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"THE BEST REGION UNDER THE SUN"*



The Journal Box

Volume 82

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From the President's Corner

I am back this quarter to assist the President in giving his quarterly message to you, he's busy.

The president has graciously allowed me to report for him. It isn't as if he doesn't have time, actually he doesn't have time since Hurricane Helene was on a path to his house. By the time this gets out Helene will be past his location, but who knows what the storm wrought? He will be busy with more things than SSR. I asked him for a deadline and mother nature goes and screws things up and gives him something else to keep his attention. Andy and the committee of Jeff Guzowski and Glenn Kopriva have been focused on getting all the facets of the convention together and running smoothly and here comes Helene.

So, in speaking for him I am sure he would offer something to the effect of the following message.

“The convention committee has worked hard and they have done their best to provide the membership with a memorable weekend. I hope all of you will be impressed with the time and effort that went into this year's convention, the location, the venue, the clinic presentations, the guest speaker, the banquet and will come away with a positive outlook on the region.

I would like you all to think about the goals of our organization in promoting mentorship, fellowship and community as we come together for the convention. I wish you all a wonderful experience at the convention and I am looking forward to seeing you all!”

Robert Leonard
For:

Andy J. Zimmerman
ATCS AW USN Ret.
SSR President

From the Editor's Desk

For the past three months I have been in Turkiye waiting on family to leave the Crimea, my location, Alanya, a coastal town on the Mediterranean. They have come and went and now I am looking forward to coming home. I have had a significant amount

of time to put this quarter together, hopefully this edition reflects that. There is really not much to do around here, there are no trains, there is not even light rail, nothing but Mopeds, Trikes, Quads and the poor driving habits of their operators. Pedestrians do not have the Right of Way, they are targets or viewed by drivers as slalom cones on the racetrack. It makes no difference if you are walking against traffic, or with it, you are a target. The cacophony of horns is ear splitting! But none of that has any bearing on this quarter's Journal Box, I am just venting. So, on to other things.

Well, summer is gone, heat or not, it is gone, the solstice was on the 22nd, three fourths of the year is behind us and if we were playing our cards right, we were productive. I know of a few who were, and I hope you are in the same category. One reader in particular built something that was featured in the last edition, we will see if we can get a picture. Speaking of editions, this quarter we have a new contributor in Robert Raymond. Those who know Robert know his expertise in operations and his contribution explains much on the subject and I appreciate his participation. I still have articles in the wings from Gene Jameson and Chip Pecere, Mike Collins always has something to offer, but I cannot rely on these people quarter after quarter. So, I call out again for contributions to the publication.

One other notable mention and has nothing to do with the Journal Box, this is a reminder of the Grouper offer and its benefits. Remember the NMRA is in partnership with Grouper and the benefit will cover your membership within the NMRA if you qualify. This was announced toward the beginning of the year that being a member of the NMRA/SSR is good for your mental and physical health. They say as we get older, we withdraw from both mental and physical activities, the mind slows, and the body becomes sedentary. Therefore, membership in any organization like ours counters that withdrawal and keeps folks active and communicating. I mention this because I just received the same offer from the American Legion. The Legion is also in partnership with Grouper offering the same benefits, but again, if you qualify. The qualifying statement from their site is as follows; If you have a Medicare Advantage or Medicare Supplement plan that includes the RenewActive or OnePass program, you qualify. I believe the majority of we 65 and older, and there are many of us, can benefit from this program! So, for those of you who are veterans and are not a member of the Legion, look into it, it is good for your mental and physical health. Of course, for those who read this and are of age and a SSR member, look into the advantage of Grouper.

To reiterate from last quarter, no stones thrown ... thank you! I am not sure if the membership expectations of the Journal Box have been met, hardly anyone tells me! What little I have heard has been positive, a blessing I suppose. For those of you who have offered articles to fill the pages, thank you!

On another note; It is said one should not expect from others what one does not expect from themselves. In other words, if you put forth none, or little effort do not expect others to exceed your expectations. The convention committee has put forth effort to make this convention better than those of the past. Should you expect great things, if so, what did you do to assist that effort? An honest question, I am not chastising, nor implicating, simply asking how did you get involved?

Another thing, by the time you receive the next quarterly edition, we will have the convention, All Hallows' Eve, Thanksgiving, and all the seasonal religious holidays under our belts. I hope you enjoy them all.

That's it for this quarter, have a good time with the upcoming events, see you in December.

Robert Leonard



The Heaviest, Most Powerful Articulated (arguably), the Chesapeake & Ohio Allegheny but for you doubters; weight 778,000 lbs., 7500 horsepower, adhesion 5.18 (forward engine)

Was it as long? **No!** Did it have as many wheels and axles? **No!** Was it more powerful? **Yes!**

This Quarter's Contributors

Mike Brock - Mike's outlook of PMing is back for another installment. Part 2 covers his concepts of what is familiar, what is important, and answers the question, how do you mix the two? As I said last quarter, his writing is unique!

Bill Cialini - Another piece from Bill this month, this one a 3D printed MOW piece of equipment lettered for his home road, the Defiance & Northern railroad. With bits of wire, styrene and glue, a bare bones model takes on a detailed representation of a MOW prototype.

Mike Collins MMR - Mike writes about his journey into Photo Matching, not an AP certificate, but an important and learning facet of the program and his meeting the goal and being awarded at a national. It is a look into what can be deemed an individual subject for modeling and a grouping of models to make a scene representing a proto scene.

Ed Harris - Ed gives us the conclusion of his "**Model Railroading is Fun**" and his module building with a step back to his childhood. A brief encounter with the man as a young boy growing up and enjoying life in "The Neighborhood" a story of a time, less stressful.

Gene Jameson - Another Step by Step from Gene this quarter from a previously published article, written in the same format as last quarter's offering with "**Large Transformer Loads for Depressed Center Flatcars**". This time he describes how to build the base transformer "box" from styrene and detail it. Once again Gene modifies the rolling stock to better represent the prototype.

Robert Leonard - I have an appreciation of 1st generation diesels, all 1st generation diesels from ALCO to Lima and I thought I would write to that. My offering this quarter is a look into EMC – EMD production of the FT road diesel of which some claim caused the fall and death of steam. This covers the FT primarily, from concept, construction, advantages of its use. Also, a modeling breakdown of F units from EMD.

Chip Pecere - Chip has provided the second in a series, "Building Your Railroad Part 2", a description of how he wired the layout for DCC. As he explains in "**Wiring Your Railroad for DCC**", his approach to accessing volts, amps, ones & zeros and describes the components in which he got his layout up and running. He also wrote a second article explaining a unique way of maintaining control over your inventory of motive power or rolling stock. When was the last time you looked at one of your engines and asked yourself "What number is that, where are my glasses?". This is especially true in "N" scale! Well, he has the answer with his "**Old Eyes and Small Print**".

Robert Raymond - The past editor of the Journal Box has provided us with a primer on operations with his "**Fast Timetable & Train Order for Club and Home Layouts**". Robert, who has been very prolific on this subject explains the nuts and bolts or (rails and ties) of operations and how to apply them to a 4 X 8 setup, or club environment. The product of his subject will be displayed at the upcoming convention.

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E.C.H.O.E.S is a modular model railroad club located in Miami-Dade, Florida, dedicated to building and displaying our HO scale model railroad layout. Our purpose is to enjoy and promote the hobby of model railroading and preserve the history of railroading in South Florida. The club was started in the summer of 1985, with the goal of presenting a HO scale modular model railroad layout for display at "The Harvest Festival". Throughout the years, the layout has been displayed at regional conventions, four NMRA National Train Shows (Atlanta twice, Ft. Lauderdale, FL and Orlando), and other events in Miami Dade and Broward counties. We do running/operating sessions several times a year and welcome guests to join us. Membership is open and we welcome anyone who shares an interest and passion for Model railroading.

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Fast Timetable & Train Order for Home and Club Layouts

By Robert Raymond

Before there were remotely controlled signals and turnouts, before dispatchers could communicate directly with crews thousands of miles away, there was a century of railroading that relied on a very different method of dispatching and train control: *Timetable and Train Order*. It is wildly different from any other method you might have operated under (such as Warrants and CTC). While it is a very involved (entire discussion groups mull over its finer points), it can be very rewarding to master. Like a good switching puzzle, operating under TT&TO can be a challenging and rewarding experience.

The Timetable

First off, you need a timetable – heck, everyone’s got one of those for their layout. Now, there are several observations regarding timetables.

- 1) Don’t overload it. Under TT&TO, your traffic load will be much lower than other methods. And it is easy to run “extras” to make up the slack. But extras cannot operate if the gap between trains is too tight. Be generous.
- 2) Leave adequate time to run between points. This might even force your operators to learn to run at more prototypical speeds.
- 3) You should assign classes to your trains (first class, second class, etc). First class are the high-steppers on your line, the passengers and merchandisers.
- 4) Establish a superior direction (most railroads go with “Westbound” for this, but lines can vary).
- 5) As you work your train times out, make sure you mark meets prominently. I use **bold-underline-italics** for that. For an operator to see who he should be meeting, he can trace along that station row with his finger and find the same time for another train. That’s his meet.
- 6) Add station notes on the timetables, listing services at each station. For example, many railroads might denote “P” for phone and “TO” for train order station. Not every passing siding would have an operator or even a call box. If there is no service at a location, crews cannot contact the dispatcher.
- 7) You can use Excel (or any other spreadsheet program) to create a spiffy timetable.

Eastbound (read down)				Employee Timetable		Westbound (read up)					
Third Class		First Class		Miles	Number 3 - Jan 1 1946		Cars	First Class		Third Class	
244	202	68	66		Station			95	97	223	247
8:30	0:01	18:01		750	Cincinnati, OH		Yard				
					TO			13:10		10:24	20:50
9:14	0:46	18:45		703	Carbon Hill, OH		17	12:25			
<u>9:40</u>		18:55			P		27	12:15		<u>9:40</u>	20:05
9:44	1:15	19:25		578	Zanesville, OH		19	11:45			
		<u>19:35</u>			TO		28	11:40		9:10	<u>19:35</u>
10:20	1:50	20:10		472	Mingo Jct, OH		17	11:05			
<u>10:56</u>		20:20			P		26	<u>10:56</u>		8:35	19:01
11:10	2:10	20:40		469	Weirton, WV		Double Track	10:35			
					P						8:15
11:30	2:31	21:01		444	Martin, PA		Double Track	10:16		8:01	18:20
13:30	4:30	21:15			TO				10:01		6:01
13:50	<u>5:01</u>	22:15	11:30	430	Pittsburgh, PA		Double Track	9:01		<u>5:01</u>	
					P					18:15	4:15
14:20	5:34		12:01	377	Red Rock, PA		24				
<u>14:50</u>					P		37		17:45	3:45	<u>14:50</u>
15:25	6:10		12:35	235	Harris Glen, PA		16	17:10			
			12:45		TO		23	16:55		3:10	14:15
<u>16:10</u>	6:55		<u>13:30</u>	63	Lehigh, PA		40		<u>16:10</u>		<u>13:30</u>
					P		63	15:55		2:21	
16:30	7:15		13:59	58	Bethlehem/Calypto PA		20	15:35		2:01	12:10
18:15	<u>10:01</u>		<u>15:15</u>		TO		31		<u>15:15</u>	0:55	<u>10:01</u>
19:01	10:45 AM		16:00	0	Bound Brook, NJ		Yard				
					TO				14:30	0:05	9:15

The Environment

Timetable and Train Order is generally labor-intensive. The dispatcher is required to make the railroad run efficiently. Each train order station is staffed by a station operator, who serves as a go-between for the dispatcher and his engineers. They would record and transmit the times of passing trains (transmitting an "OS" or On-Sheet report to the dispatcher) and "hoop up" any dispatcher orders to the trains (literally using an actual hoop to pass the paperwork up). Some layouts can afford operators (an operational luxury). Al Sohl's *Western Bay* has operators covering several stations each, keeping them busy. Otherwise, engineers can play the role of station operators, calling themselves past. You'll have to decide what you can do with the operators and aisle space you have. It might be that engineers have to physically walk over to the dispatcher's "cubby" to get their paperwork (unless you have actual operators or even a pneumatic tube system). Your system will depend on your circumstances.

The Rules of Timetable Operations

The following rules should be forwarded to operators or, at the least, reviewed with them in the pre-brief. At our LM&O club layout, we run every two months so I review these points each time. So here are the basics of TT&TO.

- 1) Before a train initially departs, he needs to have a clearance card (to be covered under **Paperwork**, below).
- 2) Before leaving the safety of any yard, spur or siding, the engineer must examine his timetable and determine the superiority of any oncoming trains. Superiority is based on (in order of importance) (1) specific dispatcher orders, (2) the class of both trains and (3) in case of ties, the railroad's superior direction.
- 3) Superiority determines which train holds the main and which the siding in case of meets.
- 4) **CRITICAL POINT!** If a superior train is holding at a meet point and the inferior train has not arrived, the train can depart! If an inferior train is waiting for an overdue superior train, the train must wait! This means that inferior trains must get out of the way of superior ones, presumably at earlier sidings. *The engineers determine if it is safe to advance, not the dispatcher. In essence, the railroad could run itself under these simple rules! The dispatcher simply makes it operate more efficiently.*
- 5) If your crews are really nervous about advancing on their own reckoning, you can start with "hard meets", meaning everyone waits at a meet point until all trains have arrived. You can do this for a couple of sessions until everyone gets the flow of the thing.
- 6) When a train arrives at a train order station, he either informs the operator or dispatcher of his arrival in the form of an OS Report. While it's not 100% accurate, it is easiest for crews to remember to say "OS Train 202 Harris Glen".
- 7) When the trains is OSed, the crew "look at the train order signal in front of the station". This is done by the dispatcher telling the crews or operator (following the OS report) that the board is "green" or "red".
- 8) A green signal means there are no orders – the train may proceed if safe to do so.
- 9) A red signal means that there are orders for that train. The crews must pick up a new clearance card with a complete list of orders before proceeding.
- 10) Extras are trains that do not appear on the timetable (seasonal perishables, MOW moves, light engine movements and so on). As they are not on the timetable, they are considered inferior to *ALL* other trains. They will have to move across the division with due caution, allowing all other trains to pass (unless favored with rights via dispatcher train orders). Note that running an extra is the most exciting part of TT&TO operations.
- 11) And note – if two extras are opposing each other, the dispatcher *MUST* issue a meet order to get them past each other safely.
- 12) Trains carry more red flags than a Russian May Day parade. If for whatever reason your train is unexpectedly stopped (or fouls a switch, or in any way impedes the flow of traffic), order your imaginary brakemen to run 500 feet down the line and signal any approaching trains of your presence. You can even move a train (with flagmen out) at walking speed to the next siding. As the masters of TT&TO remark, "You can go anywhere on the railroad with flags." Though you might have to explain your actions to the superintendent.

Final notes on these rules: TT&TO can be difficult to comprehend and engineers come with a wide range of abilities. You should give the junior members first class trains (preferably in the superior direction).

Your more skilled operators should run your lower classes and extras. And consider that you can run extras whenever you want – you can even run a "completed" train out of staging as a through movement – no switching. This way you can soak up any extra operator capacity you face.

We mark our TO stations clearly by placing a red coke can on the layout at those locations. This makes the train order stations obvious.

Train your operators to ask a train's number and marker lights as they pass. Both would be visible to passing trains. Nothing is more embarrassing than meeting a train you thought you had a meet with, only to find out it's an extra and you proceeded to your death. For the record, extras display *white* markers, and sections (multiple trains sharing the same schedule, such as First-99 and Second-99), display *green* markers on all but the final train in the group. Unless privy to a special train order, engineers should never advance until all sections are clear.

The Dispatcher's Sheet

The dispatcher needs to keep track of his trains. Perhaps he'll use a simple magnetic board. Keeping things prototypical, he should consider making a "train sheet". This sheet looks somewhat like a timetable (but as wide as you can make it – most print shops can give you a landscape of 14" or more). However, outside of station names, the sheet is blank. As trains initially check in, their numbers are recorded (either on the eastbound or westbound side). As each train OSeS, the dispatcher notes the time and draws an arrow to the next train order station. With a practiced eye, it becomes quite easy to scan a train sheet and know where everyone is. When a train finishes its run, circle its number to show it is complete.

The Paperwork

True TT&TO uses reams of paper and carbon sheets for copies. Generally you can do the entire dictate-the-order-and-read-back if you wish. At huge clubs like *La Mesa* in San Diego (who run on a 1:1 clock) this is perfectly doable. In a fast-clock environment, it might not be. On the *LM&O*, we use as system of "quick" orders that are similar to warrants. Using preconfigured orders, the dispatcher can fill out a copy or two quickly and staple them to their clearance cards. Not only is this fast, but it allows new-ish dispatchers to "fill in the blanks" and learn the system rapidly.

Physically, both our clearance cards and train orders are 2-1/2" by 4-1/2" (roughly), meaning you can fit six on a piece of paper (a paper-cutter can cut them out fast!). Also, this is a perfect size to allow all that paperwork to fit neatly into a shirt pocket. If using Excel, this translates to a total column width of 32 (in whatever combination of cell-widths you choose) and a total column height of 350. In the examples of train orders below, my four column widths are 8 each and my thirteen row heights are 25 each (the first row is the exception at 50). You should be easily able to create six "blank" orders on a page and play with the margins and printing to get the initial layout right. Then break those rows up and work out your orders.

A note on order text. I use "MV-Boli" for handwritten fonts, "Stampwriter-kit" for the typed font. For the checkbox squares, I use "Webdings" font, with "1" to show as a box. Yes, you can put multiple fonts on a line. If you are missing these fonts, you should be able to find them for free online.

The Clearance Card

The clearance card is the document the engineers must have when initially starting out or picking up orders. It is shown below.

Clearance			
Station	<u>Abc 15</u>	19	<u>60</u>
To C&E	_____	Display	_____ Signals
I have _____ orders for your train as follows:			
Orders	No.	_____	No. _____
	No.	_____	No. _____
	No.	_____	No. _____
OK at	<u>X:XX</u>	<u>B</u> M	_____ Chief Train Dispatcher

You'll notice that I've filled in some of the fields with make-believe "filler" text. You can make them blank and fill out all this information as you issue them but it is a lot of work since every train you run will need at least one clearance card to leave the originating terminal. Still, I did leave the more important entries open for use, specifically...


- Station: Where will the crew be issued these orders.
- To C&E: Who is this order

issued to. C&E stands for "Conductor and Engineer". On the *Western Bay*, Al Sohl runs most of his trains with both positions – since I don't feel like copying these manually or messing with carbon paper, I tell them to "share".

