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INTRODUCTION

The elegance of the prairies

I usually don't write how-to books. My goal is to share with you the more interesting aspects of a given topic and thus inspire you to investigate whatever it is that motivated me to write about it. Note that I did not say that my goal was to entice you to follow my example. If you bring an open mind to our conversation, that may indeed be the result, but my hope is that you will find my books are by themselves sufficiently entertaining and enlightening to justify your time and attention. With those cards on the table, let's take a look at modeling flatlands railroading, which I have been doing since the turn of the century in

HO scale. It offers unique opportunities in every aspect of scale model railroading. The prairie states have an elegance and appeal that have been overlooked for far too long. Let's take a closer look.

Narrowing down the focus

In this book, my focus is on mainline railroading, not on branch or short lines, both of which deserve separate books. Geographically, I'll somewhat arbitrarily define the flatlands or prairies as covering the 12 states usually listed as Midwestern: Illinois, Indiana, Iowa, Kansas, Michigan,

In the post-war 1940s, rural communities still largely relied on railroads for connections to the rest of the country. Trains with churning rods, chuffing exhausts, billowing smoke, hissing steam, and soulful whistles fascinated both young and old. Children and adults alike visited train depots as a diversion. On this early fall day in Kensal, N.D., six young visitors and a canine friend find plenty of action at the Soo Line depot: a way freight being switched, a westbound passenger train arriving, and a momentary conflict between an iron horse and a local horse over whistle noise. The kids and dog have the best seats in the house. More of David Oram's artwork can viewed at www.davidaoram.com.

David Oram

Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. Much of the South is flat, for example, but the “Y’all Railroads,” as my friend Tom Holley likes to call them, have an entirely different flavor from their northerly cousins.

I model a portion of the New York, Chicago & St. Louis Railroad — better known as the Nickel Plate Road — and that’s the type of mid-size flatlands railroad this book will focus on. I prefer to write extensively about those railroads I know quite a bit about, or know someone who does, rather than in dribs and drabs about railroads I know only anecdotally. I couldn’t cover everything of interest — Lake

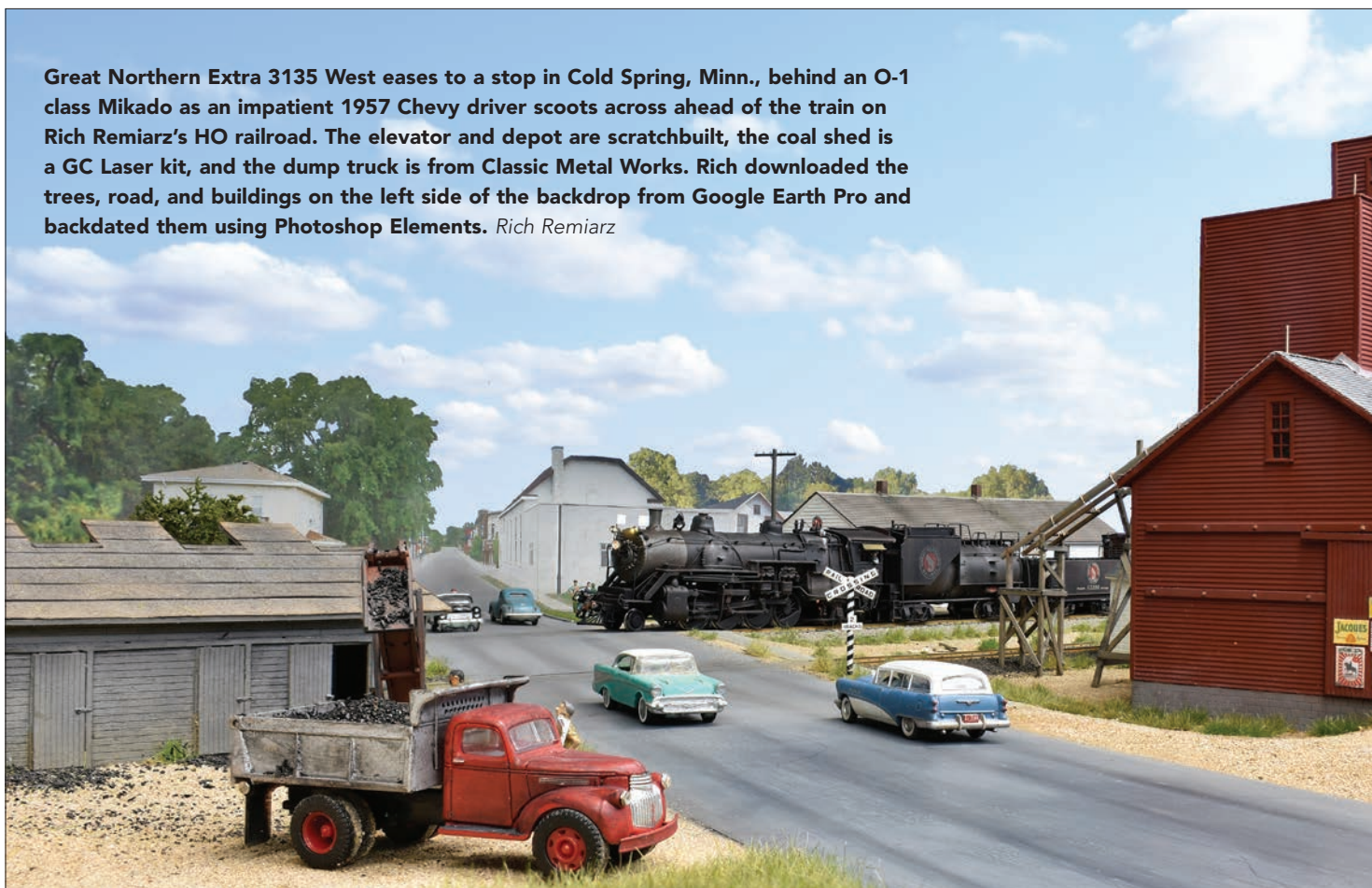
Michigan and Mississippi River car ferries, for example.

