The easiest solution is to use FRS or GMRS radios. Look at en.wikipedia.org/wiki/Family_Radio_Service. FRS radios don't require licenses. These are a low-power, short-range system, and a pair of radios is easy to find for less than $50.

Some operators don't like listening to the constant chatter on big layouts, and an alternative is to place the radios at stations and use them as if they were fixed-base telephones. Some layouts use multiple channels.

Two-way radios weren't in common railroad use before the 1970s-80s, so a real telephone system might be in order. Seth Neumann talks about setting up systems at sandcrr.com/telephones.htm, and Don Ball writes about party-line systems at sandcrr.com/telephones.htm. Phone systems require some parts-chasing and some technical skill to build. There is also information on phones at x2011west.org/handouts/Communications-for-Model-Railroads.pdf.

More advantages and pitfalls of communicating on model railroads are discussed at model-railroad-hobbyist.com/node/185, also model-railroad-hobbyist.com/node/3406.

Q. At my operating session last Saturday I introduced written track warrant control (TWC) forms. During the debriefing a question was raised: How does the dispatcher know if a train has to stop at a town to perform switching tasks?

A. The train crew should tell the dispatcher where it needs to go, to get the proper authorization to occupy those tracks. If the crew has to work a pickup and/or set-out using the main line, the conductor can leave the rear part of his train on the main, work the cars, and rebuild the train without needing a special order – assuming he or she has the authority to occupy the track. If the crew can clear the main line while doing all the shuffling around, no authority from the dispatcher is needed – they simply get off the main, clear up their warrant, do their work, and call the dispatcher for a fresh warrant when they are ready to occupy the main again.

A "proceed to" warrant requires the train will only move forward to its destination. But a forward move is regarded as one that does not cause the markers at the rear of the train – a caboose, red lamp, flag or FRED – to move backward.

Since the caboose sits on the main waiting to be rejoined to its train and is not moving backward, the engine can do the required moves without the train "backing up".

All of this assumes the dispatcher does not screw up and give authority on the track to someone else.

If there is extensive work at a particular location at some sessions but not at other sessions, the dispatcher will need to know when issuing the track warrant whether the train is passing straight through (Box 2 proceed from ___ to ___) or wants more room to work (Box 4 work between ___ and ___). A simple question is enough: "Do you have any work along the way?" The dispatcher's role is to keep the main line fluid, not to dictate minute work details.

In real life, the crew would know from its list of work to be done. In the model world, especially when using car cards and waybills, that's not always easy, but the crew can certainly check their paperwork for set-outs.

The issue is the same whether track authority is granted by warrants, timetable and train order, or Centralized Traffic Control. Train movement systems don't have anything to do with what work is done in each town.

One way to handle it would be to add a note to the crew's paperwork instructing them where they have work along the line for today's session.

When they call the dispatcher to get their track warrant, they will tell him, "Be advised, we have work at Surf today." The dispatcher can then give them the appropriate authority.

Many operating layouts include a "job description" card with the crew's orders that tells them what stations or spots they are expected to switch, such as "PM Tallman Local: Work Del Monte and Producers Packing spots in Tallman, set out loaded cars on LPG lead for pickup."

Some model layouts have the dispatcher also act as sort of a global freight agent. In that case, the dispatcher could add the information to the "Special Instructions" line on the track warrant when he issues it to the crew. But on a model railroad with more than three or four trains on the line at a time, that's asking a lot of the dispatcher.

The whole discussion is at model-railroad-hobbyist.com/node/731.

– Charlie Comstock, Byron Henderson

Q. What happens to telegraph pole wires when you get to a long tunnel, or a bridge over a deep gorge?

A. Pole lines typically follow the ground over the hill or down the gorge. In some cases they have to go underground, or perhaps in urban subways, in a conduit in the concrete or on the wall of the tunnel.

If the lines cross a river, they typically go across on the bridge somewhere, either in a conduit or on an arm with insulators attached to the bridge superstructure (figure 4 next page).

