Setting up operations

1. Watching your railroad come to life as it is operated by a few of your friends gives many of us great satisfaction. On this day Dr. Jim EuDaly (back), Dr. Lon EuDaly (side), Keith Robinson (on the phone to DS) and Ruth EuDaly (front) try to find out how three trains came to be in Walton all at the same time with only a short passing siding.

Model Railroad Hobbyist | September 2020

MARK JUETT DISCUSSES CONSIDERATIONS NEEDED TO GET REALISTIC OPERATING SESSIONS UNDERWAY ...

WHERE DO I BEGIN? WHAT DO I NEED TO CONSIDER? How do I build on what I have? Many have these frequently spoken or unspoken questions as they contemplate setting up and starting realistic operation on their railroad.

At the NMRA National Convention in Salt Lake City in 2019, Joe Fugate asked if I would write this article based on the clinic I gave there and the previous year at Kansas City. I am pleased to do so and honored to be asked.

GOAL 1: REALISTIC OPS

For me, the ultimate outcome in building a model railroad comes from it springing to life with a few of your friends in a realistic operating session [1].

I am thankful that Floyd Britton gave me the opportunity to learn about operations several years ago [2]. Several other owners have allowed me to operate on their railroads, and added to my experiences and enjoyment.

Hopefully you have designed your railroad in such a way that it works much like a full-size railroad. Modeling a specific prototype and reproducing towns or sections of the railroad on your layout takes you a long way towards realistic operation. Tony Koester coined the term Layout Design Elements (LDE) to describe this.

By observing and copying the prototype, we have a great start in building a model railroad that operates realistically and can be quite satisfying to operate.

GOAL 2: RELIABLE PERFORMANCE

Second, nothing goes further towards enhancing your operations enjoyment than highly reliable performance. Detailed scenes can be nice, along with highly detailed equipment and structures – but if you constantly are plagued with derailments, accidental uncoupling, and other problems, that will greatly diminish the quality of the run.

2. The late Floyd Britton gave me my first opportunity at operations, and I will be forever grateful.

Take your time and do a proper job in laying out and installing the track. Likewise, be sure that your rolling stock has properly fitted wheels and trucks, properly adjusted couplers, and weighted to at least the NMRA RP20.1 standard. Many have weighted their cars above this RP, myself included.

I admit that my railroad suffered reliability issues in the rush to be ready for the NMRA National Convention – and even with a host of volunteers helping me, some things were not as they should have been.

My crew and I have gone back to many of these areas and made corrections, improving the reliability over time. Joe Fugate's "Make It Run Like a Dream" series is a great place for you to start. It is filled with a wealth of information to help you attain reliable operation.

To quote my friend Joe Casper, "Build it and they will come; build it well and they will come back."

FIRST THINGS FIRST

Assuming that you have finalized the design and track plan, and you've built at least a portion of the railroad, let's get into a few things that can enhance your op sessions and increase your enjoyment.

First, your railroad does not need to be completely finished with detailed scenery to start operations. You can begin before you have weathered and ballasted the track. You can even start to hold op sessions before all track has been laid. Just a couple of towns can be enough to start.

A regular schedule for your sessions is helpful to keep you building progress moving in the right direction. It also goes a long way to help keep enthusiasm up. With a set date, your operators keep the date open.

"Build it and they will come; build it *well* and they will *come back.*"

3. Keeping a regular date for your operation will help in your progress on the railroad and operators will keep the dates open. However, a landslide of plaster rock work or Covid-19 can impact the schedule.

Choose a day and keep the schedule – first Saturday of the month; second Friday; whatever it is. Until the call for social distancing this year, we operated the second Friday of every month with few exceptions.

One time when casting rocks near tunnel #4, my track became blocked when some castings fell loose, and we could not operate [3]. Yes, there will be family events, travel, and even construction on the railroad that may impinge on the schedule – but try to keep the schedule.

With a schedule, you will push to get projects completed by the next op session. You will also work towards having the railroad ready, with the construction mess picked up and cleaned up, track cleaned, and every aspect ready to operate.

FINDING OPERATORS

Where will you find operators? If you are fortunate enough to live in an area where there are several operating model railroads you can draw from that group [4]. Perhaps there are people that are helping you construct your railroad.

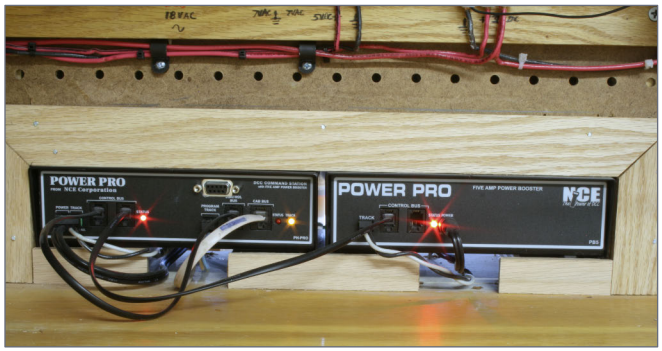
You may have to reach beyond the boundaries of your town, or you may have to generate the interest where none existed before. I am fortunate to have several operating railroads in my area, and several people helping me build.

I keep a seniority list on a spreadsheet. Those that are here more often and help build and operate gain a higher seniority on the crew list. Most hosts send out the crew call in a group email or group text. I use email.

CONTROLLING THE TRAINS

Digital Command Control (DCC) goes further towards enhancing realistic operations than almost anything. I have a

4. If you are fortunate enough to live in an area with several operating railroads, finding a place to operate or crews to operate your railroad can be relatively easy. If not, you may have to get creative to find crews. Here the late Wes Rupe, late Paul Evans, and Larry Diehl operate on Floyd Britton's Midland RR.



5. I designed L&N as a DCC railroad from the beginning. Also as part of the original design, I included Dr. Bruce Chubb's Computer Model Railroad Interface to control switches, yard ladders, signals, and a CTC machine (yet to be built) and more.

friend that has a DC railroad and holds op sessions, but it could be a lot better with DCC, in my opinion.

I designed my current railroad to use DCC from the very beginning [5]. DCC allows the crew to concentrate on running the engine and not flipping block toggle switches.

DCC loco lighting effects have become very realistic and enhance realism. Sound-equipped locos add even more to the enjoyment. Seeing trains meet with multiple lighting effects, dimming the headlights, and horn signals adds a great deal to the enjoyment and realism.