- Display _____ Signals: For extras, write "white". For all trains running in sections (other than the final one) list "green".
- I have _____ orders for your train as follows: Count how many new orders you are issuing to that train and write in that number. Enter "None" or "No" if it's just a clearance card with no orders.
- Orders: List the train order numbers of all orders to be issued (a note on order numbering to follow). Staple all these orders to the clearance card and hand them to the crew. They should not move if the clearance card and actual orders included do not match.
- Chief Train Dispatcher: Your initials.

Samples of Train Orders

Form S-A orders, to move a meet point

Lehigh, Form S-A Monongahela and Ohio RR		
TRAIN ORDER No. _____		
To C&E		ENG NO XXX ENG NO YYY
TRAIN _____ MEET		
TRAIN _____ AT		
<input type="checkbox"/> BND BRK	<input type="checkbox"/> MARTIN	
<input type="checkbox"/> BETHLEHEM	<input type="checkbox"/> MINGO JCT	
<input type="checkbox"/> LEHIGH	<input type="checkbox"/> ZANESV	
<input type="checkbox"/> HARRIS'G	<input type="checkbox"/> CARBON H	
<input type="checkbox"/> RED HOCK	<input type="checkbox"/> CINGY	
<input type="checkbox"/> PITTSBURG		
<input type="checkbox"/> TRAIN _____ TAKE SIDING		


For whatever reason, possibly you wish to favor one train over another or allow two obvious-to-each-other extras to pass. Form S-A is the order you'll need.

The items to fill out:

- Train Order Number: Bump up the current order number (start the day at "0") by one. You'll need at least two copies of this order, one to each train, and possibly others to trains you need to be aware of the meet. All copies of this order should share the same Train Order Number.
- C&E: This should (technically) be the trains this order is listed to. I got tired of writing it down for each copy and so I just put in a "filler" here. Again, your choice if you want your dispatcher to fill this out.
- Train _____ meet train _____ at: List the numbers of the passing trains.
- The location checkbox list: You can checkbox the meet point with a single checkbox selected.
- Train _____ take siding: Check and fill this if for whatever reason you need a specific train to take the siding.

Make at least two copies (for the involved trains) and set them aside. When the train is at the issuing station on OSeS, tell them they have a red TO board, slap a clearance card on it, staple them on one of the corners and hand the paperwork to the crew. With both issued, the meet point has now been moved.


Form G: Running extras

Lehigh, Form G Monongahela and Ohio RR 	
TRAIN ORDER No. _____	
To C&E ENG XXXX	
ENG ----- RUN EXTRA BETWEEN	
<input type="checkbox"/> BND BRK	<input type="checkbox"/> MARTIN
<input type="checkbox"/> BETHLEHEM	<input type="checkbox"/> MINGO JCT
<input type="checkbox"/> LEHIGH	<input type="checkbox"/> ZANESV
<input type="checkbox"/> HARRIS'G	<input type="checkbox"/> CARBON H
<input type="checkbox"/> RED HOCK	<input type="checkbox"/> CINCY
<input type="checkbox"/> PITTSBURG	

Remember those extras we talked about? Here's how we do it.

- Train Order Number: I cannot imagine why you would ever issue more than one of these at a time. Increment the current train order number and fill this in.
- C&E: Again, I just use "filler" here but if you want to, you can fill this out. I ran something like fifteen extras the other night at the club. I don't need to practice my cursive (or my cursing).
- Engine _____ Run Extra Between: You will need your crew to give you the lead engine number (i.e. the cab number) of their train. If it is "1234" then you'll fill this in. That train will now be referenced as "X1234" or "Extra 1234". Make sure your clearance card lists white signals.
- The location checkbox list: Pick two locations, one for the starting location, one for the ending. This is the section of track the extra may run on. We don't worry too much about clarifying which is which since the issuing point on the clearance form can be seen as an indication of the start location.

Form E: Run Late

Lehigh, Form E Monongahela and Ohio RR 	
TRAIN ORDER No. _____	
To C&E NO XXXX	
TRAIN ----- RUN	
<input type="checkbox"/> 30 MINUTES LATE	
<input type="checkbox"/> 1 HOUR LATE	
<input type="checkbox"/> 2 HOURS LATE	

You've got the whole order writing thing down so I don't need to go through it in excruciating detail. But here's a neat order you might need. Say a superior train is delayed at start (possibly nobody is immediately available to run it and you are waiting for the first freed operator to take it out). Rather than issue a bunch of new meet orders for all other impacted trains, just copy one of these for each train (as well as the late one). Checkbox exactly how late he will be.

For the late train, this means he needs to mentally add that late time to ALL entries in his timetable. He does not run fast and try to get back on schedule – he runs at his usual pace, running late his whole trip.

For all other trains, they also mentally add that time to all the affected train's times. And since this is TT&TO, they now know when he'll be making his station calls *and can advance against him*. In other words. Inferior trains can now take full advantage of this knowledge and move efficiently. It can even be used by trains going the same direction, allowing them to run ahead if the lateness is large enough.

Concluding notes

A couple of things I'll mention in closing.

Other forms: These forms of Train Orders are pretty boilerplate. You can find examples of other forms, such as those for running in sections, annulling trains or granting rights to trains, to name a few. You'll find many of these examples online or in most books on operations.

Ready stacks: You might find yourself generating a lot of train orders for trains you can't issue to yet. That happened the other night on the *LM&O* when I had two passenger movements, one with two sections and one with three, taking advantage of a long siding to do a five-train meet. To make matters worse, some of these trains had other orders that needed to go to just them. To keep track, I made a clearance card for each and placed it on the desk. As I generated copies of the orders, I'd slip it into that train's stack and note it on the clearance card. When I was ready to issue, I'd staple the stack together and tally the total number of indicated orders on the card and pass it to the crews. And no, it wasn't my fault that the three-train section managed to rear-end itself during this otherwise-flawless pass.

In setting TT&TO up, note that it will be new for your crews and everyone will be on edge. Slow the clock down, answer questions and even allow the superintendent to "work things out on the ground". Don't criticize mistakes. Hold a debrief afterwards and see what the crews thought and how things can be improved. Review the process with your crews before you start your next session.

And most of all, have fun!



A Look into the late Dick Elwell's "Hoosac Valley" Diesel House



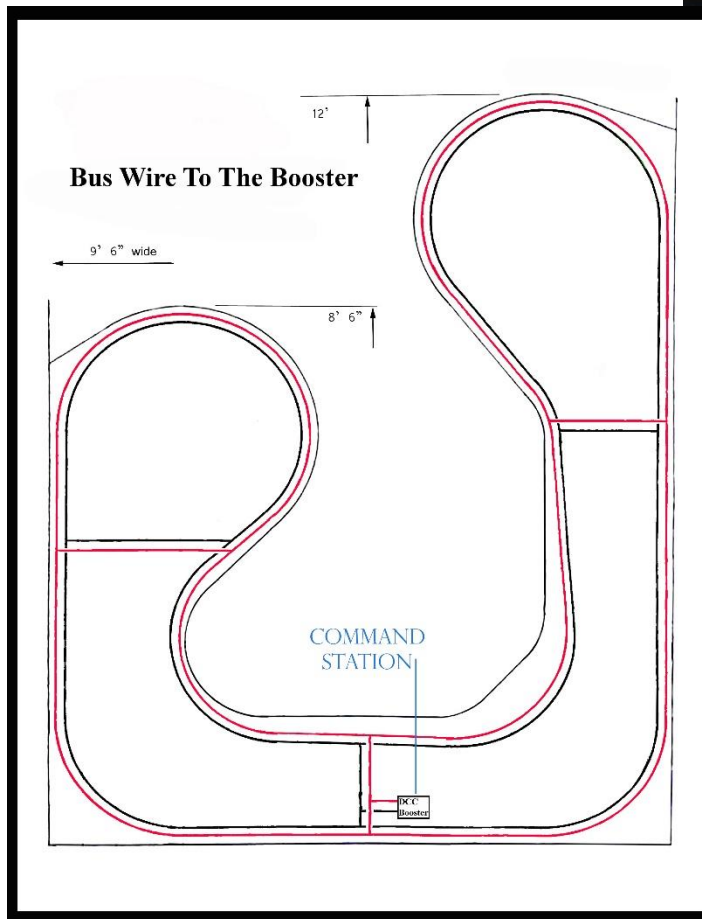
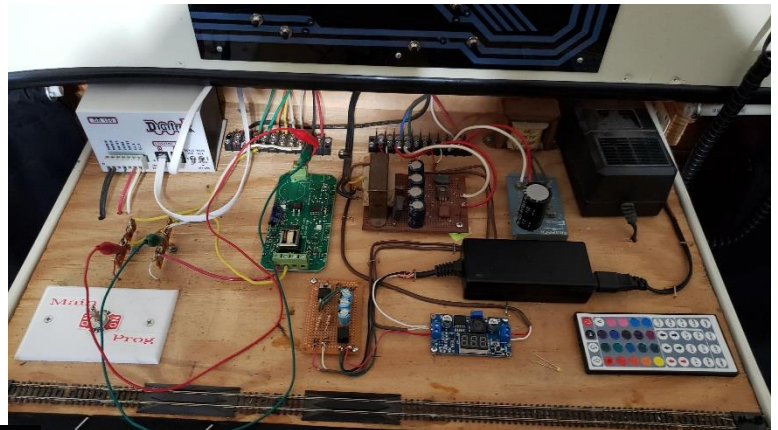
Wiring your Railroad for DCC

I've had DCC for close to 40 years. I first fell in love with the idea when reading an article in Model Railroader explaining the concept of NO BLOCKS... I was in the middle of building the frame work for my first large railroad. I had a new home and a full basement to create. Having all this room I was an HO modeler at that time. I had designed the layout the same as I did in a previous article. Model Railroader magazine had started monthly articles on building the CTC-16. This was a great start to DCC, built on project circuit board and wire wrapping. There were a number of electronic hobby shops all over Long Island where I lived most of my life, and I became familiar with them all. A couple of the shops would sell bulk, surplus bags of components and I'd stockpile them. It was like going to a train show and buying out an entire table of goodies.

When manufactures started selling DCC systems, I moved to Hornby's Zero One. Back then there were no standards and you couldn't even think about mix and match. Now thanks to the NMRA we have standards. Hurray! I looked at what was on the market at the time and chose Digitrax. The reason was that I had so many locos and Digitrax allowed you to run a loco without a decoder under I.D. 00. I think they still offer this option. If you're starting out in DCC this is something to consider. Always know that you can install a decoder in any locomotive. I'm an N-scaler now and even if I have to hard wire a decoder, not a plug and play or decoder ready, it can be done. Well, I'm still a Digitrax user and am very happy with their products. Still very simple to wire. I'd like to add one note. I was not happy with the older auto reversing units and the power management units that Digitrax sold. The mechanical relays did NOT respond quickly when running a loco with a sound system, I understand that they resolved this issue with their newer replacement products, but when I was building the best option was the DCC Specialties.



So, let's get started. Above is what my railroad looks like. At the far end of it where the control panel is with the throttle, is a drawer located under the track schematic. This is where I placed the power supplies, command station, and the program track. To the left is the command station. In front of that I added a set of terminal strips for testing, in front of that is a DPDT switch to toggle from the program track or the railroad. To the right of the command station are terminal strips that bring all the power to the railroad. The green circuit board is from DCC Specialties, it is their power shield (circuit breaker). As you go to the right there are a few power supplies, a couple I built myself. The power outputs are 2, 3.3, 5, and 12 volts. They all come off a 15-volt, 5-amp transformer. The keypad controller in the lower right is for the railroad lighting. This also operates through my cell phone. Last is a capacitor discharge unit. It was made by Circuitron, is at least 40 years old, and works great.



The schematic here shows the basic frame work of the railroad. The command station is in the drawer directly under the layout. I ran two 16 gauge wires around the perimeter of the railroad, one red, one black. I also bridged the inner area to the outer area in three places. Digitrax is a system where you don't have to terminate the buss at each end. I created a continuous run. All of my track is fed down to the buss with 22-gauge feeder wires. More on this is in my last article.

(See last quarter's issue) Please be careful not to get the wires crossed. Once again, an easy check is to connect the buss to an old DC power supply. If you have no issues and want to run with the DCC this is the way to have fun and be safe. The wire, the command station, it's all the same no matter what model you might have.

There are

two wires in as power, two wires to the rails, and the Loconet to the throttle. Now my buss is wired to the DCC Specialties circuit breaker, then to the A and B of the command station. I'm going to keep this basic for those beginners. At another time I'll write about full track detection and computer control via JMRI. Right now, I'd like to show just how easy it is to go DCC and avoid selectors and blocks. So, let's get running in DCC



and never worry about a selector to help control your trains again. Your rails are connected to the buss with feeders. The buss is connected to the command station marked rail A and rail B. The power supply normally comes with the command station. If not, it's just a 15-volt 5-amp power supply that you can purchase on Ebay. The Loconet input is a six pin phone jack connector. It is a means for the command station to speak with all the accessories that Digitrax has to offer. A throttle can be connected directly to the command station or the UP7 that you can mount in the fascia. I have five UP5's and UP7's mounted in the fascia around my railroad. The great feature with this is that you can disconnect the throttle and plug it in to the next one to work with your train and follow it around your railroad. Your train will maintain the same speed and direction from when it was plugged in last.

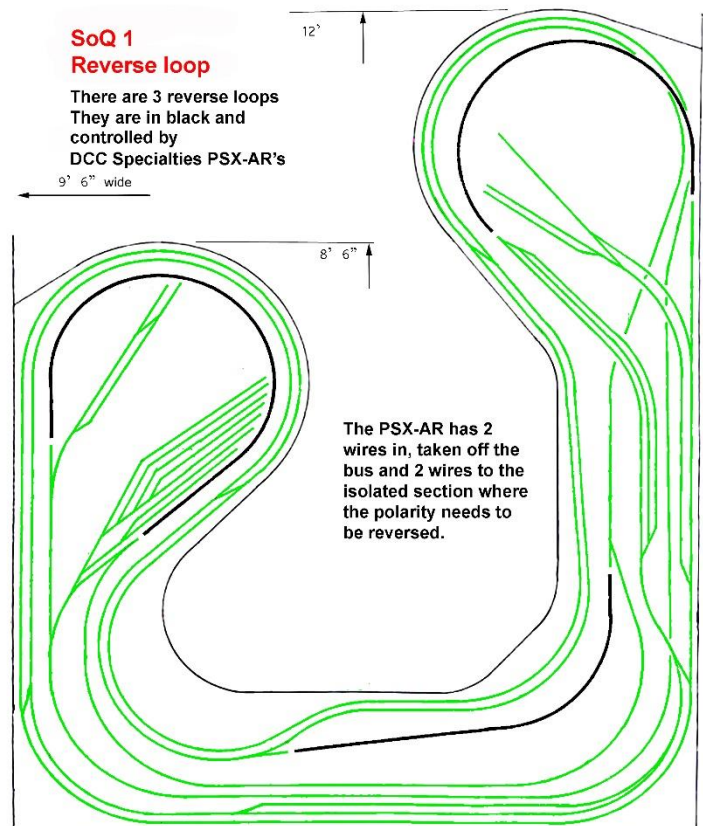


the throttles.

Here's how the UP7 works... and remember, this is an add on. It's very useful but as you grow it can be obsolete. The back of the UP7 has three Loconet jacks to connect to other accessories. There are two terminals for power as well as a 2mm plug-in option. There are two terminals to be connected to the rails just to give you a reference if there is track power. The front has two jacks for throttle connections. It is not necessary to power the UP's. This is to charge

The last piece of wiring track is taking care of my three reversing sections. The schematic of my railroad shows the three reversing sections. I resolved the issues by installing three "DCC Specialties PSX-AR's". There are two wires in that come right off the buss and two wires to the rails. These detect a short and corrects the polarity in the rails without ever dealing with it. It was recommended that I place the PSX-AR's close to the sections of track that I was wiring to. When I first built the railroad I tried a number of inexpensive auto-reversing units with mechanical relays to change polarity. DON'T DO IT! The slow response in the relays caused the sound units to stop and start again. Sometimes buying what we think is a bargain comes back and drives you crazy.

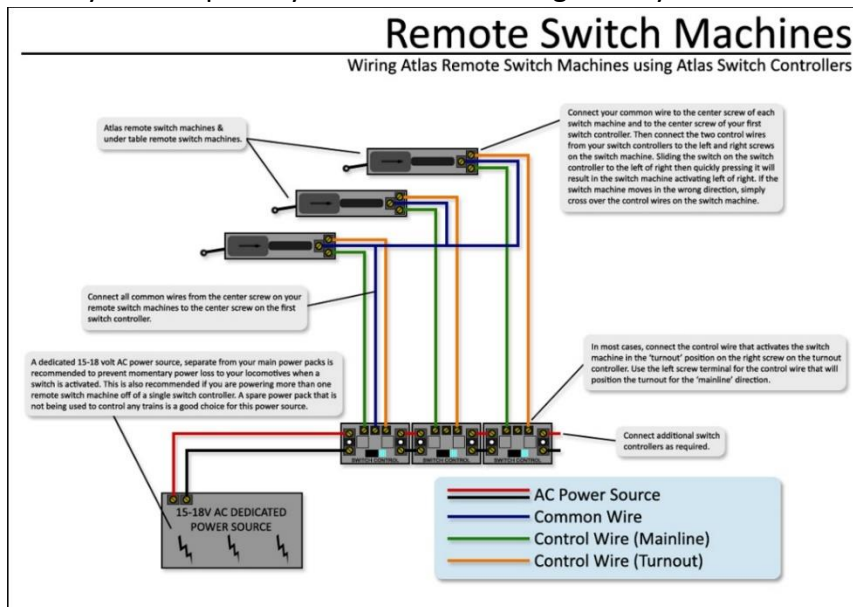
Now all my track is wired and my Loconet connected to a throttle. We're ready to run a train. All new loco's come programed to run as Loco #3. You can do an address change, I'll get to



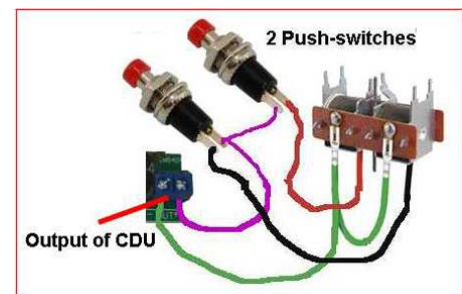
it in another article. 😊 Please note that this is for the person beginning in DCC. Since the start of this railroad I've added a staging area, a few more sidings, five Digitrax DBL168's for block detection, six DS74's for turnout control, and now adding JMRI to do OP sessions and I'll have my dispatcher at the other end of the house.

