festival on May 8<sup>th</sup> for the first time. It got lots of compliments and everyone wanted to touch the "water" to see if it was real. Special thanks to **Gary Emmert**, **David Doughty**, and **Emile Hamm** for the construction of the village scenes on the layout's 2 inserts. They did a great job. We also need to thank **Gary Cameron** for arranging transportation to and from Kingsport. We expected to bring the layout back home to the Carter RR Museum the next week but were invited to exhibit it on the 15<sup>th</sup> at Kingsport's Racks-by-the-Tracks festival which we did. The little autumn-themed layout made it back to Johnson City for the 11<sup>th</sup> annual Blue Plum Festival the first weekend in June. Thanks to all the club members who volunteered to help transport the layout from city-to-city and to man the tables and operate the trains on it during these 3 events. **David Doughty** gave us all a scare on Saturday morning of the Blue Plum Festival as he was working on last minute setup details and organizing his railroad safety materials to pass out to visitors he unexpectedly collapsed and had to be taken to the hospital emergency room. After an overnight stay at JC Medical Center he was released to go home, but at this writing he is still undergoing tests to discover the cause of this medical problem. All our best wishes to David for a speedy and full recovery.

The Cope Layout will be back in the museum soon from its recent travels and we will continue to upgrade it, repair some of the minor damage to the "forest" whose trees are not all rooted deeply enough, and continue to improve its design for future appearances. We need some interested volunteers to step forward and take charge of the 2 additional sets of inserts and create some new central scenes for our little trains to travel around. Who wants to share their talents, and as a group, build a couple of new destinations for the layout? The areas are small, less than 3 square feet each, but the opportunity to create some new diversity to the layout should be both tempting and exciting. Any member who is not currently actively modeling with us, please accept the challenge to help us with these necessary additions. Just talk to any of the officers and we will get you started and help you with the project. The club and the museum will get a lot of great publicity out of this little traveling layout, but we need you to help us do it.

The need for a club and museum banner was discussed at the May meeting as a way to tell the public who we are, especially when we have the Cope Layout at any of the local festivals. Does anyone want to take this small project on? I will work in the coming weeks to get the Carter RR Museum logo copyright protected so we can begin to use it for such things as this banner.

**Jim Pahr** donated a pile of annual magazine holders and our librarian, **Gary Emmert** with several helpers, including **David Doughty** and **Bob Jones** have been busy putting the library in order and cataloging our holdings of magazines, books, videos and CDs. Many of these railroading materials are available for member checkout; just see the librarian for details.

Factory Direct Trains put a clearance sale on their stock of Broadway Ltd, SD 40-2s with a 2-for-the-price-of 1 sale at \$199.00, and the members present at the Thursday night work session on June 3<sup>rd</sup> voted to take advantage of it. We purchased 2 locomotives, one Southern and one N&W, that should be on the HO layout by the time you read this. These are DCC locomotives in their new Paragon-2 series that feature state-of-the-art sound systems, flashing ditch lights, directional lights, and lots of cool features. Come check them out and give one a test run in front of one of your consists. At the price (hard to purchase a sound system alone for that amount) we felt we just could not pass up the opportunity to add some quality locomotives to the club roster.

The club and the museum have some "surplus" HO and N-scale items that are marked for sale at bargain prices. See any of the officers for details and to check out the sale items.

The initial plans for the Club's annual summer picnic are underway and we hope to be hosted at Tom McKee's home with its garden railroads once more. Details will be provided soon with the picnic anticipated to take place in July or early August. Volunteers are being sought for a Picnic Committee. This is a terrific annual social event for members and their spouse or "significant-other" and we always have a great time with lots of good food and lively discussions.