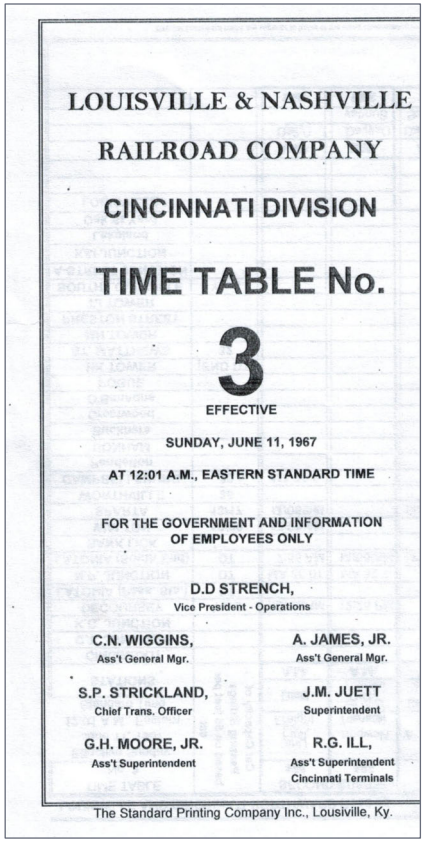
You do need to decide how you will control the traffic on the railroad. How will trains be dispatched? Installing a fully functional signaling system with a dispatcher's Centralized Traffic Control (CTC) board is not a trivial pursuit.

Full CTC control will take a lot of research, design, materials, and labor. Building a fully functional CTC signal system could take nearly as much time as building the rest of the railroad. However, some of us are dedicated to that idea.

In the interim one can implement any number of dispatching methods until a fully functional CTC system can be implemented. The most common options include: Timetable and Train Order (TT&TO), Track Warrant Control (TWC), and Direct Traffic Control (DTC).

Regardless of the method you select, you may find it useful to develop a timetable to schedule trains and manage the ebb and flow of traffic [7]. If more than one train will be on the line at any time, you should have a timetable.

If you model a specific prototype, you may be able to find a copy of a timetable for your railroad and modeled time period. Just look for it at a flea market, swap meet, railroad show, online (eBay), or through your railroad's historical society.



LOUISVILLE & NASHVILLE
RAILROAD COMPANY
CINCINNATI DIVISION

TIME TABLE No.
3

EFFECTIVE
SUNDAY, JUNE 11, 1967
AT 12:01 A.M., EASTERN STANDARD TIME

FOR THE GOVERNMENT AND INFORMATION OF EMPLOYEES ONLY

D.D STRENCH,
Vice President - Operations

C.N. WIGGINS, Ass't General Mgr.
A. JAMES, JR. Ass't General Mgr.
S.P. STRICKLAND, Chief Trans. Officer
J.M. JUETT Superintendent
G.H. MOORE, JR. Ass't Superintendent
R.G. ILL, Ass't Superintendent Cincinnati Terminals

The Standard Printing Company Inc., Lousiville, Ky.

6. A timetable may very well be the first paper form for your railroad. Most word processors have typefaces (fonts) that can closely replicate the original. You can also name yourself as Superintendent on the form!

An old timetable can be a useful historical document. It can include things like a record of how many were trains scheduled to run on any given day, the number of first class, second class, and third class trains, the types of trains, and a hint of traffic density. Of course, unscheduled extras would not be shown.

Because we do not have the same distance between stations as the prototype, reproducing the schedule exactly to match your prototype is not possible. You can make the schedule fit at some key location such as at a division point, and modify the arrival/departure times for the other stations. You will have to fiddle with it a bit.

A spreadsheet can be an excellent tool for this. Set up the rows and columns to develop the schedule, stations, mileage from the main terminal, length of passing sidings, and so on.

You can also easily modify the front and back outside pages of your timetable to match your favorite prototype. Most word

proessor programs have a variety of typefaces and font sizes that will closely match your prototype [6]. Some can even add a bit more by replacing the name of the Superintendent on the timetable with your own name.

Once you have a draft of the timetable, you can test it against how long it takes on the fast clock to run between stations. I suggest you time your first-class trains, making note of the departure time at all stations along the route.

From there you know the time it takes to travel from one station, make any required stops, and depart the next station. Now you can put the first-class trains on the schedule. Then repeat the exercise with second-class trains while padding the schedule a bit for meets with the first-class trains.