There are a lot of DCC systems on the market and they're all really nice. I'm not trying to do an advertisement for Digitrax, this is what I happened to choose years ago and I'm still happy with it today.

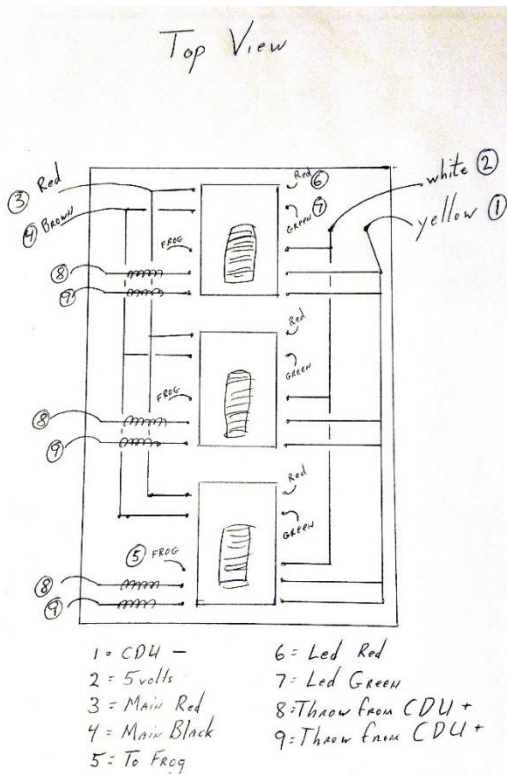
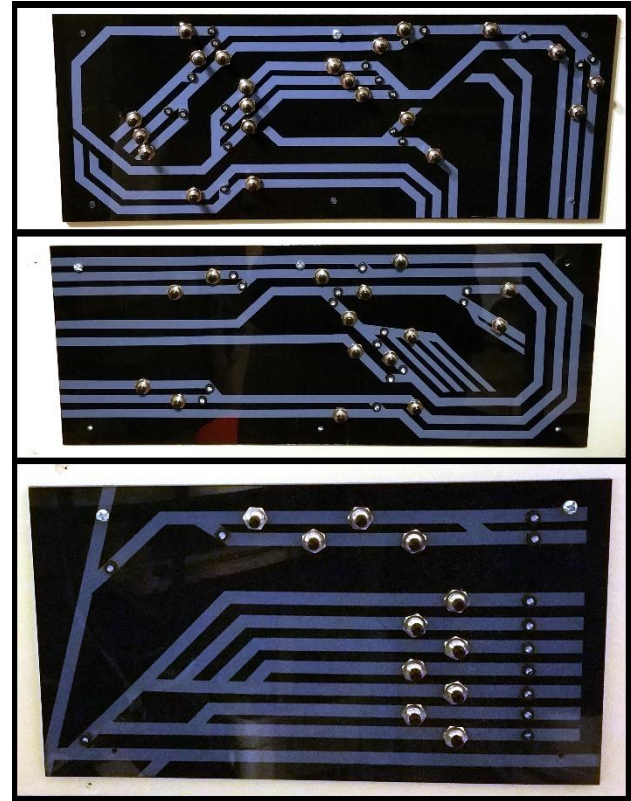
Let's throw some turnouts. My railroad has all Peco Electrofrog. The reason that I use the Electrofrog is because the frog is always powered. Being in N-scale means that a short wheel base switcher might lose contact crossing the frog, if it was insulated. Having a powered frog lets me know that there is no power loss anywhere on the layout. The switch motors for the turnouts are the same ones that are used on their HO scale turnouts. I have about 100 of them collected over the years. The switch motors are Peco's twin coil solenoids. Wiring these turnouts can be done many ways. I'll show the basic, the way I did it, and the way I would do it today. On my first HO layout I used Atlas remote controlled turnouts. Atlas made it so user friendly, I must have been under 10 years old and able to wire this myself. I hope they still offer something so easy to install.



The Peco switch motors work on the same principle. The coil has a common and you energize either of the two coils. These motors do draw a little more power so they should be on their own power supply. A Capacitive Discharge Unit (CDU) is a burst of power and then it stops. This will keep the coils from burnout due to continuous high current. My setup is similar to the photo with the momentary contact push buttons. The green wire is common to both coils, then to the CDU. The purple wire is common on one side of the button and then connected to the other side of the CDU. One button has a black wire to one coil and the other button has a red wire to the other coil. So, as you push the buttons you energize the coil, moving the throw bar which moves the points. This system does work great but now we have to power the frogs. Right now, our powered locos will not make it across a turnout because I gapped (isolated) the frogs when I laid the track. There are many ways to power the frogs. If you're using Tortoise switch machines, there is a Double Pole



Double Throw (DPDT) set of contacts built into the motor. This is the way I would have gone if I didn't already own all the supplies for what I built. You can add Frog Juicers, a Tam Valley product, to power the frogs. There are DPDT latching relays that make it easy to work. I wanted my panels to have LEDs telling me what direction the turnouts are set for. I started by building a set of control panels. The panels are Plexiglass. I drew the layout schematic on paper and went over it with a Sharpie. Then taped it to the Plexi. I turned over the Plexi and placed the tape where the track is. Now this is a mirror image. The taped layout is on the top and the tape of the layout is on the back. Then I painted the back with black paint, removed the tape and painted it again with the pale blue.



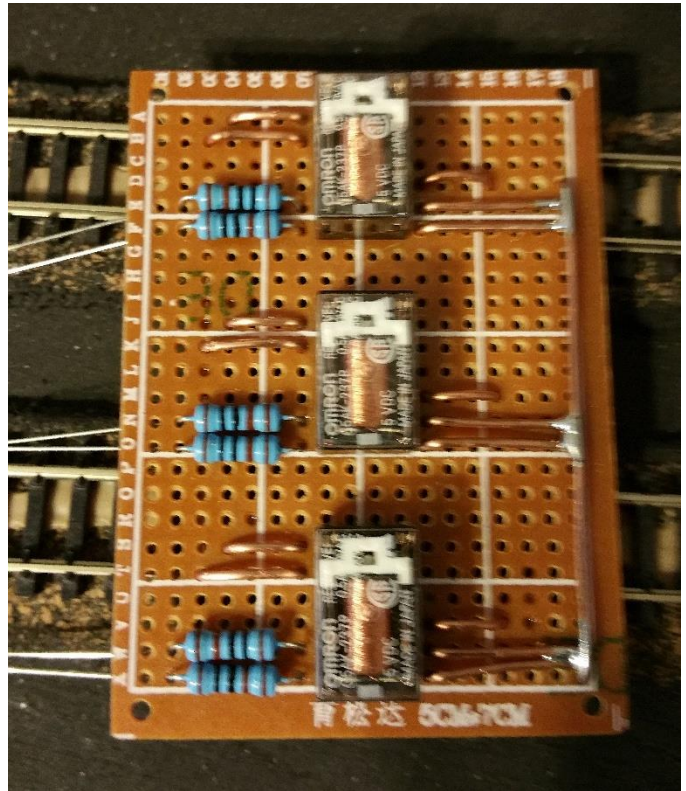
Now the design is on the back and the front is smooth and will not chip.

Now to drill it for

the buttons and LEDs. Here's the finished view. Everything was wired at the work bench, when installing the bicolor LEDs always use the grommets. Without them the Plexiglass will glow too bright. There is one common wire to all the buttons from the CDU. The other wire from the button goes to the turnout solenoid. Then from the CDU one wire goes to all the common points on each solenoid. Now all of the turnouts will work just fine.

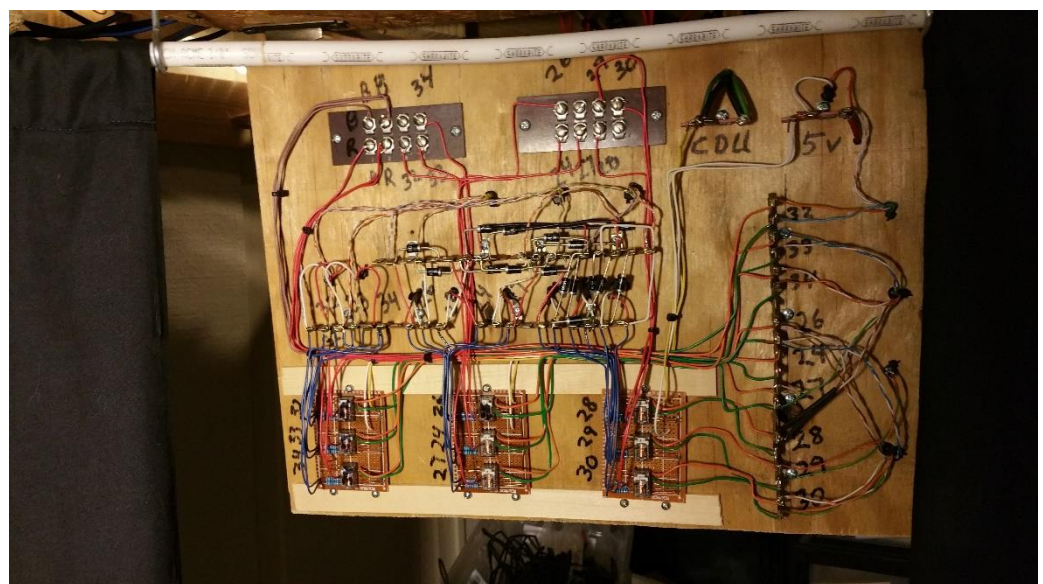
We still need to power the frog and light the LEDs. This is where the relays come in. The exact same way I powered the solenoids, I power the relays, with an inline resistor to prevent burning the relay coils. The relay coils work just like the solenoid coils. Instead of moving a rod to turnout points, it's moving contacts. I had said earlier that I had a habit of purchasing all sorts of surplus electrical parts. All of this was before we had frog juicers and premade components just for this purpose.

Here's a quick explanation of what I did. I built about 20 of these boards. Each one has three relays on them able to operate with three turnouts. With the simple circuit in place for the switch motors (solenoids), I took the common wire from the CDU and ran it to #1, the yellow wire. From the other side of the momentary push buttons, I placed the red wire to #8 and the black wire to #9. Between the CDU and the relay I needed to add resistors so as not to burn out the relay coils. This needs to be calculated based on your output voltage. Mine are about 750 ohms. Now the coils will move in either direction. Now to power the frog. The frog must be powered for the main or divergent route. This is done by taking a wire from the buss and connecting one to #3 and one to #4. Contact #5 is connected to the frog. Even though the relays are made for low voltage, there is no spike when they are thrown because there is no closed circuit until the wheels are on the frog. For the LED side, #2 is my 5-volt input, #6 and #7 are the outputs to the LEDs. I wanted my panel signals to show red and green, so the LEDs are bicolor with three legs on each. The center is the common (-) and the outside two are the (+) from the relay. The LEDs will need a resistor on the common. I used a 470 ohm. A view of this is in the yard



where there is only 1 LED for each spur. If the turnout is thrown for that spur the LED is green and the others will be red. If I push a button for another spur that one will go green and the last one will be red. After wiring one board I'd test it to see if the frog continuity is correct as well as the LEDs. If the frog continuity is wrong just swap wires #8 and #9. Once that is correct check the LEDs to be certain they are displaying what you want. If they are wrong I'd just swap the two outside wires on the LED. I had 34 turnouts to wire at the time. So, this is how I planned and built my railroad. I placed all my power supplies in a drawer and all my turnout circuitry are on flip down

panels right at the front of the layout, just behind the draping. There are many ways to wire your railroad. The one thing that you should all be doing is to color code what you do and document everything. Murphy's law... "what can go wrong will go wrong." Also, I plan on leaving this home to one of my children and documentation of my railroad will be a help.



About a year and a half ago I learned what OP sessions are and got hooked. I am now adding a staging area, a few more sidings for industries, and full block detection with turnout control for JMRI. A dispatcher will be at the other end of the house with full control. Can't wait till we're doing OP's here. Remember, this is a fun hobby. If it's stressing you just work on something else for a while. I know working under a layout can wear me out. If I can be of assistance, you can reach me at chippecere@gmail.com

Chip Pecere

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MODEL RAILROADING IS FUN

By Ed Harris

The third and final module is called "The Neighborhood."

When I was a child the train tracks were a couple blocks away. We used to go to the tracks to catch crawdads after a good rain. Many a penny was put on the tracks to be flattened. Steam engines were still running at that time.

Sixty years later I still remember most of the neighborhood street names. I can still name the neighbors on my block and the immediate neighbors on the block behind us.

I picked four houses to model for this module. I picked Mrs. Startzman's house, who lived across the street from my old house, a lot of memories there. She had three fig trees in her back yard. When it came to picking time, it was me that did the picking AND eating, my sister helped with the canning. Mrs. Startzman also had a brick Bar B Que pit in the back yard, the grill was 3' x 5', with a big smokestack. You could cook some food on that thing! Once a year we had a block party and there was some cooking done on that pit. I think I can still smell that pit.

Mike Martin was my best friend, he lived two doors from my house, I am modeling his house also. At Christmas time everybody bought a live tree. Oh, the smell of Christmas trees! But, come January the trees were discarded, Mike and I would collect the trees and make forts in our backyards. We would stack them away from the fence and then lay trees on the fence and the stack of trees that we had laid for the roof.

Eddie Averdick lived two houses on the other side of Mike, his house I am modeling too. He was in high school while I was in elementary school. I still have a picture of him and my younger sister, her holding a guitar. Eddie and some of the other neighbor teens formed a band and they practiced at his house, of course we younger kids watched. Eddie was good to the younger children. His garage was turned into two separate areas. One area was the laundry, and the other was Eddie's study room or, his own personal hangout.

Of course, I am modeling the house that I grew up in. We lived on Rice Blvd and the people whose backyard backed up to ours were on Milton St. I used to be able to go from one end of the block to the other without touching the ground, using fences, trees, and garages. Where I lived, we had two pecan trees. I remember baskets full of pecans. Mike and I were playing army one day, I was up in one of the pecan trees, standing on a branch and holding a branch above my head. Mike got the drop on me and I was shot out of the tree. Literally! When Mike shot me, I let go of the branch above me, which gave permission for the branch that I was

standing on to throw me into the air. When I landed flat on my back, the wind was knocked out of me, but good. I have not played army since.

Herman Park was about five miles away, every Fourth of July, I would climb to the top of one of the trees to watch the fireworks. More memories! All that swaying in the wind can still be felt.



The Neighborhood Module

As you can see, I have not gotten much scenery done, medical issues have slowed me down. I was just going to build the four houses, but when I lined them up the way I remembered, I had room for one more house. I have not figured out who's house, yet.

What do you think of the base, that yellow and red sure does stand out? Ground cover will hide that. Those are yard signs that I have advertising my Christmas light business. The other two modules that have been covered in previous quarters, I used old poster boards that I had stashed behind the couch. They were from a 60's themed birthday party I threw. I am a firm believer in using what I have before I spend any money.

I use joint compound and newspaper strips to use as my ground cover. This last five gal. bucket of compound cost \$20.00, I have used about a gallon and a half on the first two modules. I put three layers of compound down, the first layer is really thin for putting the newspaper down, because it just holds the newspaper in place. The next layer is a bit thicker to give contour, and

the third layer is used to fill in voids and increase areas. After that is done, paint and ground cover finish it out.

Hopefully I will be doing better by the time of the convention and I will see you all there. I believe this convention will be a memorable one.

Ed Harris

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Well, at 67 years old, retired to Florida, and not having a basement, I am now an N-scaler. I've also been involved in a few of the local groups and started doing OP sessions. Now that I want to do OP sessions on my own railroad it's important to be able to identify all the locos and rolling stock. I know my eyes are getting weaker and it's becoming more difficult to read those road numbers of the locos and cars. The road number of my locos are the DCC address numbers. I used to use a magnifying loupe to see the address number and really started to get annoyed and discouraged when running my railroad. Then I remembered the days of going to clubs and paying a cover charge to get in. They would stamp your hand with a UV (Ultra-Violet) rubber stamp so that you'd



be able to go out for a smoke and return without a second or third cover charge. Upon re-entering you'd pass your hand under the UV (black) light to show that you already paid the cover charge. What a great and simple solution to my problem. I decided to use



that same type of identification on all of my motive power and cars so I went on Amazon and Ebay and started looking for UV markers and mini UV flashlights. Here's what I've found. I purchased the markers and flashlights from Ebay, on Amazon I found the Rust-Oleum Matte clear to seal everything. The images here are exactly what I bought from the site. Now we have Temu and I've purchased a second set of markers from there.

Before you start marking your trains, think about where they are going to travel on your railroad. You might have some yard switchers that only stay in one location. How about using one color marker for that area? What if you have a refinery with cars that move between a port or terminal to the refinery... use a color for those. All of these approaches can help when setting up for Op sessions. If you're part of a club layout you can write your name on the trains to identify what's yours. I started to use them to identify the road numbers but it has grown.

So, let's get started. Remove the body shell from the drivetrain and/or remove the trucks and couplers. If it's a steam engine, I just mask off the area with painter's tape. Make sure you always dust off your shells before you start. Shine the UV light on the shell and you'll see all the dust it collects. For this I use one of those fluffy makeup brushes that my wife donated. If you've already weathered your cars and locos, make sure the weathering is sealed on. It doesn't hurt to spray a clear coat over the body shell.

I write the address number of my locos right on top of the engine. You can add your initials on the locos or rolling stock if you're a club member. Give it a little drying time, and check it with the UV light. Next, I'd take it to the spray booth and clear coat over it. Just a couple of light passes will do fine. **Always have adequate ventilation.**



Here is what I used to have to look for with a loupe. Remember this is N-scale and the only road numbers are sometimes only on the number boards.





As I rebuild my railroad for Op sessions, I am now adding the road numbers of all my rolling stock on the roofs, sides, in a gondola, or on a flat car. I'm also photographing all of them and adding them to JMRI. I'm not concerned if I have a set of cars with the same road number. I just change a digit when I write it with the UV marker. There are UV flashlights clipped on to all of my throttle holders throughout the layout. The light does not have to be dim or adjusted for you to see the numbers with the UV flashlight. I also have mini flashlights that hang on the fascia and a couple of holders with coupler picks and re-railers. In N scale, re-railers have become a must (LOL). This is a very simple list of materials, very easy to do,

and a tremendous help in running my railroad. Can't wait to do my first OP session.



