ScaleTrax **F.A.Q.** An interview with Rich Battista

In the following interview, Rich Battista, producer of the DVD The Black Diamond Railway, *answers frequently asked questions on ScaleTrax installation and operation. To see how Rich built and operates the layout that appears in this brochure, and learn more about his techniques for using ScaleTrax, check out the DVD at Rich's Web site,* ***www.toytrainsontracks.com****, or at your local M.T.H. dealer.*

Rich, what made you choose ScaleTrax for your layout?

I think it's the most realistic-looking three-rail track system. Granted, the tie spacing is a bit wide for a modern main line. But I don't think you notice it once the track is ballasted. The ScaleTrax running rails are lower, thinner, and closer to prototype cross-section than any of the other three-rail systems, and that makes a huge difference in appearance. Add to that a center rail that's very thin, and you have three-rail track that looks pretty close to the two-rail prototype. In fact, visitors to my layout who are not railroad hobbyists don't seem to notice the third rail.

In my experience, what happens with ScaleTrax is that the track becomes less prominent, making the locomotives and rolling stock appear more massive. Railroading is about huge machinery that makes the ground shake when it goes by, and the low profile of ScaleTrax helps me create that impression on my layout.

Will all 3-rail equipment run on ScaleTrax?

Yes. Although the running rails are low-profile, they're still tall enough that equipment with hi-rail and tinplate flanges runs very smoothly on ScaleTrax track and switches.

ScaleTrax doesn't use conventional rail joiners or pins. How are track sections mated together?

There is both a mechanical and an electrical connection. Each track section ends in a half tie that snaps into a mating half tie in the next section; this locks the sections together mechanically. Out of sight, underneath the mating ties are sprung copper connectors that press together when the ties are snapped together. I've found these electrical connections to be more secure and dependable than slide-on rail joiners — such that I only need to use feeder wires every 6' - 10' along the track.

That leads to the next question: how do you make electrical connections to ScaleTrax?

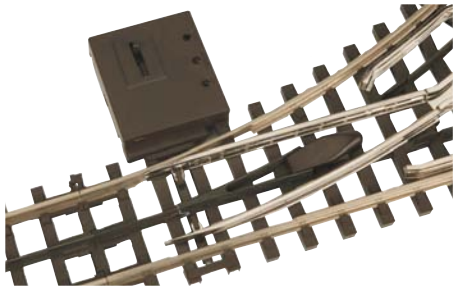
M.T.H. has a lockon for attaching feeder wires to ScaleTrax, but in my opinion nothing beats a soldered connection. I solder feeder wires to the track every 6' - 10' or so. When soldering to the blackened center rail, I remove the blackening first using an abrasive wheel in a Dremel rotary tool. [Editor's note: always wear eye protection when using a rotary tool.]

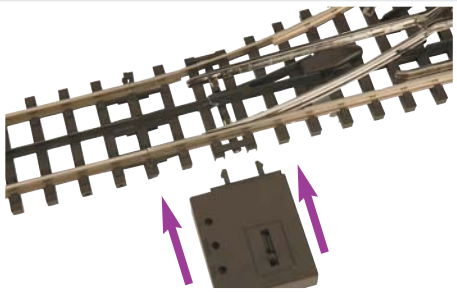
The smaller profile of ScaleTrax makes it easier to solder to, compared with thicker rail: less heat is needed, so you're less likely to melt the plastic ties while soldering a connection. In building my layout, I generally laid the track and then soldered to the side of the rail that's away from the viewer, so the connections were less apparent, and then routed the wire through the roadbed and the table to a connection. A more elegant but harder-to-build solution would be to solder wires to the underside of the rail before laying the track. Then you could drop the wires through holes in the roadbed and the wiring would be completely hidden.

Are there any particular advantages to ScaleTrax switches?

The biggest advantage is smoothness. Trains run through ScaleTrax switches more smoothly than any other track system I've used, and other ScaleTrax users on the O Gauge Railroading Forum (www.ogaugerr.com) have confirmed that observation. I think one reason for the smoothness is the design of the ScaleTrax frog. The frog is the one part of a switch where a train's wheels actually leave the rails for a short distance, so it's the toughest part of a switch for a wheel to negotiate. The ScaleTrax frog has built-in "ramps" to ease the wheel's transition in and out of the frog, and that really makes for smooth operation. In addition, the point of the frog is ramped and gently beveled, so a wheel won't "pick" the point and derail. I think the lower profile of the ScaleTrax rail also helps, because a wheel drops less when it moves off the rail and into the frog.