ND LOUISVILLE-SOUTHWARD Read down						LOUISVILLE AND CINCINNATI-NORTHWARD Read up										
SECOND CLASS			FIRST CLASS	Distance from Louisville	TIME TABLE No. 5	TIME TABLE No. 5	Car Capacity of Passing Sidings based on 40 feet per car	FIRST CLASS	SECOND CLASS			THIRD CLASS				
185	127		1					4	174	184	126	240	294	248		
DeC Transfer	T.O.T.E.		Local-Passenger		Effective Sunday, January 8, 1967 12:01 A.M., Eastern Standard Time	Effective Sunday, January 8, 1967 12:01 A.M., Eastern Standard Time		Local-Passenger	Fast Freight	DeC Transfer	T.O.T.E.	Newport Local	Unit Coal	Worthville Turn		
Daily	Daily		Daily		STATIONS	STATIONS		Daily	Daily	Daily	Daily	Daily ex. Sunday	Daily	Daily ex. Sunday		
A.M.	A.M.		A.M.					A.M.	A.M.	A.M.	P.M.	A.M.	A.M.	P.M.		
				113.20	CINCINNATI	CINCINNATI										
				112.45	C.T. JUNCTION	C.T. JUNCTION										
				110.21	K.C. JUNCTION	K.C. JUNCTION										
M	10:30 AM	10:05 AM		109.81	DECOURSEY	DECOURSEY	Yard		9:30 AM	12:25 PM	4:00 PM		11:25 AM			
			7:35 AM	108.57	LATONIA (Pass. Sta.)	LATONIA (Pass. Sta.)	DT	2:30 PM								
				108.11	N.P. JUNCTION	N.P. JUNCTION	DT					7:25 AM	10:35 AM			
M	11:15 AM	10:45 AM	8:25 AM	107.64	LATONIA (South End)	LATONIA (South End)	DT	1:50 PM	8:15 AM	11:55 AM	2:55 PM	7:05 AM		2:05 PM		
				95.62	BANK LICK	BANK LICK										
		11:10 AM	9:30 AM	91.26	WALTON	WALTON	10/20	1:15 PM	7:45 AM		2:25 PM		9:30 AM	1:35 PM		
M		11:30 AM	10:15 AM	67.26	SPARTA	SPARTA	13/17	12:45 PM	7:25 AM		2:05 PM		9:15 AM	1:05 PM		
				62.15	SANDERS	SANDERS										
M		11:55 AM	11:05 AM	58.67	WORTHVILLE	WORTHVILLE	13/32	11:55 AM	7:05 AM		1:25 PM		8:55 AM	12:30 PM		
				49.17	ENGLISH	ENGLISH										
				43.97	CAMPBELLSBURG	CAMPBELLSBURG	20									
				31.33	LaGRANGE	LaGRANGE										
				25.33	BUCKNERS	BUCKNERS										
				12.33	O'BANNONS	O'BANNONS										
				15.53	HK TOWER	HK TOWER	(END DT)									
				7.49	ST. MATTHEWS	ST. MATTHEWS	32									
				4.98	MN TOWER	MN TOWER										
				3.64	PRESTON STREET	PRESTON STREET										
				2.19	TJ TOWER	TJ TOWER										
				1.69	SOUTH LOUISVILLE	SOUTH LOUISVILLE	Yard									
				1.40	A-STREET JUNCTION	A-STREET JUNCTION										
				1.17	K&I JUNCTION	K&I JUNCTION										
				0.95	Lakeland	Lakeland										
				0.50	Oak St Yard	Oak St Yard										
				0	LOUISVILLE	LOUISVILLE										
	A.M.	A.M.	A.M.					A.M.	A.M.	A.M.	P.M.	A.M.	A.M.	P.M.		
	Daily	Daily	Daily					Daily	Daily	Daily	Daily	Daily ex. Sunday	Daily	Daily ex. Sunday		
	185	127	1					4	174	184	126	240	294	248		

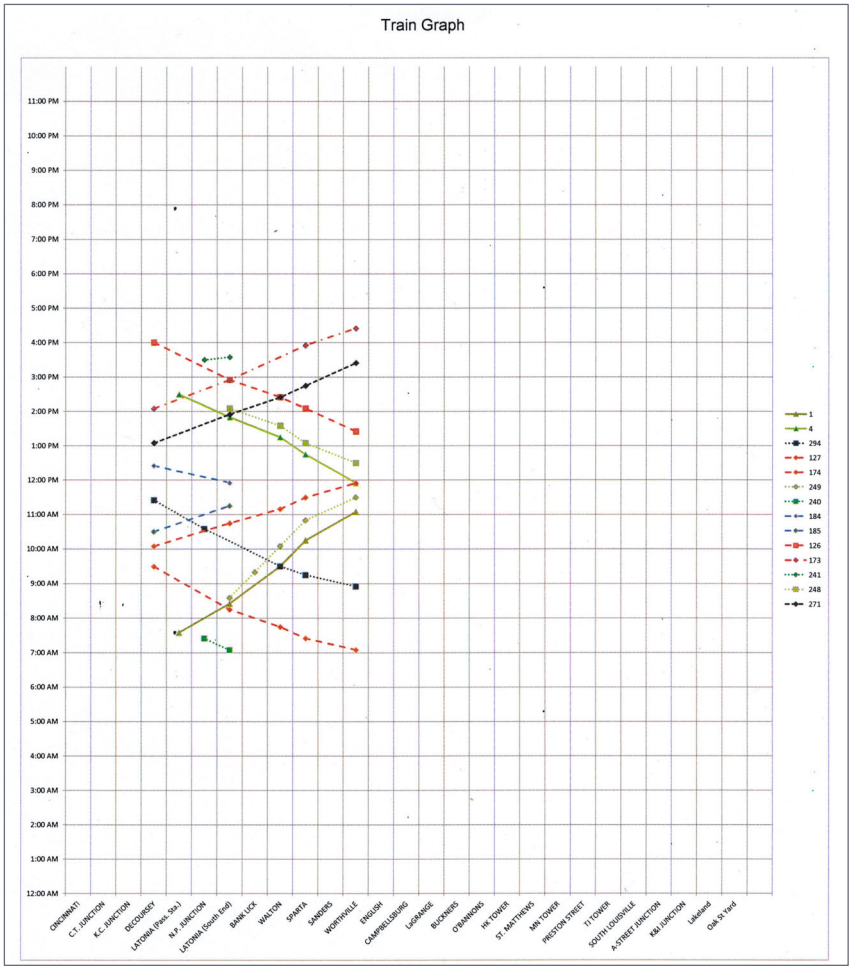
Regular southward trains are superior to trains of the same class moving in the opposite direction.

Regular southward trains are superior to trains of the same class moving in the opposite direction.

7. Setting up a timetable is easy to do on a spreadsheet, thanks to the built-in columns and rows.

Last, add in the third-class trains using the same method. After you have held a few op sessions, take a look at the dispatcher's train sheet and you will know what adjustments you need to make to the train times.

Do not overlook creating a train graph [8] from the schedule to verify that the meets will take place at the desired locations.