**Our 2 big construction projects are just getting underway.** The lumber and track materials have been purchased for both the Tweetsie railroad layout project and the HO freight yard and staging yard. We have benchwork to construct, plastic building kits to construct, paint and weather; track to lay, wiring to do, yards to ballast, scenery to construct. There are groups with coordinators for each of these major projects and we have lots of talent in this model railroad club. **We need your help.** With more than 90 members on the club roster please step up and do your part. Don't leave it to the hardcore 20-or-so members that are the heart of every project to carry the entire load. We have a great opportunity in our relationship with the university and these are major building projects that will add to the excellence of the exhibits we already have in place as well as giving us many additional opportunities to operate our model railroads and to display our talents and love of our hobby for the entire community. The work has already begun. Please come on down to the museum and be a part of creating it. We need you help, talent, skill and ideas.

We are almost half way through 2010 and we are having a great year. There are lots of exciting things happening in the club and at the railroad museum. If you have not been to a meeting lately, or a Thursday night work session, or a Saturday operating session you are missing out on the personal aspects of your model railroading hobby. We have great group of men and women in our club and lots of opportunity to create and enjoy lasting friendships with people who also enjoy the hobby of model railroading. Start attending our meetings and sessions, become a regular and get total return on your membership dues dollars. We hope to see you soon. The switch is thrown to the mainline and the signal is green. Get on board and have fun with us! Hear the whistle blow and think of all the destinations yet to come.

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





Norfolk Southern Koram Cleaning Train – Jonesborough TN– May 31, 2010



Loram Ballast Cleaner



Photo from Loram.Com

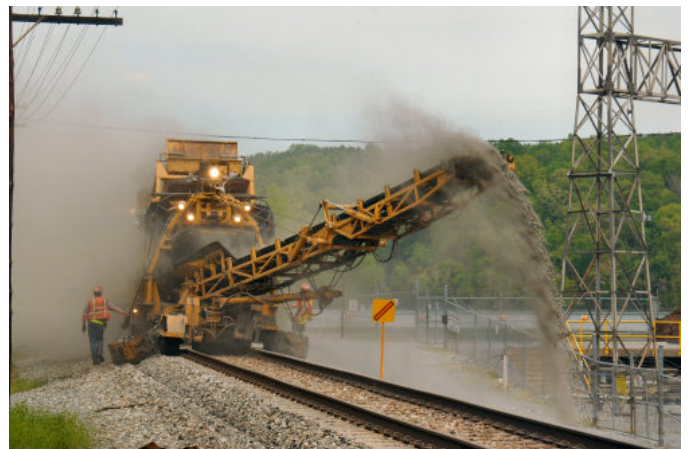


Photo fromRLFranz.net

## Loram Ballast Cleaner in Action

A **ballast cleaner** is a railway machine that specialises in cleaning the railway track ballast (gravel, blue stone or other aggregate) of impurities.

Over time, ballast becomes worn down by attrition, and loses its angularity, becoming rounded instead. This hinders the tessellation of pieces of ballast with one another, and thus reduces its effectiveness. Fine pieces of granite, like sand, are also created by attrition, known simply as "fines". Combined with water in the ballast, these stick it together, making it like a solid lump of concrete. This both hinders track drainage and reduces the flexibility of the ballast to constrain the track as it moves under traffic.

Therefore, ballast cleaning is undertaken to remove this ballast, screen it and replace the "dirty" worn ballast with fresh ballast. The advantage of ballast cleaning is that it can be done by an on track machine without removing the rail and sleepers, and it is therefore cheaper than a total excavation. A ballast cleaner is the on track machine that carries out this task.

A cutter bar runs beneath sleeper level excavating all of the ballast under the sleepers to a specified depth, which is variable. A conveyor then moves the ballast up into the ballast cleaner, where it passes through a mesh. Pieces of ballast which are smaller than the mesh size fall through and are rejected, those that are bigger than the mesh are returned to the track along with fresh ballast. The ballast cleaner has both ballast and spoil wagons attached to it, to which the materials are fed by a series of conveyor belts that run along the train. This process can be done in short possessions, meaning that track life can be considerably extended with the minimum of disruption.

In 2008, Network Rail purchased a new High Output ballast cleaner to do this work at high speed in a continuous programme along main line routes. The train is approximately a quarter of a mile long.

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