Chip Pecere



The Western Bay Railroad is a 950 square ft On30 layout in Port St Lucie. We meet almost every Tuesday evening. We are looking for new members to join our group. There are OP sessions & scenery that we are still working on. If you're a

modeler and serious about learning, give us a try! Go to our website or contact Al Sohl MMR als0622@yahoo.com

***'No dues, just a great experience'*
westernbayrailroad.org**



Showcase

Another quarter, another offering from Bill Cialini. This time around Bill has detailed a 3D model kit representing a Spike Puller. The model comes from Silver Spike Designs and as Bill explained if you are not familiar with the equipment you are in for a ride. The model comes with no instructions, nor illustrations, good thing there is Google. Bill used wire, styrene, clear styrene, some solder, and some artistic license to detail the electrical and hydraulic lines and windows.

Silver Spike Designs may be a site to look at, they cover the gamut in MOW equipment!





Large Transformer Loads for Depressed Center Flatcars

By Gene Jameson



Over the years I have seen many large transformer loads on both normal and depressed center flatcars. Most of the ones that I have seen in the past 10 years have been on depressed center flatcars. The depressed center flatcar allows a taller load to be transported without requiring a “High / Wide” load movement. Heavier / larger transformers would be carried on a depressed center, four truck flatcar.

Regardless of the era you are modeling, you can build a model that is a real “eye catcher” and will lend itself to prototype operations. One thing nice about the larger transformer loads is that you can make a “proto typical” length train that is used in a special movement i.e., a “High / Wide” load movement just by making the transformer just a bit taller than the height limit of the era you are modeling. By definition, a “High / Wide” load

that has one or more of the following characteristics: over 11 feet wide, over 20' 2" above the rail head, requires more than four axles, weighs more than 265,000 pounds. Below are the standard height and width limits for classic and modern eras.

	Height	Width
Classic (1920 – 1982)	17" 0"	10' 8"
Modern (Post 1983)	20' 2"	10' 8"

One thing nice about this project, I have never witnessed two transformers that were identical. If you look at the transformers that are installed in larger "sub stations" you will see many different dimensioned large transformers. You can take what you like from one transformer, add something you like from another transformer and put them together. I would bet that some place, somewhere, there is a transformer that looks like the one that you modeled.

The transformer really looks like it would be hard to build, but in fact it is not all that bad. It did take several evenings to complete it, but I was working without a drawing or measurements. Toward the end of this instruction is the drawing for this transformer. The biggest thing that you have to worry about is getting the basic box square.

For this project, I elected to use a Walthers four truck depressed center flatcar. I will describe the modifications I made to the model; the same modifications would be performed on a smaller single truck depressed center flatcar. Before you start building the model, please read the entire handout. This gives you an overview of the assembly process and things to watch out for.

{Editor's Note: Since Gene had this article published over ten years ago there have been newer releases of depressed flats from, ExactRail and Class One Models.}

Materials Needed for this Project

Evergreen .030 sheet styrene # 9030
Evergreen .080 X .125 rectangle styrene rod # 166
Evergreen .060 X .060 square styrene rod # 153
.015 piano wire
.046 brass rod
.020 brass rod
Model Master Camouflage Gray #1933
Model Master Gunship Gray (Spray) #1923
Model Master Gunship Gray (brush on) #1723
Model Master Insignia Red (brush on) #FS31136
Paint to match the color of the car that you are building
Testors Dull Coat #1260
Testors Brown (spray) #1240
Testors Rust (brush on) #1185
Testors Flat Black #
RustAL
Weathering chalks
Tenax-7R
Sand paper, 400 grit (wet / dry)

Squadron Green filler putty
Super glue
Detail Associates Sand Hatch Covers #SD3001
Walthers Four Truck Depressed center flatcar (your favorite road name)
Kadee #5 couplers (optional)
Proto 2000 36 inch flat back metal wheel sets (optional)
Walthers Goo

{ **Editor's Note:** Tamiya Extra Thin Cement can be used in place of Tenax-7R. In my opinion there is nothing better than Methylethylketone (MEK) for welding styrene together, but the Tamiya is a good substitute.

Tools Needed for this Project

#56 drill bit
#74 drill bit
#76 drill bit
#77 drill bit
#80 drill bit
Pin vice
Small adjustable machinist square
Kadee coupler gauge
Scale ruler (metal)
Small file set
Round nose pliers
Northwest Short Lines Chopper
Reboxx Exxact Socket Tool
X-Acto knife with sharp #11 blades
Touch-N-Flow glue applicator
Tweezers
Miter box and razor saw
Leather punch
Dial Caliper (micrometer)

Getting Started

Remove the trucks from the car. Remove the wheel sets from the trucks and paint the trucks with the Testors #1240 Brown paint and set aside to dry. Paint the outside wheel web with the Testors #1185 Rust paint. Be careful not to get the paint on the wheel tread or the axle point. Keep the paint off of the lip of the wheel; this will leave a shiny rim that makes the wheel look like it has been through the retarders in the hump yard many times. After the brown paint on the truck has dried, spray the truck with Dull Coat and set aside to dry. Use the Exxact Socket tool to ensure the truck side frames have the correct shaped "point" for the axles of the wheel sets. This also gets any paint overspray out of the area where the axles ride. I have found that by using this tool I have improved the rolling qualities of my rolling stock. Check the wheel sets with the NMRA gauge to make sure the wheels match the gauge. When the trucks are dry, install the wheel sets. Paint the couplers with Testors #1185. Be careful not to get paint on the pivot of the coupler.

Modifications to the Depressed Center Flatcar

Drill four #77 holes in the deck as shown by the yellow arrows in Figure 1, these are the holes for the lower tie down rods. Using a #74 drill bit, drill holes in the deck flanges for the upper tie downs, ensure they are open and the proper size for the tie down rods (see Figure 2).



Figure 1

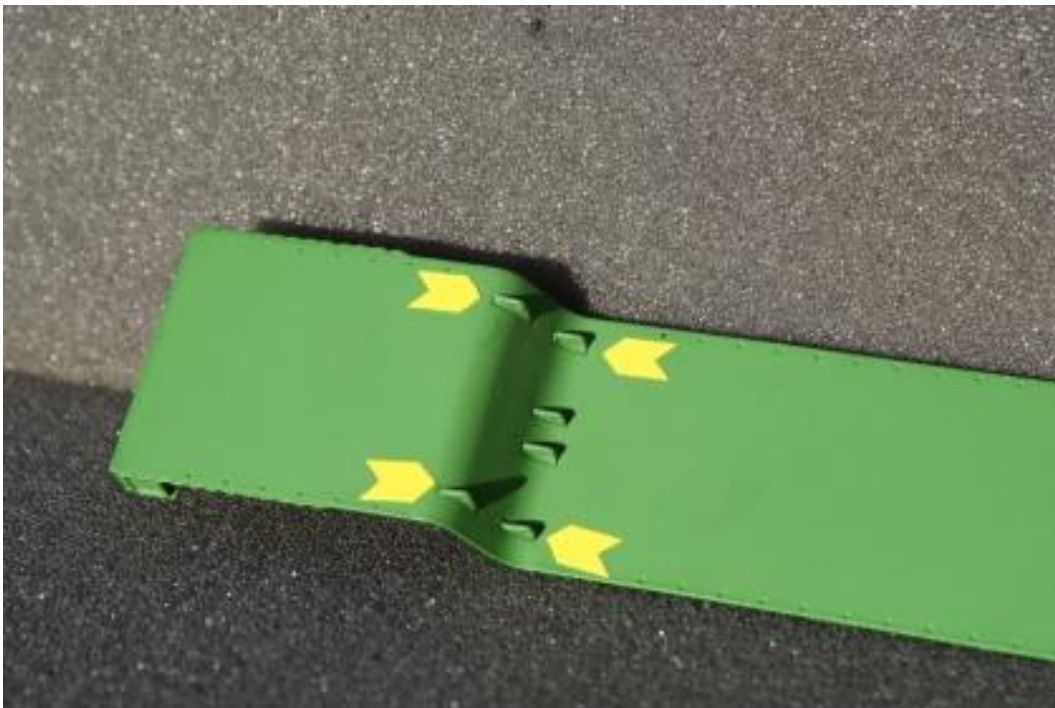


Figure 2

Adding the brake piping is a nice touch on this car as there is a main reservoir, auxiliary reservoir, triple valve, and the train line brake pipe on each end of the car. I have not been able to get a real close up look at the brake piping on a depressed center flatcar to verify the pipe routing that I used.

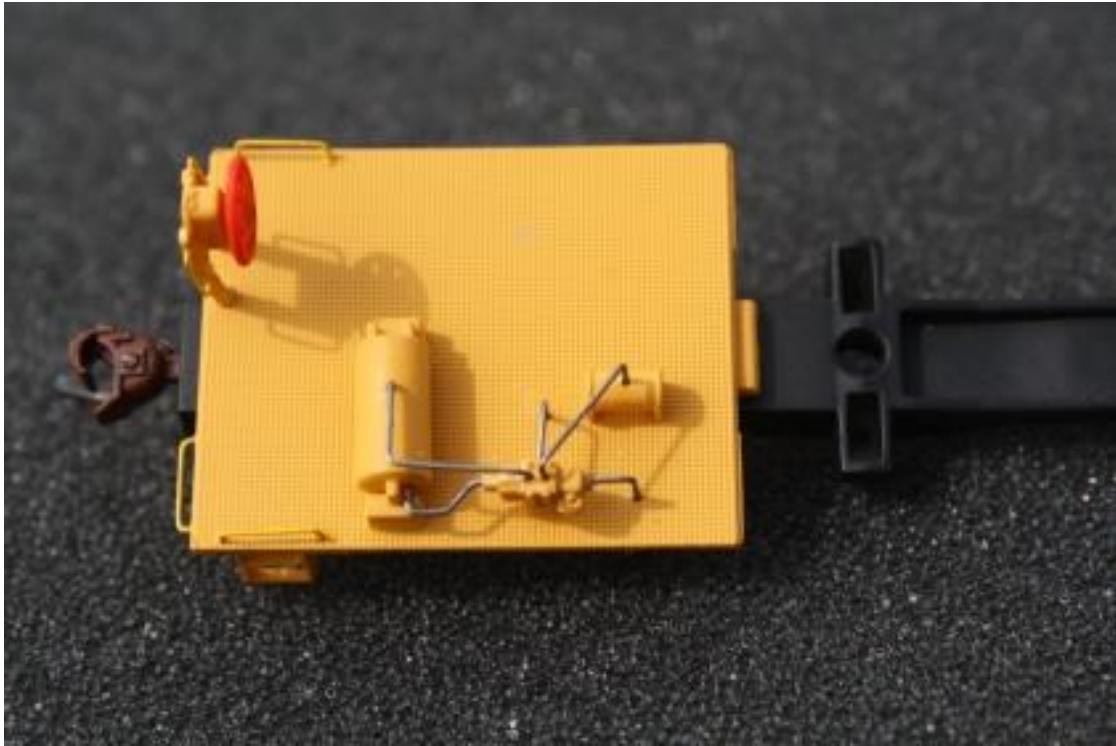


Figure 3

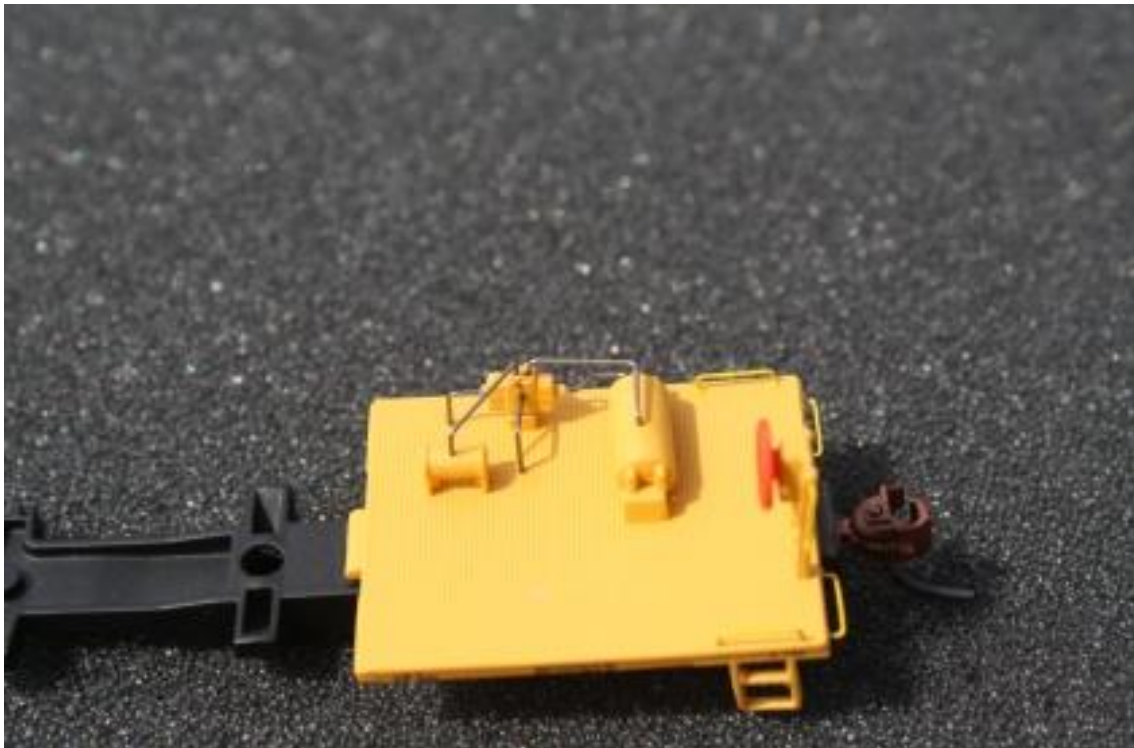


Figure 4

Caution: Be very careful not to break off the ladders on the end platforms while you are drilling holes, installing grab irons, and forming the brake piping. Using the #77 bit, drill the holes for the brake piping on the main reservoir, auxiliary reservoir, triple valve, and the train line brake pipe (see Figures 3 and 4). Using the #80 drill bit, drill the holes for the grab irons on the end platforms. Use the directions included with the flatcar for locations of the grab irons.

Attach the grab irons to the end platforms with super glue. Using Figures 3 and 4 as a guide, bend .015 piano wire for the brake piping. Attach the brake piping with super glue. After the super glue has set up, paint the grab irons and the brake piping to match the color of the car. Set the end platforms aside to dry.

With the paint on the grab irons and brake piping dried, give the car a heavy coat of RustAL and set aside to dry. Apply a second coat of RustAL if needed. After the car is dry use the weathering chalks to get the weathered look that you want. When you are satisfied with the weathering, use Testors Dull Coat #1260 to seal the chalks and give the car a nice dull finish.

Building the Transformer

Basic Body

When you cut the top, bottom, ends, and sides for the transformer remember that pieces need to be **square**. The top must match the bottom in size, the same goes for the sides and ends. This is where you want to take your time to get things right and straight. Once the “box” is built, the rest of the project goes rather quickly.

All of the measurements from this point on are given in HO scale feet and inches unless otherwise stated. If you make the basic box a little different in size, the other measurements shown in the handout will be different.

Cut two pieces of sheet styrene 17' X 9' for the top and bottom plates. Make sure that the top and bottom plates are exactly same size. Cut two pieces of sheet styrene 16' X 17' 6" for the side plates. Cut two pieces of sheet styrene 16' X 9' for the end plates. Cut one piece of sheet styrene 15' X 7' 6" to use as a brace under the bottom plate.

Cut eight pieces of scrap sheet styrene (not to scale) about a half inch by half inch to use as internal braces. These braces must have square corners, use the Tenax-7R to assemble the “box”. Scribe a line in the top and bottom of the side plate .030 of an inch from the edge. Then glue the braces to the side plates, about a 1/4 inch from each end of where the side plates will attach. Make sure the square corner is where the top and the bottom plates will attach. Using a piece of scrap .030 styrene, make sure the braces are positioned to allow for a flush fit of the top and bottom plates (see Figure 5).

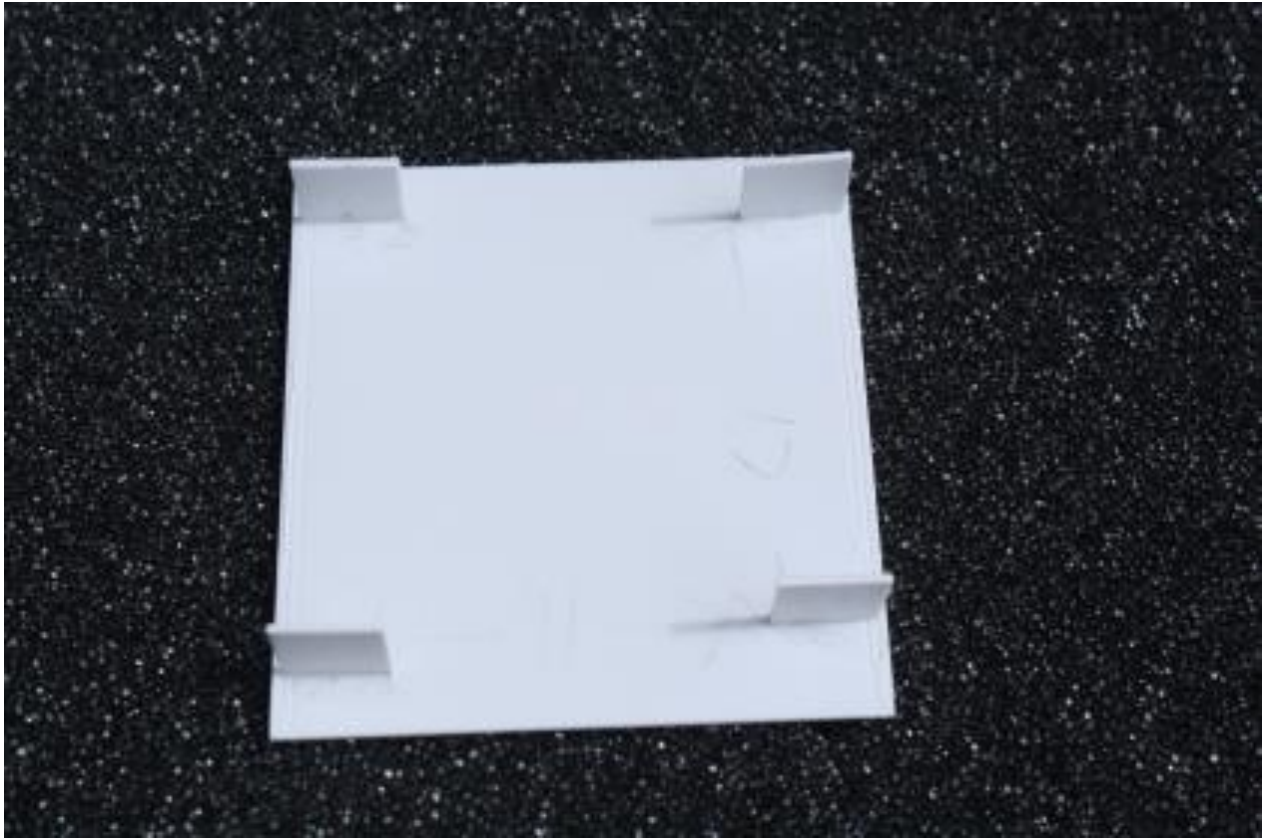


Figure 5

Glue the side plate to the top plate. Make sure the ends of the side plate overhang the top plate by 3 inches on each end. Make sure the side plate is flush along the entire length of the top plate. After the glue has set on the top plate / side plate joint, attach the end of the "box". Ensure the end plate is flush with the top and side plates, glue the second side plate to the top plate. Again, ensure the side plate is flush with the top and end plates, now glue the second end plate to the assembly. Make sure the end plate is flush with both side plates and the top plate.