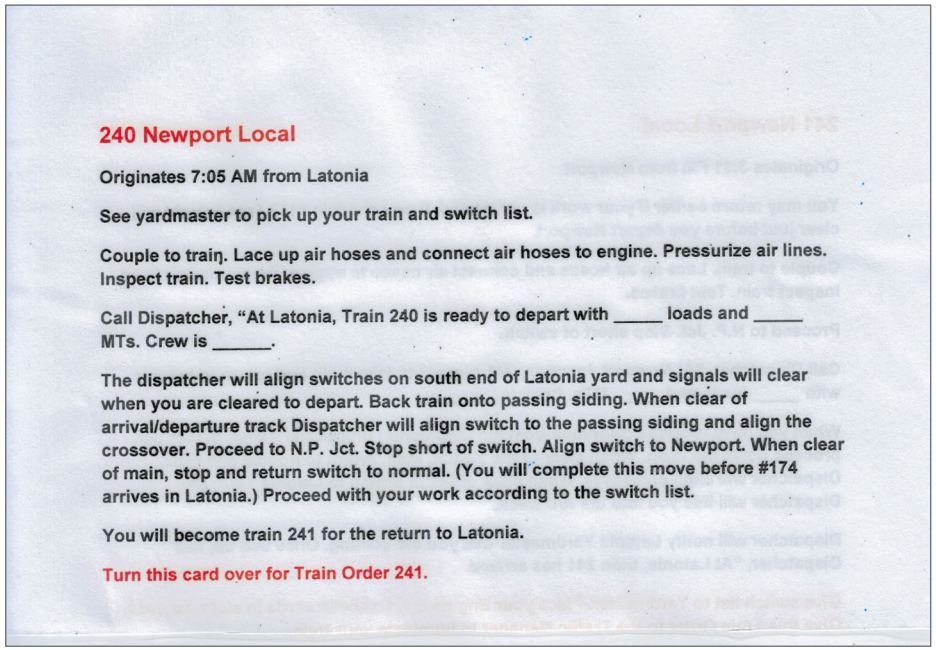
8. From the spreadsheet, you can easily make a train graph to see where meets take place and to identify congestion points.

You want to ensure that traffic does not become too congested in some locations.

MATERIALS FOR THE TRAIN CREW

Create a description of the work each train will perform for your train crews. Many owners refer to this description as a train order (not to be confused with a Form 19 or 31 train order, more about that later).

Typically, this description runs about half a page, and can be laminated to protect it. giving the train number, the name of the train, station where it originates / terminates, and a brief description of the work it performs. This document guides the crew as to the work they need to do [9].



240 Newport Local

Originates 7:05 AM from Latonia

See yardmaster to pick up your train and switch list.

Couple to train. Lace up air hoses and connect air hoses to engine. Pressurize air lines. Inspect train. Test brakes.

Call Dispatcher, "At Latonia, Train 240 is ready to depart with _____ loads and _____ MTs. Crew is _____.

The dispatcher will align switches on south end of Latonia yard and signals will clear when you are cleared to depart. Back train onto passing siding. When clear of arrival/departure track Dispatcher will align switch to the passing siding and align the crossover. Proceed to N.P. Jct. Stop short of switch. Align switch to Newport. When clear of main, stop and return switch to normal. (You will complete this move before #174 arrives in Latonia.) Proceed with your work according to the switch list.

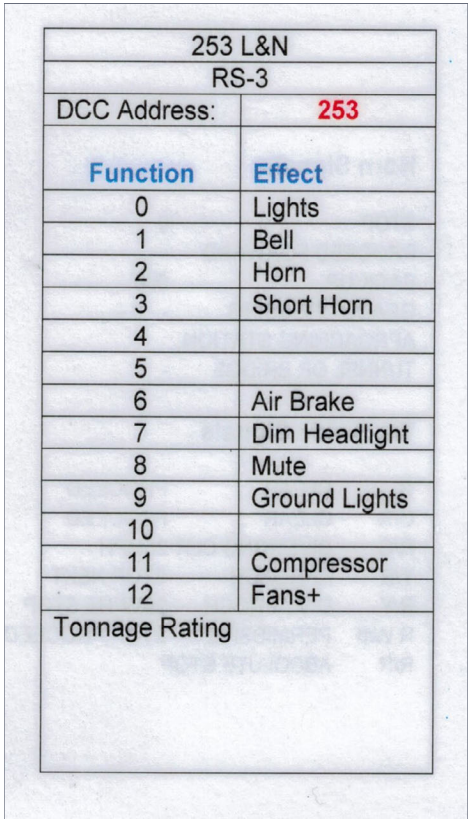
You will become train 241 for the return to Latonia.

Turn this card over for Train Order 241.

9. Laminated train orders give instruction to the crews about the work they will do and when and where they will starte.

Many of us have found it useful to create engine cards, also laminated to protect them. The card gives the unit number, reporting marks, model number, DCC address and a map of what function buttons control what functions [10].

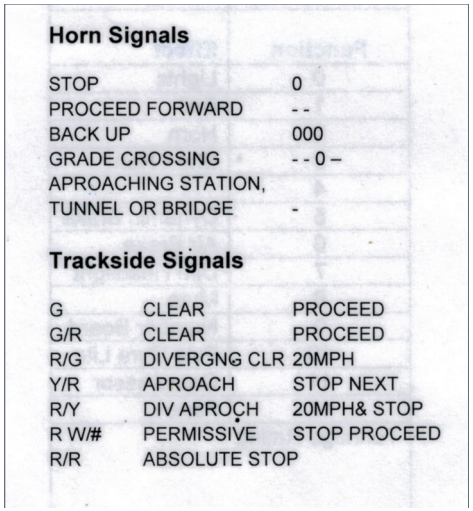
Try to maintain consistency. If F0 controls the headlight on one loco, it should be the same on all. Many people have remapped frequently used functions to lower buttons for easier access. Your functions might not be mapped the same as your friends, but you should be consistent within your fleet. Some of us have additional info on the back side for less-experienced operators, such as whistle signals and line side signals [11].



253 L&N	
RS-3	
DCC Address:	253
Function	Effect
0	Lights
1	Bell
2	Horn
3	Short Horn
4	
5	
6	Air Brake
7	Dim Headlight
8	Mute
9	Ground Lights
10	
11	Compressor
12	Fans+
Tonnage Rating	

I have sound car decoders in my cabooses. This adds a bit of animation, sound, and lighting effects. I have flashing end-of-train lighting on each end, plus interior lighting and stove , in addition to wheel and flange squeal. So the train crews need a bit of additional instruction to set up. For this, caboose cards fill the bill [12].

10. An engine card helps the crews know the DCC address of the loco if different than the unit number. It also tells them which function keys control which outputs (horn, bell, lights etc.)