QUESTIONS AND ANSWERS

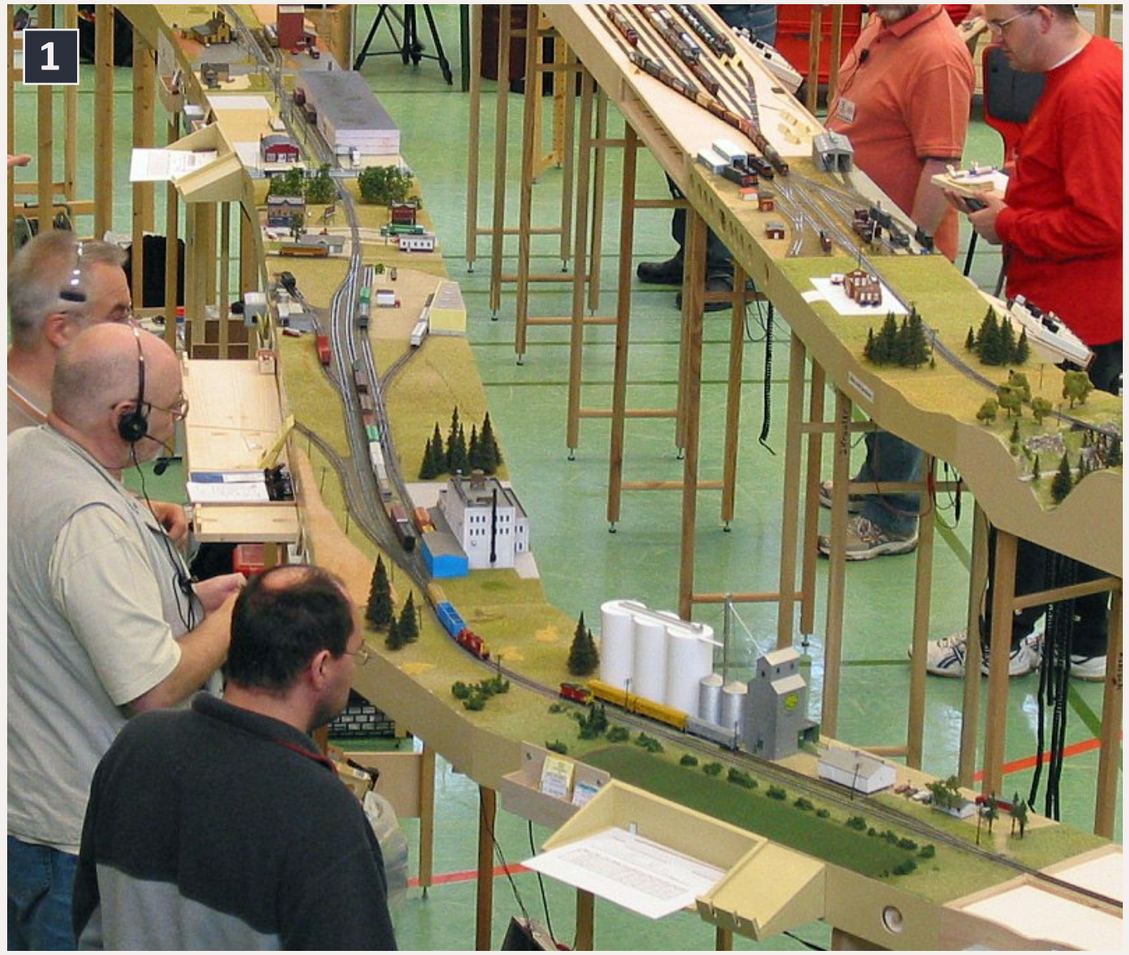
Dispatching a switch job

Q. At our last modular gathering, I gave a track warrant "Check box 2: Proceed from XY to Appaloosa Junction; Check box 10: Clear main track at last named point," to the crew of a local. Appaloosa Junction was under yard limits from a little bit farther right as the photo (1) shows, right down to the red elevator at the upper edge of the photo.

My question: Can the local begin with its switching job in the yard limits with this track warrant, or must the crew report the limits clear and begin the switching after getting a new track warrant with a "Work between ..."?

Or more general: Is the direction that is intended in a "Proceed from ___ to ___ " instruction also in effect in the yard limits?

– Bernd



1: The N scale modular railroaders of Appaloosa Junction face special dispatching challenges with a layout that can change from show to show.

A. The photo shows a single-track mainline without signals, and Bernd says they are operating under Track Warrant Control.