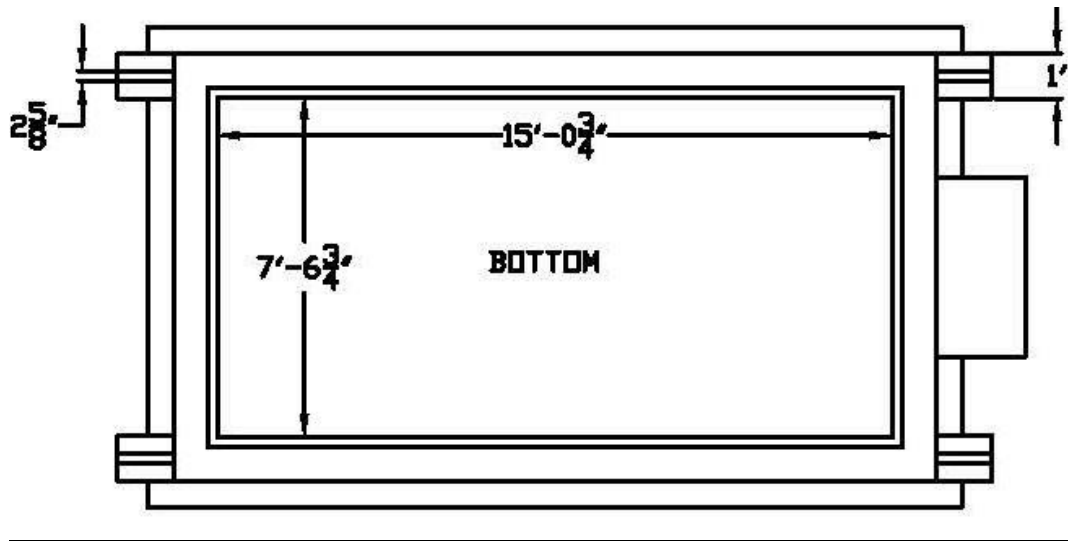
File the corners to get them flush. After you have the corners flush, wet sand the "box" making sure that you remove any glue marks. Set the "box" aside to dry. Fill every joint with Squadron Green putty and set aside to dry. Again, wet sand the "box" to get a smooth finish. Inspect the "box" for smooth, seamless joints on all sides. If needed repeat with Squadron Green putty and wet sanding

{ **Editor's Note:** Tamiya Putty can also be used; it is water based opposed to solvent based Squadron Green. }

Measure and mark the bottom plate 12 inches in from the edge on all sides. Attach the 15' X 7' 6" piece of sheet styrene to the bottom plate inside of the marks that you just made.

Cut two pieces of sheet styrene 1' X 15' 3" and two 1' X 7' 6". Make sure that the height of these four pieces are exactly the same. Glue these to the bottom plate, butting up to the second plate that was added to the bottom plate. Assemble them the same way as the "box" was built.

Drill a #56 hole in the center of the bottom plate, and one on the lower part of the end where the control panel will be located. Using a small triangular file; cut a small triangular "notch" in the bottom edge of the transformer base, centered on each side and end. The two holes and the small triangles allow the "box" to breath with changes in atmospheric pressure after it is installed on the flatcar.



Transformer Base

Control Panel

To make the control panel box, cut a piece of sheet styrene 6' X 4', cut two pieces 2' 3" X 3' 9", and cut two pieces 2' 3" X 5' 9". Glue one of the 2' 3" X 5' 9" pieces of styrene to the 6' side of the 6' X 4" piece of styrene, making sure the 2' 3" X 5' 9" piece is centered on the 6' X 4" piece of styrene, 2 inches from the edge. Make sure this joint is square.

Glue one the of the 2' 3" X 3' 9" pieces to the 4' side of the 6' X 4' piece of styrene. Make sure this joint is square and one end is butted to the 2' 3" X 3' 9" piece of styrene in the last step and 2 inches from the edge. Glue the other two pieces to complete the control panel. Be careful not to sand or file the overhang of the front cover of the panel. This overhang gives the appearance of a cover that goes over the sides of the control panel (see Figure 6).

Fill all the seams with Squadron Green putty and set aside to dry. Wet sand the sides of the control panel box to get all of the joints smooth, wet sand the back of the control panel box to get the sides at the same height. When you are happy with the control panel box, measure the end of the transformer box (the end with the vent hole) to determine the center line of the end and mark where the "control panel" box will be located.



Figure 6

Glue the “control panel” box in place, flush with the bottom of the end plate; using the Touch N Flow applicator (see Figure 7).

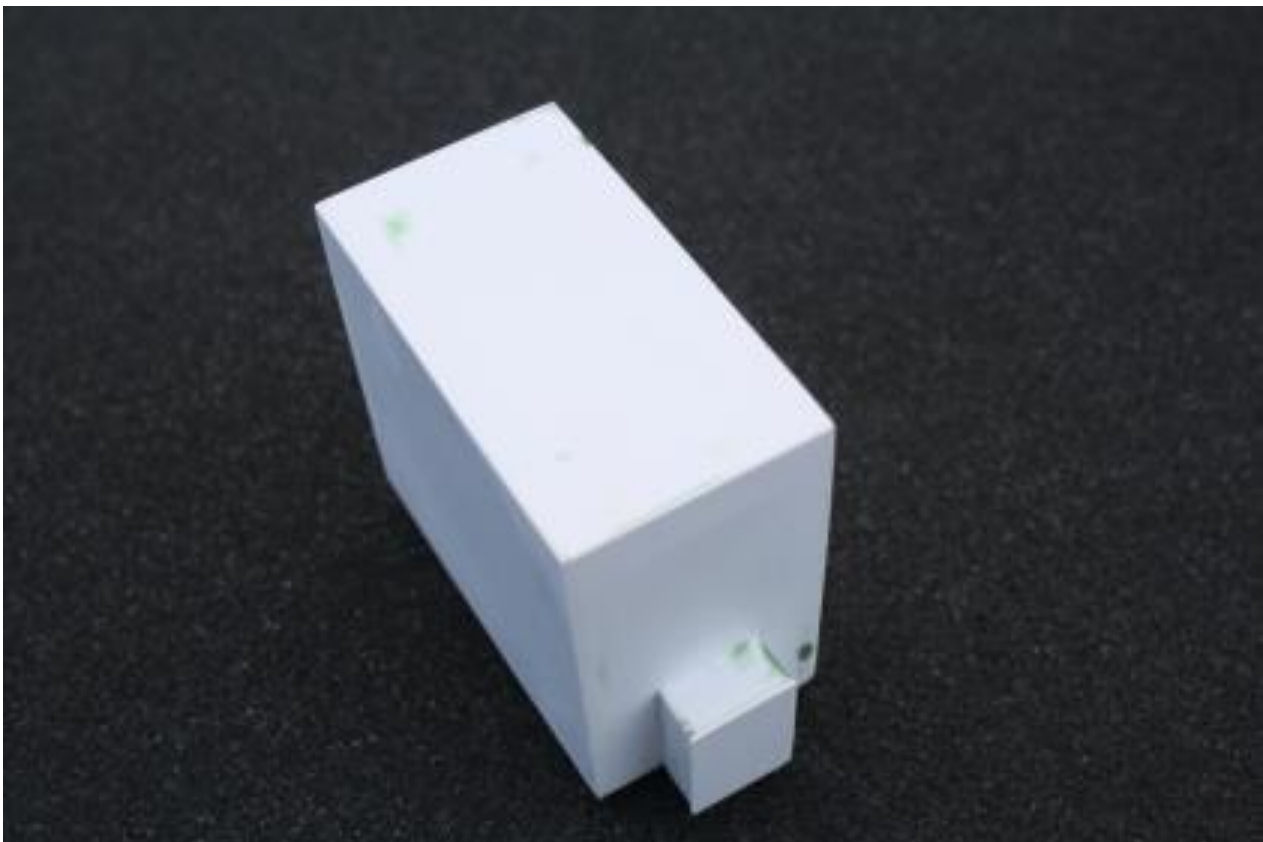


Figure 7

Detailing the Transformer Box

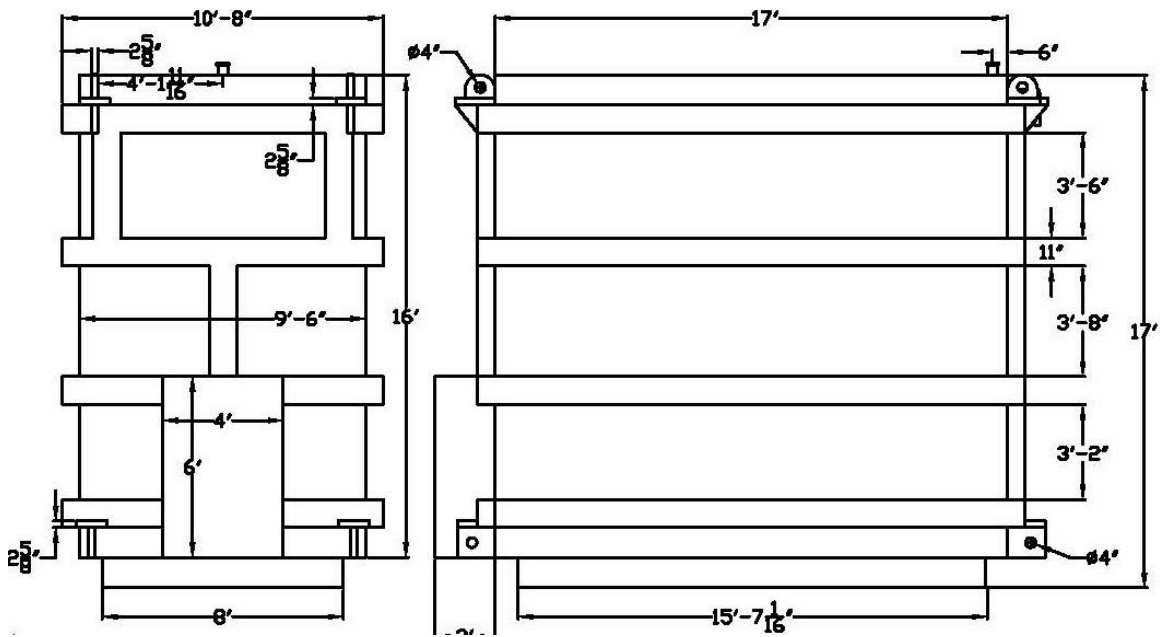
Using the .080 X .125 rectangle styrene rod; cut eight pieces 18' long, cut six pieces 11' long, cut two pieces 4' long, and two 3' 3' long. Measure up one foot from the bottom of the "box" and mark both corners of the sides and ends of the "box". Start at the control panel and glue the 4' long rectangle rod in place, ensure it is square to the "box". This piece should overhang the side of the "box" by a bit more than a foot. Using the Touch N Flow applicator, glue one of the 18' long rectangle rods to the side of the "box". Square to the "box", and flush with the piece you just glued in place, it should overhang the end of the "box" by just over a foot. Glue one of the 11' long rectangle rods to the end of the "box", ensure it is square and flush with the piece that you just glued in place, and that it overhangs just over a foot. Glue one of the 18' long rectangle rods to the second side of the "box". Ensure it is square to the "box", flush with the piece you just glued in place, and overhangs just over a foot. Test fit one of the 3' 3" long rectangle rods between the control panel and the rectangular rod on the side of the "box" you just glued in place. Once it has a nice fit and square, glue it in place. After all the rods on this level are installed, file off the overhanging square rod. Ensuring the corners are square.

Measure up 3' 2" from the top of the rectangle rod you just installed to the top of the "control panel." Mark each corner on both sides and ends and install the rectangle rod on this level the same way as the steps above.

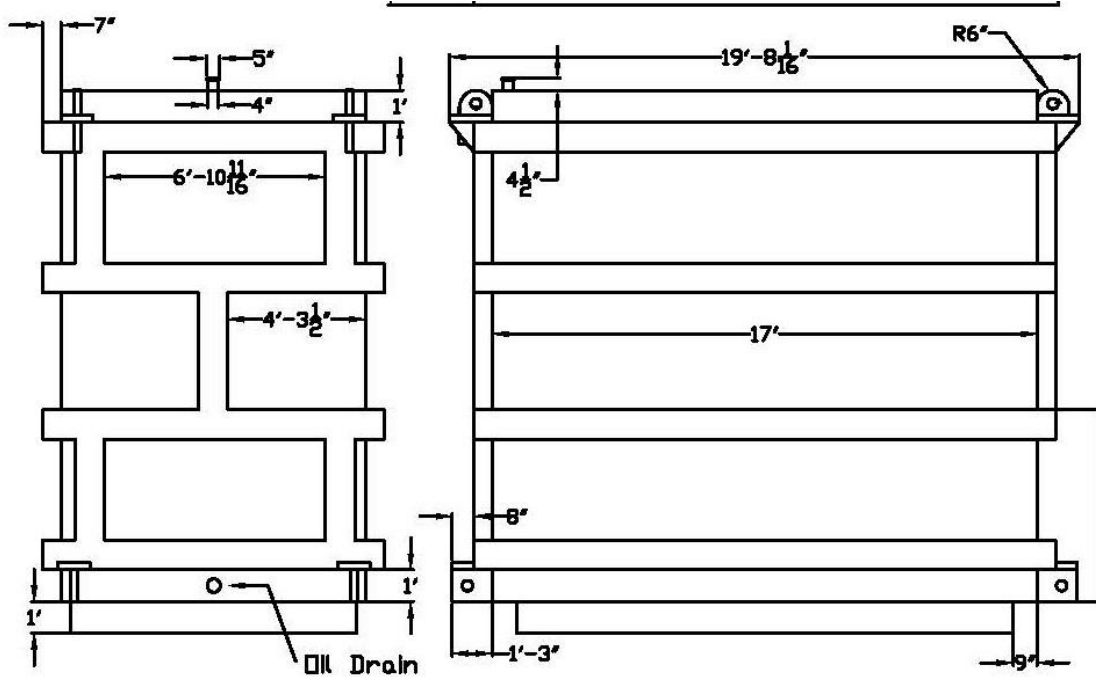
Measure up 3' 8" from the rectangle rod you just installed, mark each corner on both sides and ends. Glue one of the 18' long rectangle rods to the end of the "box". Make sure that it is square with the side of the "box" and one end is flush with the side of the "box". The other end of this rod will overhang the side of the "box" by just over a foot. Glue one of the 11' long rods to the side of the "box". It should be square to the "box" and overhang the end of the "box" by just over a foot. Glue one of the 18' long rods to the end of the "box", square to the "box" and that it overhangs just over a foot. Glue one of the 11' long rectangle rods to the second side of the "box", square to the "box" and overhangs just over a foot. After all of the rectangle rods on this level are installed, file off the overhanging square rod. Make sure the corners are square.

Measure down one foot from the top of the "box" and mark the corners on both sides and ends of the "box". Install all the rods on this level the same way as the steps above.

Cut two pieces of rectangle rod 3' 9" long and four pieces 3' 7" long, you will need to "sand to fit" on all of these pieces. The 3' 9" long rectangle rods go between the second and third ribs. The 3' 7" rod goes between the top and second ribs. Sand the length of these to fit the place where they attach, a good fit here is a must.



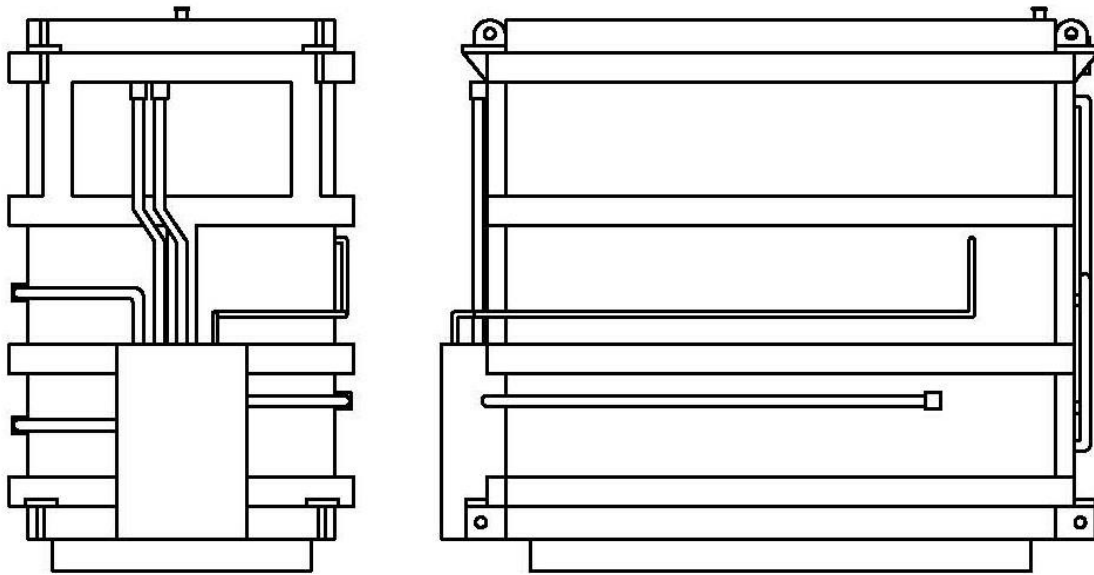
End 1 and Left Side



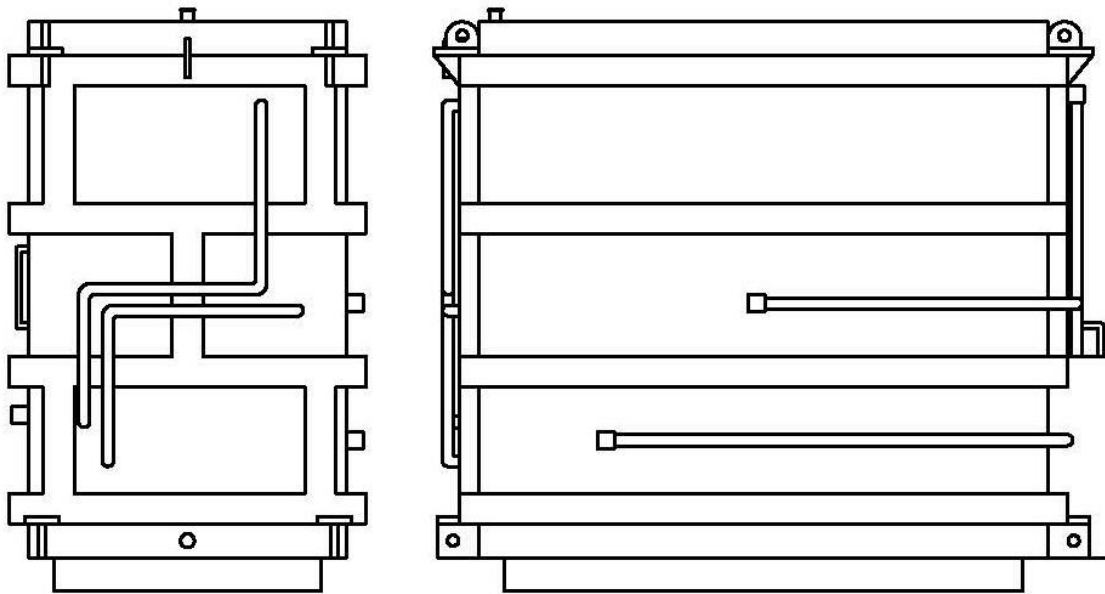
End 2 and Right Side

Inspect the assembled transformer making sure there are no gaps in the rectangle rod that was attached to the "box". If there are gaps, fill them with Squadron Green putty and file smooth. Once you are satisfied with the assembled transformer, attach some wet / dry 400 grit sand paper to a sanding block and sand the assembly smooth. Be careful when working around the control panel.