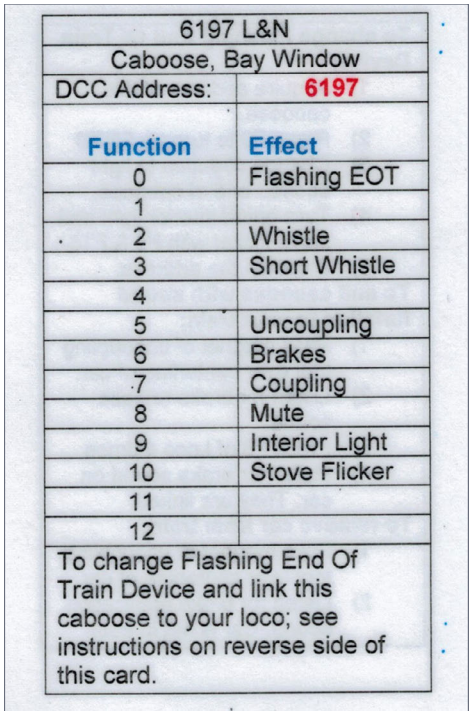
Horn Signals

STOP	0
PROCEED FORWARD	- -
BACK UP	000
GRADE CROSSING	- - 0 –
APROACHING STATION, TUNNEL OR BRIDGE	-

Trackside Signals

G	CLEAR	PROCEED
G/R	CLEAR	PROCEED
R/G	DIVERGNG CLR	20MPH
Y/R	APROACH	STOP NEXT
R/Y	DIV APROCH	20MPH& STOP
R W/#	PERMISSIVE	STOP PROCEED
R/R	ABSOLUTE STOP	

11. The back side of the engine card has a few whistle signals on it and lineside signal aspects.



6197 L&N	
Caboose, Bay Window	
DCC Address:	6197
Function	**Effect**
0	Flashing EOT
1	
2	Whistle
3	Short Whistle
4	
5	Uncoupling
6	Brakes
7	Coupling
8	Mute
9	Interior Light
10	Stove Flicker
11	
12	
To change Flashing End Of Train Device and link this caboose to your loco; see instructions on reverse side of this card.	

12. A caboose card performs a similar function to the engine card. All our cabooses have sound car decoders for end-of-train flashing lights, interior lights, brake sounds, and wheel noise from the caboose.

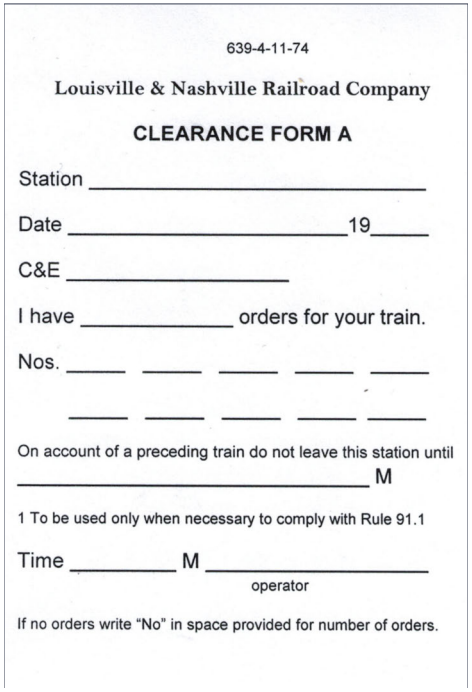
You can make a loco or caboose card easily using word processing or spreadsheet software.

MOVING A TRAIN

Before a train may depart, the crew needs a clearance form from the dispatcher [13]. You can often find one for your prototype with an online search – download it and format a version in a word processing program.

Usually you can fit four clearance cards to a page, then cut them apart.

Your dispatcher will need to complete the card before handing it to the train crew. The dispatcher needs to note if there have been any train orders written that affect this train.



639-4-11-74

Louisville & Nashville Railroad Company

CLEARANCE FORM A

Station _____

Date _____ 19____

C&E _____

I have _____ orders for your train.

Nos. ____ ____ ____ ____ ____

____ ____ ____ ____ ____

On account of a preceding train do not leave this station until _____ M

1 To be used only when necessary to comply with Rule 91.1

Time _____ M _____
operator

If no orders write "No" in space provided for number of orders.

13. A clearance form must be issued before the crew may move onto the road. An online search for your prototype and "clearance form" will likely turn up an original you can model.

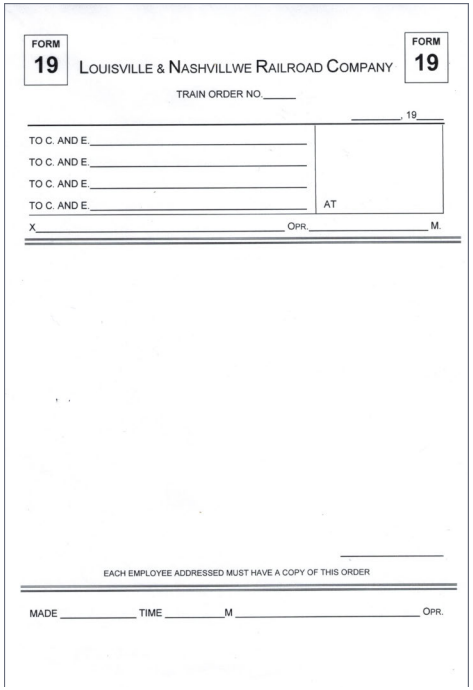
VIEW READER COMMENTS

The dispatcher can also note at what Station the crew should receive this clearance card, as well as the date and time the clearance becomes effective.

Once a train gets out on the railroad, it may be necessary to issue train orders to keep things moving, protecting extras, or giving rights to one train over another should the superior train become delayed for some reason.

Again, an online search for such a form for your prototype railroad will likely turn up an example. Then back to the word processor to create a Form 19 and Form 31.

These two forms look just alike except the 19 or 31 at the top [14]. The difference is a train crew must stop and sign for a Form 31, whereas a Form 19 may be passed up to the crew on an order hoop. Hooped-up, in other words.



FORM 19 LOUISVILLE & NASHVILLWE RAILROAD COMPANY FORM 19

TRAIN ORDER NO.____

_____, 19____

TO C. AND E._____

TO C. AND E._____

TO C. AND E._____

TO C. AND E._____ AT

X_____ OPR._____ M.

EACH EMPLOYEE ADDRESSED MUST HAVE A COPY OF THIS ORDER

MADE _____ TIME _____M _____ OPR.

14. Form 19 (and 31 which looks identical except for the 31) will be needed if your dispatcher will issue train orders. Just lay out one in word-processing software based on your prototype's form.