I've also found the switch machines to be very reliable, and I like how easy it is to install them on one side of the switch or the other: the machine snaps into the ties, and the switch throwbar connects to the machine with a magnet.





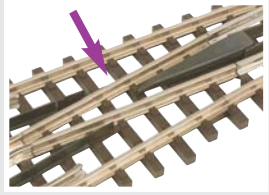
And for folks who like other switch machines, like the slow motion Tortoise, there are two notches on the underside of the throwbar where you can connect a different linkage.

Are Scaletrax switches non-derailing?

Yes, when used with the ScaleTrax switch machines. The switch machines are spring-loaded, so a train entering the switch from the "wrong" direction will simply push aside the spring-loaded rails and go through without derailing.

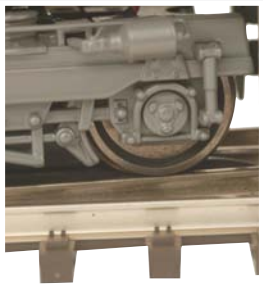
Have you had any problems with engines stalling on switches?

I do have a couple of engines that will stall on a particular size of switch at very slow speeds. On any three-rail switch, there's a short gap in each center rail where it crosses the running rails as the switch diverges. If that gap is long enough that both pickup rollers on an engine lose third-rail contact, and the engine doesn't have enough momentum to cross the gap, that engine will stall on that switch. If the engine is part of a lashup, it may hesitate a bit, but the other engines in the lashup will keep it moving.



Happily, most three-rail engines have their rollers spaced far enough apart that you won't have this problem. But sometimes you get the "perfect storm" — usually a small-wheelbase engine with closely spaced rollers and one of the wider-radius switches, like a #6, with a longer gap in the third rail. FYI, I've noticed that the newer M.T.H. diesels now have dual pickup rollers on each truck, which eliminates the stalling issue.

What about equipment with scale wheels, like scale-wheeled Proto-Scale 3-2™ engines — how do those engines and cars perform on ScaleTrax switches ?



Actually I've been switching to scale-wheeled diesels because I like the realism of smaller wheel flanges and fixed pilots rather than swinging pilots. Those engines look particularly nice on the lower profile of ScaleTrax.

In my experience, engines and cars with scale six-wheel trucks run very smoothly through ScaleTrax switches. Equipment with scale-wheeled four-wheel trucks tends to bounce a bit going over the switch frog but doesn't derail. I believe the reason is that frogs on most brands of three-rail switches are engineered so that hi-rail wheels will ride on their flanges when going through the frog. Thus, scale wheels with smaller flanges, particularly on shorter four-wheel trucks, drop into the frog just a bit when going through it. However, the drop is less pronounced with ScaleTrax than it is with other brands of switches with taller rail.

The center rail on ScaleTrax is so thin. Doesn't it put grooves in third-rail pickup rollers?

Not in my experience. I haven't found the ScaleTrax center rail to be any harder on pick-up rollers than other brands of track. I think this fear comes from some folks' experience with postwar equipment, which often shows up with grooved center rollers after hard use. But today's center rollers, while not immune to wear, are made of harder material.

Does the blackening on the top of the center rail need to be removed for DCS™ operation?

Yes, I've found that if you don't remove the blackening on the very top of the rail, you tend to get sparking from pickup rollers in conventional or DCS operation. I use a mildly abrasive cloth to remove the blackening before laying track, so anything that comes off the rail or the cloth doesn't wind up on the layout. Any of the abrasive track cleaners available at hobby shops, such as a Bright Boy, or a mildly abrasive non-metallic kitchen scrubbing pad would do the job.

How do you create insulated track sections — to divide the layout into blocks or operate accessories, for instance?

While DCS operation doesn't require track blocks, it's a good idea to divide a layout into separate electrical blocks so you can isolate sections for troubleshooting. On my layout, I also isolated blocks for "parking" engines and trains on unpowered track sections when operating in conventional (non-DCS) mode. And some folks may want to isolate sections of an outer rail to operate signals or accessories.