Refer to the line drawings for the placement of the pipes and conduit. Use .046 brass rod to form the larger conduit, and the .020 brass rod for the smaller conduit. Using the round nose pliers bend both sizes of the brass rods to form anything with the conduit that you want. As I said earlier, there is a prototype out there somewhere for what you do with the transformer.



End 1 and Left Side Conduit Routing



End 2 and Right Side Conduit Routing

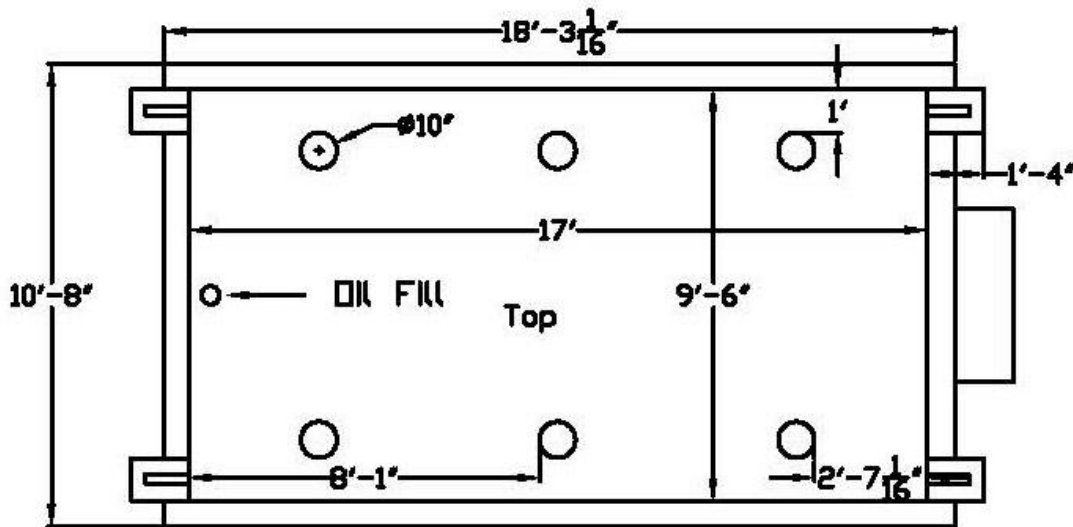
Cut two pieces on .060 X .060 square rod 1 foot long, drill two #56 holes in the top of the "control panel." These holes should be centered, one foot apart, and as close to the rib on the transformer as you can get. Drill a third # 56 hole one foot to the left of the two drilled in the above step, make sure this hole is as close to the rib on the transformer as the other two holes. Drill one #76 hole on the right side of the "control panel," one foot out from the rib on the transformer. Use the line drawing as a template to form the two large conduits above the "control panel," from the .046 brass rod. Drill one side of the .060 X .060 square styrene rod that you cut in the above step with a #56 drill bit. Do not drill all the way through the square rod, you want to make a place for the brass rod to sit.

Glue the .060 X .060 square styrene rod just below the top rib on the transformer and directly above the center hole on the top of the “control panel.” Glue the second .060 X .060 square rod one foot to the left of the square rod you just installed. Insert the bottom of the .046 brass rod in the center hole on top of the “control panel”, rotate it and insert the top in the left .060 X .060 rod. Use a small amount of super glue to attach the rod to the .060 X .060 rod, and to the top of the “control panel.” Repeat this step for the conduit for the right hole.

Cut a piece of .046 brass rod and using the line drawing as a template to bend the left side large conduit on the opposite end from the “control panel.” Drill a #56 hole in the end of the ‘box” on the opposite end from the “control panel” similar to the location of the left conduit as shown in the line drawing. Test fit the conduit, mark, and drill a #56 hole so it matches the line drawing. Repeat these steps to form the conduit on the right.

Drill a #56 hole in the center of the “box” (both horizontal and vertical) above the two conduits you just installed. Bend a piece of .046 brass rod 90 degrees to form the “vent” for the transformer. Cut the brass rod just below the top rib of the transformer. File the portion of the brass rod that hangs below the top rib smooth.

Cut some scrap .030 styrene sheet one foot wide. This will be used for the “lift rings” and tie down points. Cut one foot wide strip of .030 styrene into 12 one foot squares pieces, cut four pieces 1’ 3” long, and four pieces 8” inches long. Drill a #56 hole, centered in four of the one-foot squares; these will be the lift rings. Round the top of the lift rings to match the contour of the #56 hole. Cut two nine by nine-inch pieces of .030 scrape styrene. Cut the nine-inch squares on a 45 degree angle for bracing under the lift rings. Drill a #56 hole centered in the 1’ 3” long styrene pieces. Referring to the line drawing, install the lift rings and tie downs.



Transformer Top View

On the end of the transformer with the vent, glue the “sand hatch” that is used as the “oil fill” for the transformer. The “oil fill” should be centered on the end of the transformer, 6 inches from the edge. On the same end of the transformer, below the bottom rib; center the second “sand hatch” as the “drain” for the oil in the transformer.

Using the leather punch, with the 1/8 die selected; punch out 6 disks. These disks are used as covers for the electrical connections to the power grid. Refer to the line drawing for placement of the covers and glue in place.

Wash the model in warm, soapy water and let dry overnight. Using Model Master Camouflage Gray #1933, paint the transformer gray and set aside to dry. Once the gray paint is dry, paint the oil filler and oil drain covers Model Master Insignia Red #FS31136. After all paint is dry, dull coat the transformer model.

Mounting the Transformer to the Flatcar

Using scrap .030 styrene, build up the bottom of the transformer until it is almost flush with the transformer base support. Make sure that you don't cover the vent hole drilled earlier.

Set the transformer on the flatcar deck, centering it side to side and between the deck tie down holes shown in Figure 1. Once you know where the center is, remove the transformer and apply Walthers Goo to the transformer base support and place back on the deck, centered as before. Let the model sit over night for the Goo to fully set up.

Cut eight pieces of .015 piano wire, about 24 feet long, six inches from the end of these wires, bend one end 90 degrees. Cut four pieces of .015 piano wire three feet long, six inches from the end of these, bend one end 90 degrees. Cut a strip of .030 styrene 6 inches wide. Cut 24 6 inch squares from the strip. Drill a #78 hole centered in the 6 inch squares. Paint the piano wire and both sides of the 6 inch squares Model Master Gunship Gray #1923 and set aside to dry.

Test fit the short piano wire to the lower tie down holes. Cut to fit, remember to leave enough room for the 6 inch square plates (see figure 8). Once you have these like you want them, use super glue to attach the 6 inch square plates to both the top and bottom of the lower tie down rods.

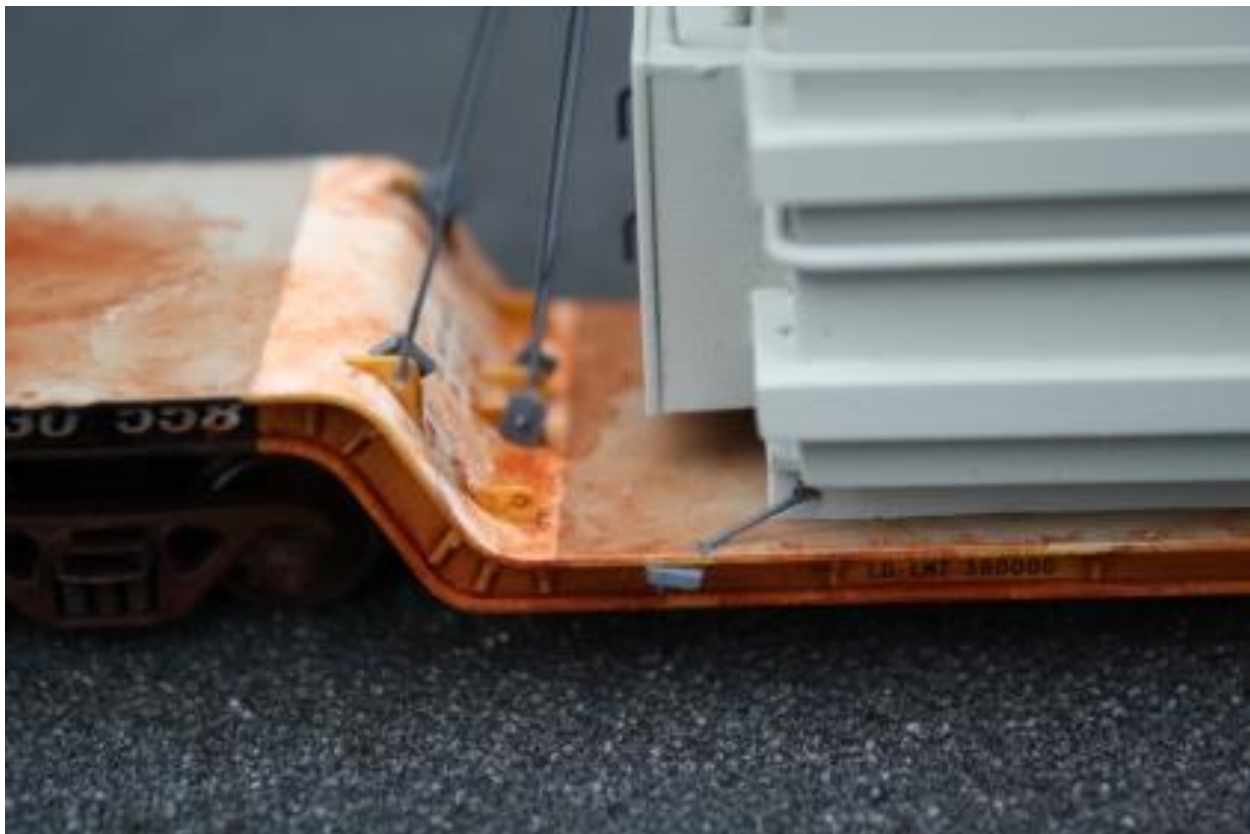


Figure 8

Using a #76 bit, drill two holes in each "lift ring" pad, angling them towards the tie downs on the flat car (see Figures 9 and 10). Test fit the tie down rods to the "lift ring" pads and cut them to length. Remember to leave enough room for the 6-inch square plates. After you have all of the tie downs installed, carefully touch up any scratches on the tie downs. Cover any "shiny" areas by brush with a bit of Dull Coat. Install the trucks and the car is ready for service on your railroad.

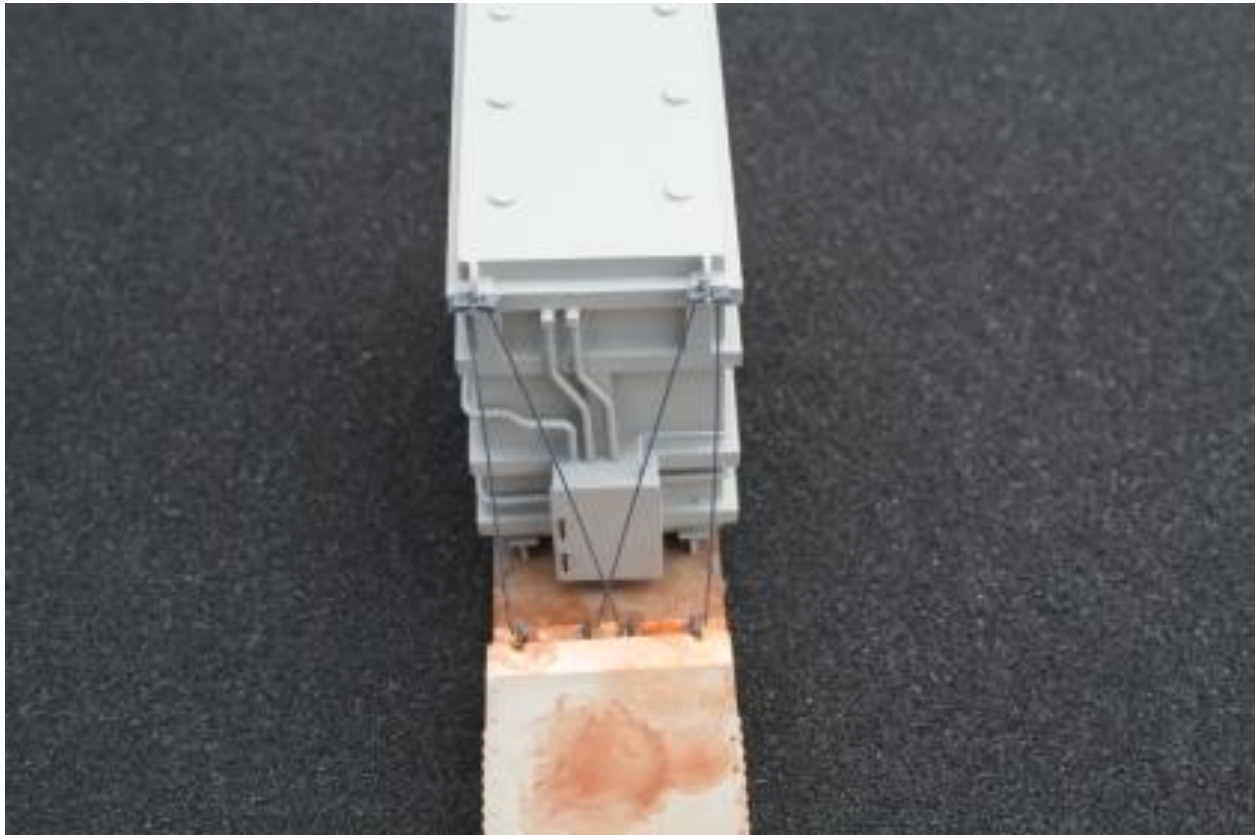


Figure 9

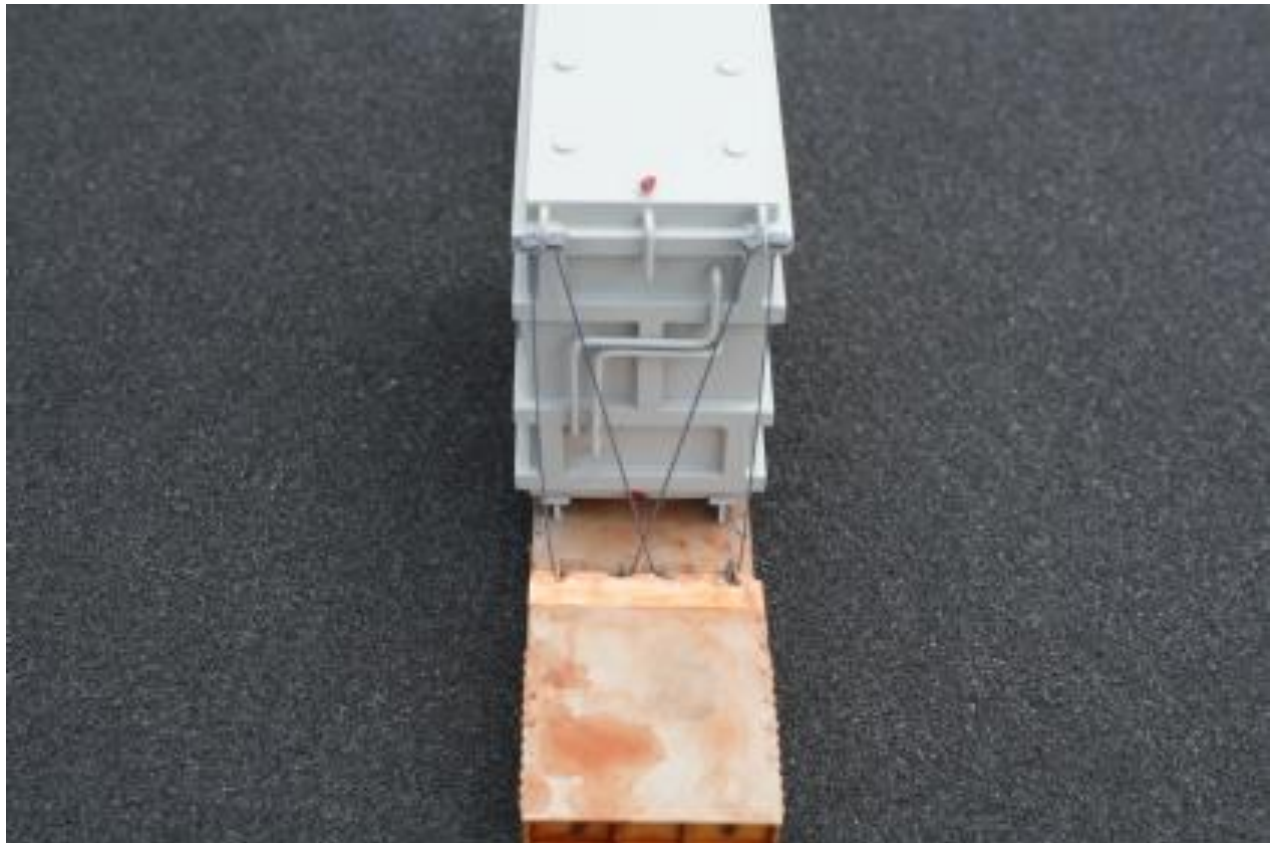


Figure 10



Figure 11



Figure 12



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Observations

By the time this edition is released hopefully you will have done a few things the region has asked of you. First on the list chronologically, that you registered for the convention, with that behind you, the next item was voting for a slate of officers to represent you for the future. Just two tasks other than your local participation within the divisions to make the region successful. If you noticed on the second page masthead our numbers have increased, we are up a few new members from last quarter. I am not sure if they are new to the NMRA, re-rails, or members that have been away for a while and returned, bottom line they are here. Congratulations to those division supers who have recruited, contacted, reconnected and secured these folks.