L&N

Bad Order Form

Reporting Marks:_____

Number:_____

❒ Coupler ❒ Wheels

❒ Trucks ❒ Weight

❒ Broken or missing appliances

❒ Other describe

_____

_____

❒ A end ❒ B end

Forward to RIP track Latonia

Date:___/____/____ Initial____

15. Some bad order Forms for your crews may help them report problems so you can correct them later.

Some of us create bad order forms [15] to encourage our operating crews to help identify problems in rolling stock, locos, track, or anything else that diminishes the operating pleasure.

For my first attempt, I just did a quick creation on the computer with no research online for a prototype form. My NW car knocker friend Jerry has not criticized the appearance of the form, so it has never been researched and upgraded for more prototype accuracy.

If you have a dispatcher (DS), he or she will need an office [16]. Jim EuDaly has an addition to his 50x80-foot Butler building for a dispatcher's office. Some have put the DS office under the stairs, inside a helix, in a spare bedroom, or as I did, in a closet [17].

The dispatcher needs a flat work surface (a table) to write train orders, log trains on the train sheet, and to complete other forms. They will need a comfortable chair, good lighting,and a

stack of forms, plus a writing instrument and some system to keep the blank forms organized [18]. A file folder organizer or a custom-built cabinet to hold the forms, take your pick.

The DS also needs a means to communicate with the train crews and yard crews. Many have installed a party line phone system [19]. Some have gone authentic with a telegraph, but most of us have forgotten Morse code or never knew it.

Those modeling modern periods use short-distance two-way radios. Several companies sell two-way radios. Model Railroad Control Systems sells components for a complete phone system. They also sell telegraph keys and sounders. You just need to choose between being accurate for the period versus the difficulty of installation and use.

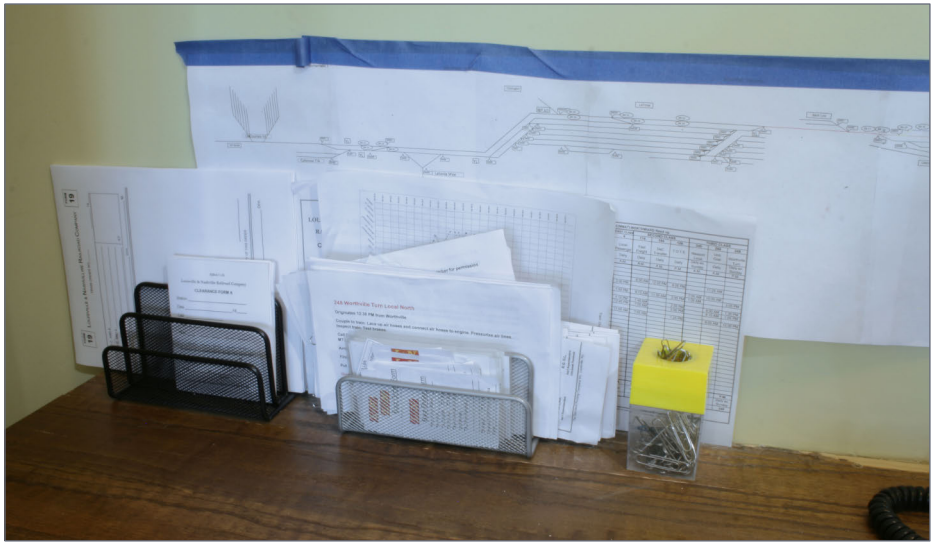
16. A place away from the railroad for a dispatcher's office adds to the realism.

Keeping time with accurate clocks is important to railroad operations, particularly with timetable operations. You can find a number of options on the market for clocks: I use Logic Rail repeater clocks on the throttle bus [20].

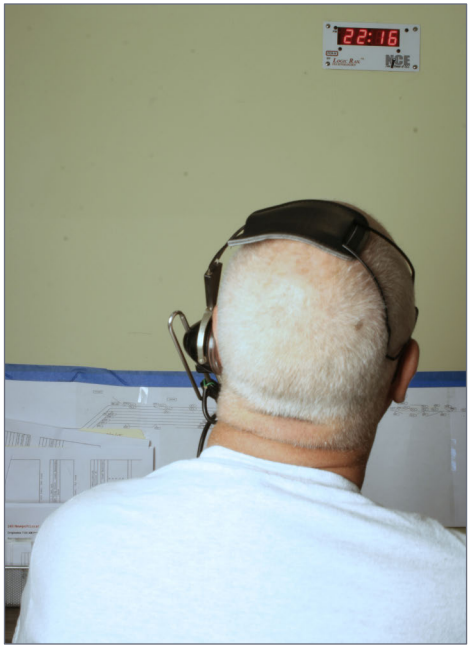
Logic Rail makes models that work on NCE or Digitrax. I have one over the Dispatcher desk and another in the crew lounge. My crews use the clocks on the NCE Pro Cab throttles to watch the time.

17. I placed our dispatcher's office in a closet along one wall of my basement office.

VIEW READER COMMENTS



18. A desk for writing, good lighting and the needed forms properly stored and organized increases the enjoyment.



19. A means to communicate between the dispatcher and operators or train crews will be needed. This vintage Western Electric 58 headset remains as uncomfortable as it was originally in 1967.

20. Clocks that keep time together will be needed for most operations (especially timetable operations). Several throttles have displays with fast clocks. I mounted this repeater clock in the DS office, with a larger clock in the crew lounge.

THE DISPATCHER

The dispatcher keeps track of the trains on the train sheet, protects extras, and issues orders as needed to keep things moving should a superior train be delayed significantly.

If you have CTC instead of train orders, the DS controls signals to get trains over the road.

The dispatcher can also hand out train packets, file returned paperwork, and/or generate a switch list for new trains. It depends on the density of traffic and how involved the operation gets. In short the DS controls the railroad.