Dave Husman said: “Current UP practice is to give warrants only to the yard limit board, which simplifies things. So the warrant would read:

Check box 2: Proceed from XY to yard limit mp 37.5

or

Check box 2: Proceed from XY to east yard limit Appaloosa Junction

When the train fully enters the yard limits, the conductor reports it clear of the limits (of the warrant). There is no need to clear or hold the main track at the last named point, since the train is in yard limits. The train does not need the dispatcher's authority to occupy track within yard limits – just to get there. It can then work within the yard limits to do its switching with no other authority. When it is ready to leave, it asks for a warrant to "proceed from west yard limit Appaloosa Jct to AB."

“The real question is,” suggests Jurgen Kleylein, “should there be yard limits at Appaloosa Junction in the first place? Yard limits require all trains to operate on all tracks at restricted speed. Is there enough switching going on there to require yard limits? It might be better not to have yard limits and give the trains working there 'work between' instructions so that when there is no work taking place, mainline trains can run at track speed.”

Bernd answered, “The biggest problem with our modular layouts is the lack of 'track-only' modules so the distances between the yards are rather short. For this reason it´s not bad to slow the trains down with yard limits. On the other hand, it´s a welcome relief for the dispatcher, that he need not control the traffic in these yards.”

So this is a case of model railroad expediency setting up a different situation than most 1:1 railroaders would meet in their daily work. Bernd and his modular group could choose to post a 25 mph limit on their mainline to slow traffic.

Let's take a short peek at yard limits. Yard limits are for trains pretty much the same thing that school zones are for road traffic – anyone in there has to move with extra vigilance, and

2

SOUTHERN PACIFIC — Track Warrant

NO. _____ _____, 19 ____

To: _____ At: _____

1. ☐ Track Warrant NO. _____ is VOID.
2. ☐ Proceed from _____ to _____
3. ☐ Proceed from _____ to _____
4. ☐ Work between _____ and _____
5. ☐ Not in effect until after arrival of _____ at _____
6. ☐ This authority expires at _____
7. ☐ Hold main track at last named point.
8. ☐ Clear main track at last named point.
9. ☐ Between _____ and _____ make all movements at restricted speed. Limits occupied by train, engines, men, or machines.
10. ☐ Do not exceed ____ MPH between _____ and _____
11. ☐ Other specific instructions: _____

OK _____ M Dispatcher _____

Copied by _____

Reported clear at _____ M By _____

(Mark an 'X' in the box for each item instructed.)

2: This track warrant is simplified for model railroad use, and does not contain a line to authorize two trains to occupy the same track segment. But there are other, safe, ways for a dispatcher to do this when operating.

slowly enough to stop short of an accident. Trains have precedence over engines. So it's not quite the free-for-all some people suggest. Additional rules come into play with timetable and train order operation, signaled track or a full CTC installation.

Look at Rule 93 in most railroad rule books.

There are other ways to handle Bernd's situation.

Some track warrant forms include a line reading, "Joint with _____ between _____ and _____," which can be used to essentially grant two trains occupancy of the same track segment. Hey, they are warned, right? Joint occupancy requires good preparation or a crystal ball on the part of the dispatcher, who will need to know the direction and lead engine number of any trains that might come into conflict.

Take a look at the track warrant (2) used in operations on Joe Fugate's Siskiyou Lines. If the dispatcher has the Appaloosa local working between Albert and Pogo, he can give that train lines 4 and 9, letting it move back and forth between the two defined points. Subsequent trains will get line 9, warning them of obstructed track, and they could also get special instructions telling them that SP 4837 is on the Appaloosa local between Albert and Pogo.

An alternative is to dispatch the area using Direct Traffic Control. This requires a series of named blocks, defined by sign boards. Trains are granted occupancy of a specific block or blocks. A train running from Albert to Pogo to Churchy can be given all three blocks, handing blocks back to the dispatcher as the tail end of the train clears block limits. If two locals are working in the area, one can be given the Albert block and the other the Pogo block, so there is no question of conflict.

In practice, on a model railroad with the usual short distances and many through trains, it can result in a lot of talking, and requires attentive record keeping. But on a railroad that has a hub terminal with a lot of branches radiating out, it's a clean and simple way of keeping the crews safe.

– MRH