Let us talk about convention, what is on the horizon? There has been much hype associated with this convention, a new venue, a new focus, new presentations, and the hope of a larger membership participation. From what I read and see on the website all of these areas have been accomplished, less one. I will get to the less one, later.

The Venue, the Hilton in Ocala, conveniently located off two main arteries has everything under one roof, no more traveling back and forth to a venue that closed its doors before dark. You can move from room to room, to all hours in the evening, you can venture into the lounge, or the restaurant if you choose without getting into your car. No more attempting to use a restroom only to find it closed, or a partially closed accommodation within, due to flooding. No more sitting outside debating different railroad issues and being accosted by racoons in the evening, well that aspect is not certain as yet, it may happen.

Focus, the focus is on the membership, members voiced concerns and were listened to, and the committees responded with a different direction. Now, I am not saying that past efforts have been negligent, ideas in the past had been passed around, but some were shelved and never saw the light of day. The membership was asking for more representation, and I believe the change in communications has answered that request. What I am saying is people began listening and a push to improve communications became paramount, hence there is a new look for this October.

Fresh presentations, it was noted that folks believed some clinics were getting "long in the tooth" so the search for new topics, new clinicians also became paramount. Not that that topic has been overshadowed in the past, but now there appears to be a new emphasis. The clinic chair has always been on the lookout for presenters offering new topics, but this time out a few members stepped up. From what I see on our website of the current clinic descriptions, it is a 60/40 split at this point of new topics, it may change in a week or so to the plus side. Hell, they got the "Horn" to come south and present, that should be good for a reunion of seniors! It is sort of a in your face "Wayback Machine".

The other topic on the list, voting, that privilege should be behind you also. Hopefully you have taken the time to vote for those who have your best interests, and you feel that can represent you. As has been said in the past, we have roughly 500 members of which a fifth takes the time to vote, a paltry number in my opinion. For those who did not vote, you have no complaints, for those who did, thank you for participating.

The one question unanswered, how well did we do at the convention? With the effort involved in changing the norm, getting the word out, how well was it received, was it as successful as envisioned? That question can be answered as a whole by numbers, but in reality, it falls in the lap of the individual to determine if it was what they expected. So, let your superintendent, your director at large, the officers, let them know how you experienced the convention, let them know if you had a good time. Without communications, things remain the same.

I leave you with this, I have spoken to some members of the SFRM in reference to the convention who had questions like, what is it going to be like, are we in the same place, are there going to be the same people, will we have the same presentations? I provided the same answer as I do to the general public, the readers of this publication. All of these questions can be answered if you participate, register for the convention, show up, assist, become part of it. Your participation will change it from previous years, your skills and talents will blend with others and improve it.

This originally started as a “Message from the Editor” and my outlook on what is coming and what should have happened. But it has turned more into an observation by me, so much for wearing two hats and two viewpoints, my apologies.

Robert



A View of the Central Warehouse in Albany, NY on Vic Roman's Layout
Note: The reverse Lightning Stripe Scheme on that E-7.

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A Look into the FT and Beyond

by Robert Leonard

A step into the past, a look at first generation internal combustion power in describing the differences of the EMC – EMD F unit, from the 1930s FT to the somewhat contemporary F9s and F10s. From design changes to power changes that improved the efficiency of the units over time. Also, a look at the oddball FL9, truly, a Diesel Electric, a one-off design to satisfy the needs of the New Haven RR in the late 1950s. EMC, EMD and GMD, the Canadian arm of EMD, built close to 4,700 F units from FTs to F9/10 in a span of 21 years.

The concept Electro-Motive Corporation introduced to railroads in late 1939 with the completion of the FT Demonstrator #103 was unheard of, a challenge to steam! EMC had been building switchers since the mid 30s and with their experience and production prowess the thought of replacing steam became a goal. In 1938 the FT was conceived by Richard Dillworth, design head at EMC and with the truck design of lead engineer Martin Blomberg the FT was ready for the takeover of freight transportation. The FT was to be marketed as a single 2700-hp two unit locomotive, one 1350-hp cab equipped unit without batteries and one 1350-hp booster without cab controls. Both units were designed to rely on each other and to not work independently of one another and to be permanently drawbar attached.

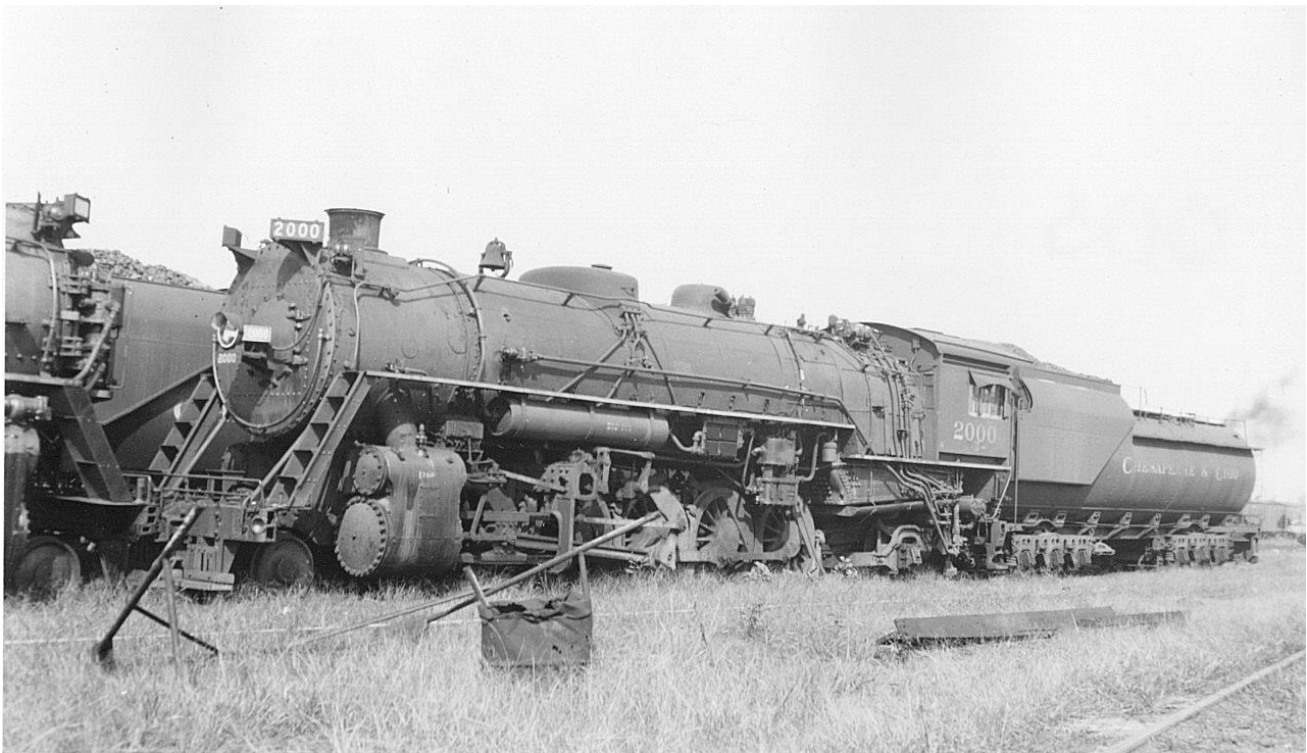
The machine, a different beast, streamlined smooth lines, not unlike its brethren E units, but not the first design to hit the rails in the diesel category. But, it certainly was the one with heavy backing from one of the largest manufacturers in the country. I think three primary factors made the FT successful, the design, an enclosed cab and car body, the power plant and the means to apply that power to the rails. Maybe four, if you consider the influence of the government, but that is another story.

The FTs came in pairs, a semi-permanent unit of FTA/FTB that could be connected to another pair and with all four coupled and cabled together provided 5400 HP, equal or better than a majority of steam power. Not one, but four units, not four crews, but one, economics were the drivers! The FT, an acronym that has been arguably interpreted as **F**reight **T**rain, or some say it stood for **F**reight **T**wenty-seven hundred horsepower was revolutionary and economical. Diesel over steam had many advantages, less moving parts, less maintenance, longer intervals between inspections, all of which led to less manpower.



The maintenance of a steam engine was extensive and expensive, the running gear was constantly checked, balanced and lubed, the boiler inspected and cleaned of contaminants, the firebox and smoke box inspected and cleaned, and the ever-present steam pressure monitoring and stoked fire. Running inspections were performed after every run of a steam engine, every engine was inspected on a weekly, monthly, and annual schedule, plus mileage schedules. All of this time and effort bit into the profit column, diesel was the savior of the bottom line, a money saver.

The average freight engine at the time had a wheel arrangement of 2-8-2 (Mikado), larger Class 1 railroads were using 4-8-2 (Mountain), 2-10-0 (Decapod), 2-10-2 (Santa Fe), 2-6-6-2, and 2-8-8-2 (Articulated) in multiples of two and three to move tonnage. The Dillworth target, the 2-10-2. He focused on competing with the then standard 2-10-2 steam freight locomotive that generated approximately 2700-hp at its optimum operating speed, which was slow. With the increase of tonnage attempted by the railroad it took two Santa Fe type engines to move it. Due to the increase of tonnage railroads were pushing for it became necessary to run a pair of 2-10-2s pulling a consist. To achieve 5400-hp, two 2700-hp FTA/FTB units, were to be operated back to back, thus achieving the same horsepower as a pair of 2-10-2s.



One crew per engine, two paychecks per engine and if you needed more power the railroad spent more money by paying more crews. An FT crew of two could control all of that horsepower (5400) where it would take two to three crews to equal that horsepower. If more power were needed, then another pair of FTs could be attached, and it would still take only a crew of two to move the consist from point A to point B. With this reduction in manpower the Brotherhood of Locomotive Firemen and Engineers was very upset and demanded compensation for their constituents, but that also is another story.

The semi-permanent configuration of FTA/FTB was not appreciated by all customers, Santa Fe didn't like the confinement of the drawbar, for their operations it limited the unit's flexibility. All of the ATSF's purchases had the requirement of couplers on both ends of the two units to provide that flexibility. Other railroads realizing EMD was open to design change followed suit, their topographical operating areas drove the needs so there were modifications available. The use of dynamic braking was another option to the original, mountainous

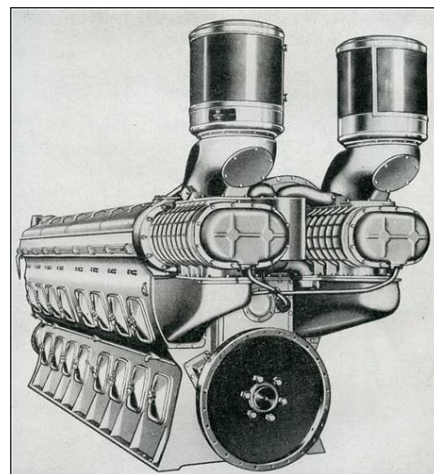
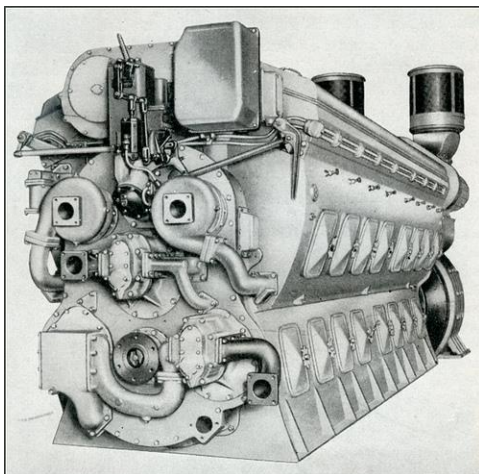
topography demanded it, flat running in the south did not, hence Southern FTA/FTB units are devoid of dynamic braking.

Let's talk about the primary factors that made the FT so popular, ease of maintenance, ease of manpower, car body design, power plant, and trucks. The ease of maintenance and manpower were bean counters dream and a boon to the bottom line. The other factors were engineering excellence. The car body design was a carryover from the E units utilizing a structural web internally that supported the exterior and the exterior skin supporting the structural web. The integral web of vertical, angled and horizontal car body frame members provided a stable superstructure that was supported and prevented from racking by batten panels. As stated, the main frame construction followed the process that was applied to the E units, but it wasn't as easy as removing 20 feet from the center of an E unit frame. It was far more involved, but the attachment points for the major appliances and power plant were similar, which made for a quick build.



Side Panels Removed from an E Unit

Another factor, the power plants were tried and dependable engines that had been used as prime power for the E units. One could say The FT was equal to an E unit, but with two extra axles. The unit had two prime movers, the FTA/FTB has two prime movers. The 567 during the course of F unit production went through four iterations, 567A – 567D. The initial development of the engine was to power the E units, the first use of the 567 was in the E3 in 1938.



Another prime reason the FT and follow on F units were so successful was the trucks they sat on. I think it important to speak of Martin Blomberg and his truck design.

Blomberg went to work for EMC in 1934 and the concept of the FT came about in 1938, granted he was not the lead engineer for the FT project, but he was a formidable influence, Dillworth had a lot of faith in the man. After his employment in 1934 he was made the lead engineer for the passenger E4, thus the similarities between the two car bodies, less the nose, are many. The side panel battens, the longitudinal main frame assemblies, interior structure bracing, the shortened version of the A-1-A truck of his design. Blomberg's design of the A-1-A truck for the E unit was a means for distributing weight, since the center axle did nothing but carry weight. To maintain the wheelbase of the three axles, a traction motor for each axle without stretching the overall wheelbase was an impossibility. The goal of his design for the FT was for a shorter wheelbase to fit the shorter frame and to provide a better ride with the use of the wider spring base that was prominent of the A-1-A truck.



Blomberg B truck

There are three primary components to the Blomberg B truck, the swing hanger that counters side thrusting and reduces what is known as "Hunting". A term that describes lateral motion of a truck in the lead riding up over the rail top and derailing. Elliptical springs that support the side frames and reduce vertical motion, coil springs over the axles and the simplicity of the truck frame itself. A single cast structure that with its rounded curves appears tubular in sections. The overall positions of mounting points made for a reduction in weight and improved ride characteristics of normal coil sprung trucks. Vertical motion in coil springs does not do a satisfactory job of damping whereas elliptical springs take the vertical motion to sliding motion. The B version of the truck as used on F units had coils springs mounted directly over the axle bearings, but it also had leaf springs. The individual leaves of the elliptical spring slide against each other reducing the vertical travel and reducing internal damping. Just as an FYI, Martin Blomberg also was a primary designer of the AAR truck found under a multitude of locomotives, not only EMD.

Models by Type

Model Type	Year Built	Total by Units	AAR Wheel Arrangement	Prime Mover	Power Output
FT	1939– 1945	555 A 541 B	B-B (B-B+B-B) w/ B unit	EMD 16-567 EMD 16-567A	2,700 hp (2,000 kW) (with B unit)
F2	1946	74 A 30 B	B-B	EMD 16-567B	1,350 hp (1,000 kW)
F3	1946– 1949	1,111 A 696 B	B-B	EMD 16-567B	1,500 hp (1,100 kW)
F7	1949– 1953	2,366 A 1,483 B	B-B	EMD 16-567B	1,500 hp (1,100 kW)
FP7	1949– 1953	381 A	B-B	EMD 567B	1,500 hp (1,200 kW)
F9	1953– 1960	99 A 156 B	B-B	EMD 16-567C	1,750 hp (1,200 kW)
FP9	1954– 1959	90 A	B-B	EMD 567C	1,750 hp (1,300 kW)
FL9	1956– 1960	60 A units	B-A1A	EMD 567C or 567D1; plus 660 V DC (3rd rail)	C 1,750 hp (1,300 kW) D1 1,800 hp (1,340 kW)

As modelers of these units, we have created with the help of trade publications a simplified categorization of the models by assigning phases to them, making things easier for the modeler to determine what he has, or has not. This is not something the prototype manufacturer did, they were satisfied with making changes and keeping everything to themselves. It has been determined that phases did not exist for the FT and F2 models, since the F2 was a precursor of the F3, the only cosmetic differences were the porthole windows and the number boards.

So, what do the manufacturers offer, you name it, it is available. From FT to FL9 there is a model of it, some crude, some hi-tech. Almost every manufacturer has offered the F3 and F7, but only a couple have delivered an FT, although another FT is on the way. The FP7 has been offered by a couple companies, Atlas and Intermountain and the one off FL9 by only one, Rapido. But you must understand, it is an FL9, a one off design, it satisfied a bad decision, who besides New Haven ordered them? ... No one!!

Although, the New York central did consider FL9s only because they were on their property being tested in third rail territory. But they already had enough electric power to enter Grand Central Terminal, it didn't make sense to the bean counters to use the unit for freight. I remember in 1957 either FL9 2000 or 2001 sitting alongside the electric shed in North White Plains New York, the terminus of the electric section of the Harlem Division. Therefore, only one model of the FL9 is to be had.

Since we modelers created phases we compounded confusion, for a model to be accurate one needs photographs to follow, historical societies to the rescue. One society in particular has removed most confusion, if you model the PRR there are lists out there that let you avoid confusion. The following list is a compendium of what modelers of the Pennsylvania spectrum have determined and described as phases of the F unit. The list was gleaned from the "Keystone Modeler, the breakdown is arguably accurate, but considering how it is based on "The Standard Railroad of the World" according to Pennsy SPFs, it must be right.