OPERATIONAL AIDS

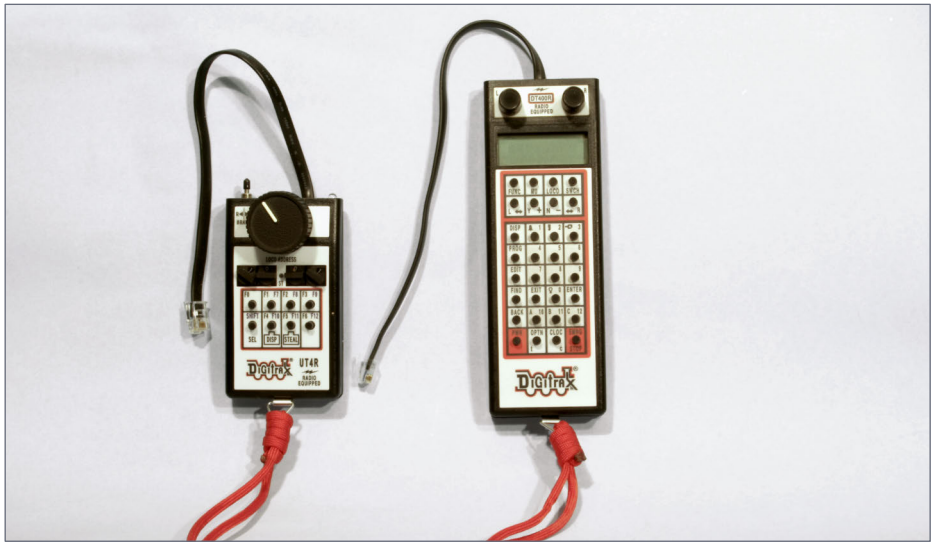
You might want to consider some additional operational aids. Many of us have found a lanyard attached to our throttles helps

safeguard against damage by being dropped to a concrete floor. The lanyard can really help when the operator tries to handle paperwork, uncoupling tools, and a throttle all at once [21].

Several of us have attached large paperclips to the back of the throttle [22] to hold loco cards, train orders, etc.

An idea that I picked up from Bill Scheerer is to hand everyone a nail apron [23] to store paperwork, uncoupling picks etc. They are available from home-improvement stores for under $1. At the end of the session you can find lost forms and uncoupling tools there. The incidences of operators taking paperwork and uncoupling picks home is reduced.

Even with aprons, it can also help to have large spring clips attached to the fascia [24]. The crew can put the switch list there for easy referral without digging it out of the apron or a pocket.



21. Attaching a lanyard to your throttles prevents damage from drops to the concrete floor.

22. Attaching a large paper clip to the throttle can help hold train orders and engine cards in plain view.

23. I got the idea of using nail aprons from a home-improvement store from my friend Bill Scheerer. The aprons holds the paperwork, uncoupling tools, and keeps them handy.

VIEW READER COMMENTS

When selecting throttles, maybe you can get by with tethered throttles and have operators plug in. You will need a lot of throttle panels, sometimes more than one at each location. When there are too many in one area, the cords can become a tangled mess.

I equipped my entire railroad with radio throttles. Yes, they cost more, but they allow operators to remain free to move where they need, and not become entangled. With radio, you don't need as many throttle panels or throttle pockets – just a radio antenna.

With Digitrax, the throttle panel also acts as the radio receiver/transmitter. The NCE system has a radio antenna that plugs into the throttle bus. I mounted my radio antenna on the ceiling above everyone for better coverage [25].

24. Large spring clips attached to the fascia provide a convenient place to hold the switch list, making it easy to see and read.

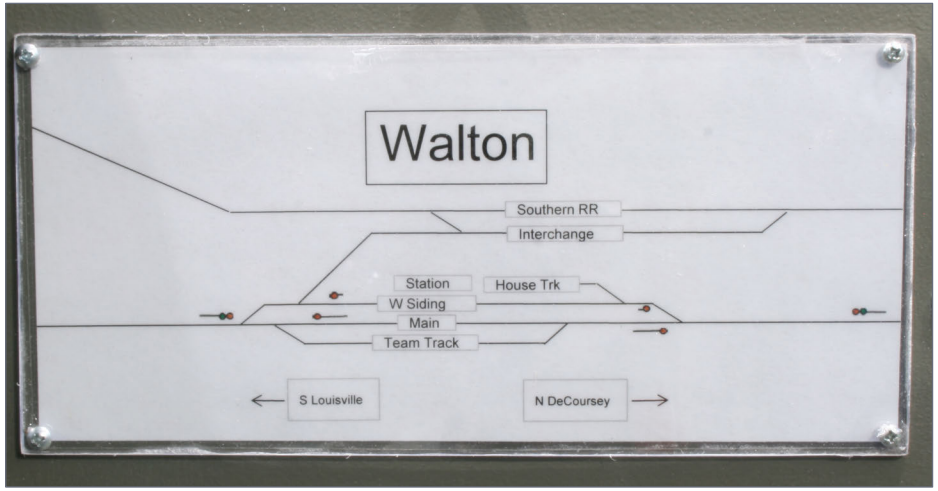
25. I mounted the NCE RB02 radio antenna on the ceiling for better coverage. I also installed a radio repeater to cover my zig-zag basement space.

LABEL EVERYTHING

Everything and every place on a railroad should have a name. It eliminates confusion when referring to a place, a track, an industry, etc. A small track diagram with the name of the location and labels for each track [26] make it much clearer where Newport Mills track #2 is. Cars have a better probability to be in the right place at the end of the session. Also, having the names of businesses displayed where they are easy to read is helpful, and putting signs directly on the building makes it clear [27].

However, this scrap yard needs no sign [28]. It is very clear that this siding serves the scrap yard. If you don't have structures

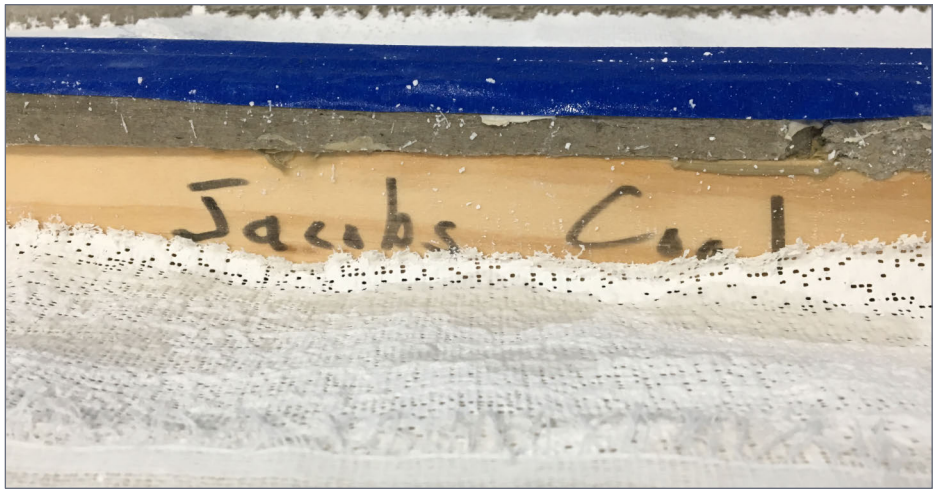
and scenery in place, simply writing the name of the business nearby works as a temporary solution [29].