I created electrical blocks by simply cutting small gaps in the center rail, using a fiberglass-reinforced cutoff wheel in a Dremel rotary tool. Then I put hot glue in the gaps to make sure the rails wouldn't accidentally touch. Although I didn't do this, if your layout is subject to large temperature changes, it might be a good idea to put a small piece of plastic or other insulator in the gap, followed by the hot glue, so the rails can't move back into contact if they expand in hot weather.

What kind of roadbed did you use, and is there a recommended way to fasten ScaleTrax to the roadbed?

I used cork roadbed on my layout, but any type of roadbed would be fine. An additional benefit I discovered is that the smaller cross section of ScaleTrax seems to make it run quieter. I think the more-flexible plastic ties and foundation absorb some of the vibrations from rolling trains.

As for fastening down the track, there are nailing spots every four ties or so. You can't see them from the top, but they're visible on the underside and you can open up the ones you want to use before laying the track. Personally, however, I found I could nail into any tie. I used #18 x ¾" wire brads to fasten down my track.

For ballast I used Woodland Scenics coarse ballast on my foreground track, fastened down with Woodland Scenics' Scenic Cement. Before applying the ballast, I lightly sprayed it with black paint to darken it a bit and give it more variation in color, making it look more like prototype ballast. [Editor's note: Rich's video shows more details on how he laid track and ballasted it for realism.]

What materials is ScaleTrax made of?

The rail is nickel silver, which doesn't rust, and the ties are ABS plastic.

How do you work with ScaleTrax flex track, in terms of bending it, wiring it, and joining it to other track sections?

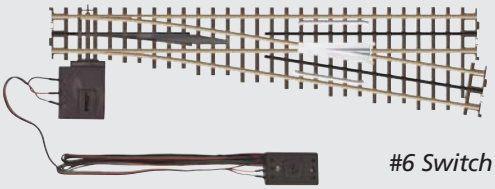
The nice thing about ScaleTrax flex is that the thinner cross-section of both the rails and ties makes it much easier to bend than some other types of three-rail flex — and the solid rail doesn't kink like hollow rail sometimes does.

When I transition from sectional track to an area of the layout that requires flex track, my technique is to fasten the first piece of flex to the last piece of sectional in the normal way, by snapping the ties together. Then I nail down the beginning of the flex and work it around the curve, nailing it in place as I go. Because you're curving the track, of course the ends will not come out even and the ties probably won't end at the same place as the rails. I carefully remove the last few ties, with the mating snap-on end, trim the rail ends and remaining ties, and then slide the end tie section back on the rails. This gives me a connector to the next section of flex or a piece of sectional track.

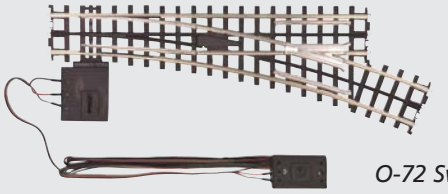
Unlike sectional ScaleTrax, the flex does not have built-in electrical connections to the next section of track. On my layout, I soldered the rail ends together after the flex was laid, to bring power from one section of flex to the next. When I first did this, I had some problems with the solder joints breaking as the rail expanded and contracted, and the solution turned out to be simply to use more solder. As mentioned earlier, the thinner cross section of ScaleTrax makes it relatively easy to solder to. As an alternative, you could just solder a power feed to each piece of flex track. [Editor's note: While the flex track discussion here is limited due to space considerations, Rich's video has the best demonstration we're seen yet on techniques for working with ScaleTrax flex.]

Rich, do you have any other tips or techniques for working with ScaleTrax?

I've found that putting two #6 switches back-to-back makes a great high-speed mainline crossover, and spaces two mainline tracks a perfect distance apart —at least for the equipment I run.



#6 Switch



O-72 Switch

For those who are used to traditional three-rail switches, which have a diverging leg of a specific curve radius, numbered switches (#4 and #6 in the ScaleTrax line) are a bit different (and more prototypical) in that their diverging legs are straight track, and the number designation refers to the angle of their frog. No. 4 and No. 6 switches are designed to pair with flex track to give you ultra wide radius curves. No. 4 switches can you give you O-80 or O-96 curves. No. 6 switches can you give you enormous , sweeping O-120 curves. Any locomotive currently produced by M.T.H. can negotiate these switches.