FT: Since the FT is the FT and Pennsy never owned any, thus as far as this list is concerned, it was never built and didn't exist.

F2: Again, not owned by the PRR, it was never built, didn't exist.

F3 IIa: Body style with high shroud cooling fans, chicken wire grille over the openings on the upper segment of the car body and between the porthole windows on A-units, (only on the upper segment for B-units). Two rectangular screened dynamic brake grid openings, square corner side doors with kickplates, square rear corner cab side windows, square passage door windows, windshields with hidden gaskets, small side mounted number boards, boxstyle axle bearing caps and cast pilot uncoupling lever handles. Units built in 1947: 9500A/B – 9505A/B, 9530B, 9532B {6A + 8B = 14}

F3 IIb: Same as the previous style, except with the low profile (pancake) cooling fans. Units built Jan.-May 1948: 9506A/B – 9517A/B, 9518A/B, 9519A, 9520A/B – 9521A/B, 9534B, 9536B {16A + 17B = 33}

F3 III: Same as previous, except with the chicken wire grille only over the openings on the upper segment of the car body and horizontal slotted side body louvers between the portholes on A-units. No difference on B-units. Units built July 1948: 9522A/B – 9527A/B, 9528A, 9540A/B, 9541A {9A + 7B = 16}

F3 IV: Same as previous, except with the horizontal-slatted stainless steel grille in place of the chicken wire. Units built Sept. 1948–Feb. 1949: 9519B, 9528B, 9529A – 9539A, 9541B, 9542A/B – 9546A/B, 9547A – 9561A, 9548B – 9554B (even), 9563A – 9567A, 9677A – 9689A {49A + 12B = 61}

F7 Ia: Same as previous, except with dynamic brake fan instead of rectangular screened grids. Units built March–July 1949 (Last of the pre 1-1-50 units.): 9547B – 9555B (even), 9667A/B – 9676A/B, 9690A – 9699A {20A + 15B = 35}

F7 Ib: Same as previous, except with increased-view windshields and large angled number boards, circular axle bearing caps and rod-style pilot uncoupling levers. Units built Feb.-March 1950 (First of the post 1-1-50 units.): 9640A/B – 9648A/B, 9649A – 9666A, 9650B – 9660B (even) {27A + 15B = 42}

F7 Ic: Same as previous, except with rounded corner body side doors without kick plates, two piece cab window/door rain gutter and circular passage door windows. Units built Jan.-June 1951: 9764A – 9831A, 9764B – 9818B (even) {68A + 28B = 96}

F7 II: Same as previous. Units built Sept. 1952: 9872A {1}

FP7 II: Same as previous, except with vertical slit side grilles and side louvers between the portholes, taller cab side windows with rounded rear corners. Units built April-Aug. 1952: 9832A – 9871A, 9832B – 9858B (even) {40A + 14B = 54}

With all of that said, if you are modeling the Pennsy make sure you have pictures and roster numbers of what you are modeling because someone will ask the obvious! Next time around I will delve into those F3 – F9 variations and what can be used to model them.



Winter is Coming

Prototype Modeling PMing 2

By Mike Brock

{Part 2 of Mike's thesis on prototype modeling was published in the Spring 2004 issue of the Journal Box. I have not included all of Mike's musings, but the key points are there, just not the war stories of how he devised his points of view.}

Well, now that we know what Prototype Modeling is ... the modeling of real railroads or real railroad equipment ... it's time to take a look at designing a prototype layout. This will be a layout depicting parts of a real railroad and the scenery it ran through.

The easiest way to do this would be to simply borrow from my March 2002 article in Model Railroader describing the design concept involved in the building of my Sherman Hill layout. I've never been particularly

drawn to doing things the easy way, however, so let's do something else. This brings to mind, by the way, the question of what to model. I've heard it said that many people model what they saw when they were between 8 - 12 years old. OK ... at that time I lived in east Tennessee ... L & N and Southern country, but I had strong roots back to eastern Oklahoma and the MKT and Missouri Pacific.

So, naturally, I chose to model the Union Pacific a railroad I never saw until I was 40. So much for that theory, but why might this have happened? I think because of the rapidly expanding photographic information that began to become available in the 70s and continues today. Since UP operated large, modern steam power until very late in the steam era and since relatively large numbers of people saw them from the windows of many passenger trains. Although located in a rather sparsely populated area in Wyoming, UP steam operations got more than a share of photographic interest. Added to this, with the publicity associated with Big Boy, the world's largest steam locomotive.

Today though, we'll leave Wyoming to the Big Boys and go eastward. How about Roanoke, VA? OK let's design a model railroad depicting N&W out of Roanoke! Let's say that for some reason we decided to do a prototype layout of N&W. The first step is to list the requirements.

1. Equipment must be available.
2. One major yard, or two small ones.
3. A steam locomotive facility in the major yard.
4. The mainline must travel on at least one side of a mountain grade [I like hard working engines].
5. Photographic information regarding scenes and equipment must be available.
6. Era will be 1952-4
7. Information regarding traffic patterns needs to be available.

{The following list is based on equipment availability 20 years ago, much has been released since, but again the wants and needs are explained and the availability of HO equipment remains prominent.}

Let's examine the list and see how we can satisfy the requirements.

1. Equipment: While the layout could be done in other scales, equipment becomes a problem for those other than HO scale. As far as HO goes, thank goodness for Broadway Limited, Bachmann, and P2K. From Broadway we get the famous Class "A", from Bachmann we get the more famous "J" and P2K gives us two versions of the "Y-3" 2-8-8-2s. P2K also gives us the "S-1" 0-8-0 ... the engines purchased from the C&O ... if we do a few mods. We will soon have the H2A three bay hopper from Broadway and Stewart makes pretty a good rendition of a two-bay hopper. Regretfully we'll have to go to brass to get a well done "Y-6" and "Y-5" 2-8-8-2 engines but if we make this write up good enough just maybe the model making rule will be invoked and someone will produce a nice "Y-6". Branchline makes an N&W coach, but I'll admit that research will be needed to determine just how the N&W passenger car situation stacks up. We'll possibly need some Southern cars as well if we model and we will, the route the Tennessean traveled.

2 and 3: Taking a look at typical layout designs, let's opt for the one major yard with out and back and staging at one end of the yard and staging at the end of the main line run. This gives as long an uninterrupted mainline run as possible. So ... considering requirement 4 as well, we could choose the obvious, Roanoke, and possibly Bluefield. I go for Roanoke because it satisfies those three and five very well and I like the area. Roanoke isn't small, as it is obvious, but it is long and relatively narrow somewhat like my Laramie, Wyoming situation and it is a good candidate for just biting off a portion. I favor the Shaeffer's Crossing area west of the downtown area because of the large engine facility and roundhouse located there. Besides, it has a colorful history because Marty Megregian and I were thrown out of there back in 82 by the Chief of the N&W police who walked right out of a 1947 to do it.

4. We could go in three directions from Roanoke and encounter grades of over 1%. East and west have the advantage of the coal traffic and Class "A" engines never operated north on the Shenandoah line so we can

choose either the run up to Blue Ridge to the east or Christiansburg to the west. I like the Blue Ridge route, there's plenty of photo coverage including video and Brock's curve is there. On the other hand, I like the Christiansburg grade as well, Christiansburg is larger than Blue Ridge. The real advantage of going west however, is the line has more bridges and it follows the side of a ridge for a good distance allowing easier scenery application. Operation seems to favor doing the Blue Ridge option as will be explained in seven.

5. Excellent photographic info is available including the Prince series on steam engines, Jeffreys "NW Giant of Steam", Kalmbach's "N and W in the Appalachians" and many more. "Hooters on the Blue Ridge" is an outstanding video and there are many more

6. The 52 - 54 era gives us virtually all the steam power we need. It also gives us plenty of opportunity to use the huge numbers of different freight cars of other railroads that were in operation at this time for merchandise trains.

7. The traffic pattern through Roanoke east and west was primarily coal, interspersed with merchandise freight and passenger trains. The Southern Tennessean travelled on N&W tracks from Bristol, Tennessee, to Lynchburg, Virginia, pulled by "J" type 4-8-4s during our time, other passenger trains include the Powhatan Arrow and Pocahontas. Loads of coal went primarily east to the Norfolk ports but some went north up the Shenandoah line. Empties went west, empties would be going upgrade west out of Roanoke and even then, they were typically double headed by "Y" class engines. Class "A" engines tended to be operated on merchandise freights to the west of Roanoke, but eastward they were placed on the head end of a rather unique engine operation up to Blue Ridge. 7.2 miles of 1.2%, a coal drag with a 2-8-8-2 on the front and another on the rear would start off from Roanoke and travel to Blue Ridge where the rear helper would be dropped. Then the train would descend about 9 miles of 1.3% to Montvale, there the train would be tied down while the engine ran light back to Roanoke. Another drag would leave Roanoke behind a Class "A" on the point, a 2-8-8-2 behind and a 2-8-8-2 pushing. The pushing engine would again be cut off on the fly at Blue Ridge while the train continued on to Montvale there the cars previously run to Montvale would be added to the new train and the whole train would be run until Phoebe near Lynchburg. At this point the 2-8-8-2 would be taken off and the "A" would go it alone downgrade to the coast. The 2-8-8-2 would either return to Roanoke or help a westbound "A" returning with empties. Given the interesting operation to the east of Roanoke, we'll select it and put staging just to the West of our Roanoke yard.

For Roanoke, the main line will head east, the grade beginning at about Vinton and ending at Blue Ridge where there was a small station, an industrial siding or two and just east, a stone works. We'll have to the model the Blue Ridge Parkway overlook in Brocks Curve #1 at Blue Ridge the town, followed by Photographers Bridge (a location famous for the photographers that used it during the 50s). Alas it is long gone but we'll bring it back to life. We'll do the small railroad bridge over the highway near the scrap yard on the westbound grade from Montvale and we'll finish at Montvale ... staging beginning just afterwards. It would be nice to do this on one level, but we can do two if the necessary space isn't available. In addition to the one big yard, I foresee about eight scenes plus Montvale. Any takers for devising a plan? Next issue, I'll show you a possibility.

There is, of course, fun to be had at making up the cultural aspects and history for a fictitious railroad. Many of us who model a prototype, or prototypes enjoy it for the challenge of discovering and duplicating real history. I also enjoy modeling a real railroad because of the enjoyment of experiencing the culture of the communities through which it operated and the unique characteristics of the railroad itself. Far more prominent back in the days of steam when railroads operated much more independently than today. Still... as recently as 1986 Marty Megregian, Lou Ullian and myself enjoyed some of those characteristics when we ventured into the Roanoke area for several steam excursion operations with both the "A" and "J". I'll always remember the N&W head of security who showed up at Shaffer's Crossing, wide brim hat brown suit and tie with appropriate Virginia accent. There's absolutely no doubt in my mind that he drove up in a new 1949 Ford and when he left he drove

right back into 1949. I'll never forget stopping on a hillside overlooking Christiansburg and having Lou Ullian go down and ask the owner of the house if we could shoot videos from his backyard. After about 5 minutes (seriously, it was 5 minutes) of animated discussion. Lou came back to the car. I asked, "What did he say?" Lou replied "I don't know. Couldn't understand a word he said." When you stood trackside and heard from deep down in the valley ... hollow, the sound of a hooter whistle echoing off the hillsides, unlike any other steam engine, you knew the experience was uniquely N&W.

We'll be back next quarter with Part 3}



Tivoli Track Pans and Purification Plant on the Hudson Div. of the New York Central on Vic Roman's Layout

Photo Match Models

by Michael Collins, MMR

{**Editor's note:** The two awards issued to Mike for his entries were presented to him at the 2017 National Convention in Orlando.}

Western Union Material Car – First Place Award



Mike's First Place Photo Match win with the Western Union Material Car.

Back in the day, this car carried a crew and equipment to install telegraph systems. It would be connected to the front or rear of a passenger train (note the diaphragm doorway), then dropped off at a station worksite. This project started when a friend (Wayne Sittner) emailed a picture of this unusual car to me in 2015, the picture was taken by him at Roselle Park, NJ in 1954. A few other modelers on-line explained the purpose and details of this odd boxcar. Then, one day, at a FCMTS breakfast, I bought for \$10.00 the limited edition Ambroid craftsman kit in 2015 (61 years apart) from a collection someone had in South Florida. It had the same number! I built, detailed and weathered it to match the prototype. I then wrote an article that was published in RMC, July 2018, how's that for networking?



Mike's Entry in the Contest

{Editor's note: A bit of history of this car, it is old, not to say Mike is old, just the kit. The following information was taken from a site dedicated to Ambroid cars;

Introduced in August, 1959, this is a model of a 1929 car for the Western Union Telegraph Company. The ad claimed that prototypically only 20 of these cars still exist in the U.S. and Canada. The kit #1-6 came with Silver Streak arch bar trucks, Kadee universal coupler pockets and a tube of Ambroid Liquid cement. The sides were repainted Pullman Green and lettered for WUTX.

As Mike pointed out, the prototype was built by Western Union as a "camp car outfit" to store equipment's and materiel's for Western Union repair crews. The cars were positioned along with a couple of old Pullman cars that served as crew quarters, at points along the right of way to do reconstruction repairs, as Western Union called it, of their telegraph lines.

One of the 20 cars noted to be in existence is under restoration at the Southeastern Railway Museum in Duluth, Georgia. The article on their page was dated 2018, I am sure it has been completed by this date, COVID or not.

Back to the model, the selling price in 1959, \$5.25! So, who says the price of model railroading has gotten out of hand? The average hourly wage in 1959 was \$1.00 an hour, weekly \$60.00, because most everyone worked eight to ten hours a day, six days a week!}



From the Elmer Seifts Archive of the Railroad Museum of Long Island

Another picture of the prototype taken 1946 in Glen Cove (Long Island), NY

{Editor's note: As you can see from this picture there are differences from Mike's car and this one. Understand there were 120 of these cars built to satisfy different purposes, so modifications do occur. This one has caboose style platform ends, end ladders, a truss rod frame, but similar with smokejacks and vents.



Ambroid Car, Ambroid Cement, must be an Ambroid 1 of 5000 Kit



Enroute to Somewhere in New Jersey.

Delivery of Subway Cars - Second Place Award

Since I had a rail-marine layout with the necessary tugboat and barge, along with a subway located in the Bronx, I decided to duplicate a picture in a book titled "NY Harbor Railroads Vol. 2". All I needed was a water base, I used a piece of plywood cut to size, painted with watercolors and sealed with Envirotex, a two-part epoxy. The car float and tugboat are Walthers kits and the cars are Walthers and MTH.



Mike's Photo Match duplicating a delivery of subway cars by car float.

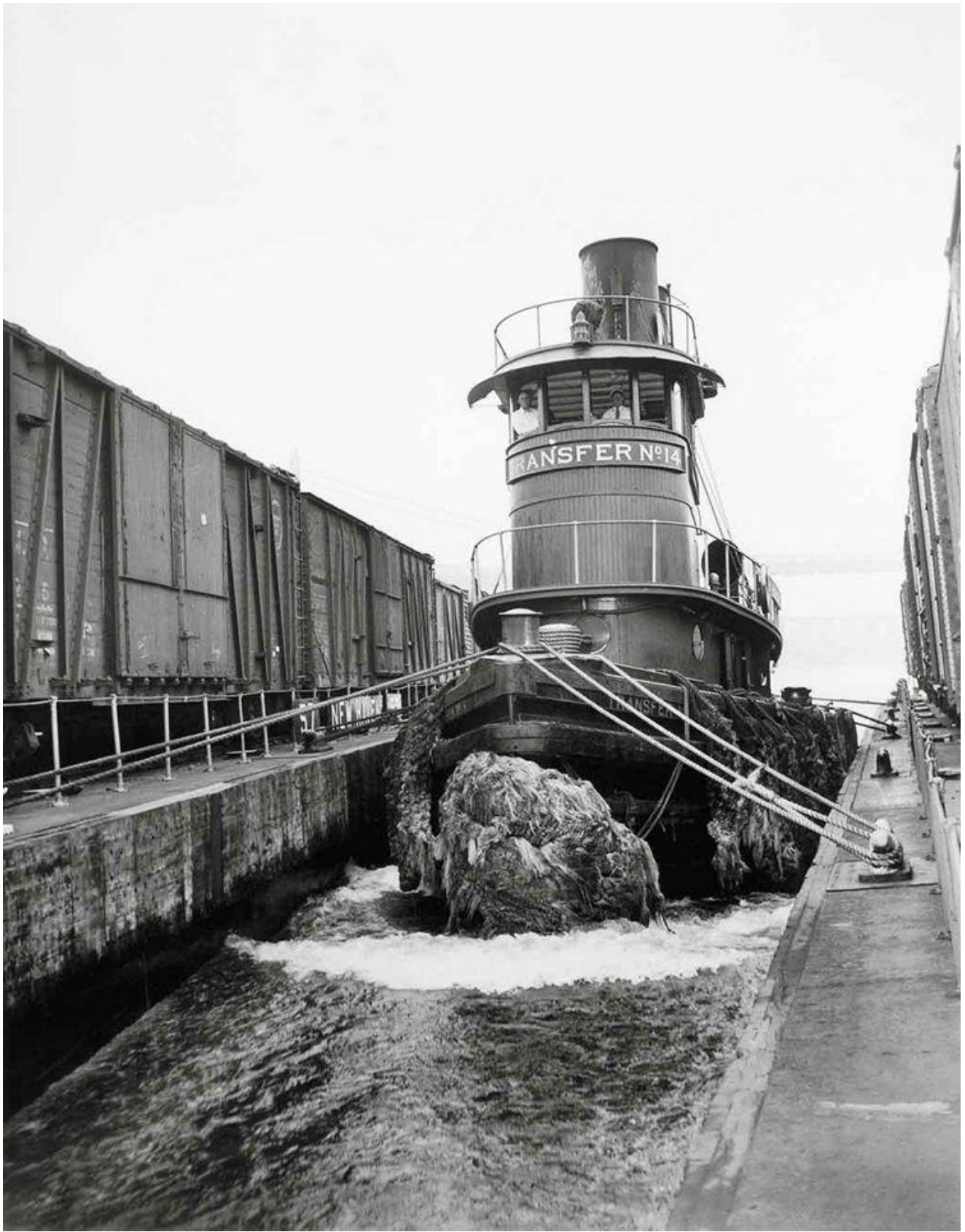


HO

Models and photo by
Michael Collins

514

Mike also entered this photo to Walthers for entry into their annual catalog.



Mike did a pretty good job capturing that look, didn't he.

To close out this edition, let' see if we get comments!



For you "Rivet Counters" the 1st and Only GG1, Pennsylvania Railroad Museum