26. Maps on the fascia with all tracks names and identified helps crews navigate and place the right car in the proper location.

27a, b. Having the name of the business on the building makes it easy for a new crew member to identify the rail-served customer.

28. Obviously, this is a scrap yard, even without signs.



29. If you have not built a structure yet, marking the location with a marker helps operators. *[Or just add a cardstock tent sign – ed.]*

TURNOUT CONTROL

Switch locks provide an additional opportunity to slow people and add operating interest. These were designed and fabricated from Lexan, and use decal paper printed backward on a laser printer [30].

A key switch and toggle switch are controlled by Computer/ Model Railroad Interface (C/MRI). Detection circuits determine if the switch interlock is clear and safe to operate the switch. The software also checks that blocks leading to the switch are clear, and if not, delay opening the switch, allowing enough time for an approaching train to get close enough to be seen by this crew. Once the CTC machine is built, the Dispatcher will have control over this, and allow the local crew to put the switch in Hand mode.

30. Switch locks and software timers can add realism and extend the duration of the run for crews.

31. Grinding down the end of an inexpensive small screwdriver to a point makes a handy uncoupling tool. I glued a small rare-earth magnet on the handle to activate a caboose sound car decoder for coupling/uncoupling.

UNCOUPLING CARS

As you plan your railroad, you might consider what method you will use to uncouple cars. Many prefer magnets on or under the track. Some object to the appearance of a magnet between the rails, and go for a magnet below the ties.

They will then install a painted post or paint a spot on the rails to help locate the magnet now invisible under the ballast. I have had some issues with unintended uncoupling with magnets beneath the rails. Usually it is related to the slope at the point creating slack which allows cars to uncouple.

Using an uncoupling pick reduces unintended uncouplings. It allows you to uncouple any place that you can reach. Extended reach is a good reason to use a magnet.

I ground-down the point on some screwdrivers to make uncoupling tools [31]. A magnet on the other end is handy to trigger the reed switch in the sound car decoders in cabooses and refrigerator cars.

Others have used commercial products, bamboo skewers, and any number of homemade tools. If you are holding night operating sessions, consider providing a small flashlight so crews can read car numbers. A clever idea I once saw was the flashlight and uncoupling tool taped together to make one tool.

YARDS AND INTERCHANGES

Every railroad (model or prototype) will likely have a major classification yard where trains are made up and broken down. Latonia Yard [32] serves that purpose on our version of the L&N.

From there trains go in three directions. They will need destinations beyond the visible portion of the railroad. Interchanges to other roads give us the opportunity to move

32. Latonia yard bustles with activity. Many trains originate or terminate here. Several trains drop or pick up cars, and a few trains just pass through.

33. Interchanges with other railroads give the cars a place to go beyond your visible railroad to the outside world.

34. The Pennsylvania interchange at Newport extends into my office on a drawer with six tracks. An interchange with the CNO&TP goes beneath a large hill.

cars off our railroad and receive cars from foreign roads. We don't get bored seeing the same cars at the same industries every session.

We have interchanges with the C&O, PRR and CNO&TP [33]. Two of these are in the Newport Covington area, and the third is at Walton. Two are interchanges where cars go away for three sessions before returning. The CNO&TP interchange at Walton is a three-track yard 42" long in a drawer. Cars are exchanged with each track in turn over the course of three sessions.

35. As Superintendent, you will decide if Rule G is enforced.

36. Regardless of the beverage, drink holders conveniently placed reduce the spills and add to the enjoyment.

37. You will decide what types of trains will run such as this Trailer On Train Express (TOTE), unit coal trains, auto carriers, auto parts, strings of refrigerator cars, manifest freight, and crack passenger trains.

OTHER CONSIDERATIONS

As the superintendent, you need to decide if you will enforce Rule G: no consumption of alcohol while operating. We model 1967 and we're pretty relaxed about having a beer or two during an Op Session or work session.

Regardless of your stance on Rule G [35], providing a nice crew lounge and places to hold beverages while operating will reduce spills and enhance the enjoyment [36].

As you decide on your operating plan, you will need to decide on the types of trains you are running, local switchers, out-and-back turns, unit coal trains, trailer-on-flat-car, manifest, mail trains, passenger trains etc.

Will you have a run-through by a foreign road with trackage rights or an emergency due to a track washout? As you design, you get to decide what to implement from the prototype and what adds interest [37].

CONCLUSION

This article covers my approach to realistic operation. There certainly can be more things to think about and other ways to do operation.

I hope this has given you useful things to consider when setting up operations on your model railroad. ☑

MARK JUETT

Mark has been involved in model railroading for over 50 years. Like most, it started with a train set at Christmas.

Much of the intrigue of model trains for Mark came from the mechanical and electrical/electronic control aspects. This interest in things mechanical and electronic led to an Associate Degree in Electronic Engineering Technology, and later a BS in Ag Engineering. Seven years after college he returned to school and obtained an MBA from Rockhurst College in 1987.

Mark converted to DCC early on and writes the monthly column "The Pulse of DCC" in the NMRA Magazine. In addition, he is the manager of the NMRA DCC Working Group. Mark also became an early adopter of Dr. Bruce Chubb's Computer/Model Railroad Interface.

Mark has shared his experience with others through clinics and presentations at NMRA Division, Regional, and National Conventions. He served as Clinic Chairman for the NMRA 2018 National Convention in Kansas City.

After years in the corporate world, Mark now builds and maintains custom model railroads (he took over Miles and Fran Hale's business), and does other custom model railroad work in addition.

Mark currently holds the following National Model Railroad Association Achievement Program certificates; Engineer Electrical, Engineer Civil, Model Railroad Author, Master Builder Scenery, Chief Dispatcher, Association Volunteer and Master Builder Structures. He is two scratchbuilt cars away from Master Builder Cars and Master Model Railroader. ■