I will also tend to focus primarily, but not exclusively, on the eras prior to the 1970s, simply because it’s much easier for you to obtain information on modern railroads than it is on older ones. I recognize the popularity of today’s railroading, as witnessed by ads selling the latest offerings of diesel locomotives and rolling stock and modern structures to line the rights-of-way. But the steam-to-diesel transition and early second-generation diesel eras remain very popular, and that’s where we’ll spend most of our time.

Spoiler alert

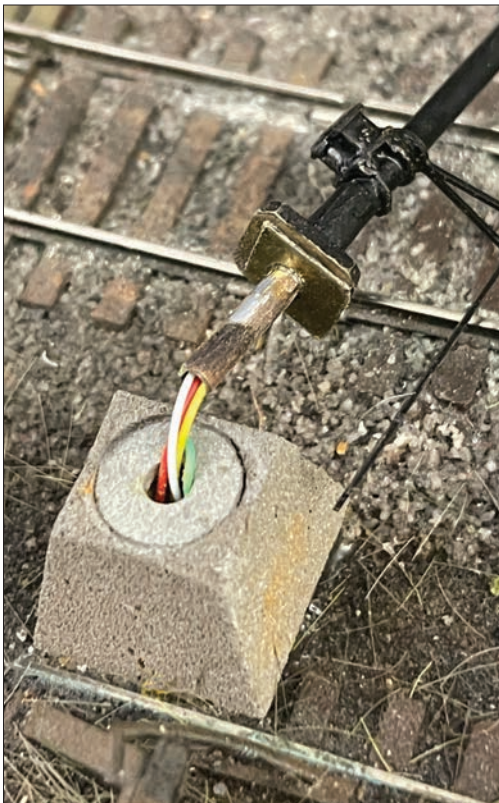
If you’re wondering how what you’re going to read about in the next 100-odd pages might affect you if you become motivated to try your hand at building a flatlands model railroad, jump ahead to Chapter 9 to see three excellent examples of flatlands model railroads, ranging from one that fits comfortably in a spare bedroom to one that doesn’t crowd a medium-size basement, and finally one that left just enough room for the washer and drier. One size does indeed not fit all, but there is a flatlands railroad perfectly suited for every area, ambition, and budget.

Great Northern Extra 3135 West eases to a stop in Cold Spring, Minn., behind an O-1 class Mikado as an impatient 1957 Chevy driver scoots across ahead of the train on Rich Remiarz’s HO railroad. The elevator and depot are scratchbuilt, the coal shed is a GC Laser kit, and the dump truck is from Classic Metal Works. Rich downloaded the trees, road, and buildings on the left side of the backdrop from Google Earth Pro and backdated them using Photoshop Elements. *Rich Remiarz*





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Ted Pamperin uses Balsa-Foam as the base for his signals and recesses super magnets in them to attract thin sheet-metal plates attached to the base of each signal. This allows easy removal of the signal for maintenance and provides some "give" in case the signal is bumped. On his Oregon Rail Supply cantilever signal bridges, the bases are integral to the signal and therefore have much larger areas for metal plates. He therefore used a steel rectangle on both sides of the wires. Ted Pamperin

compromises and with many options with regard to how you model it, Iowa Scaled Engineering's versatile Interlocking in a Box (IIAB) kit and digital fast-clock, **12, 13**, will do almost everything you need to:

- Model a crossing of two railroads with both routes fully functional;
- Model a crossing of two railroads with one route truncated (dummy) but with the schedule of trains on that route fed to the operating route's home signals;
- Play a third-party recording of a train passing over the truncated "dummy" foreign-road route at the scheduled times; and
- Operate an associated Automated Interchange (see Chapter 3) timed to deliver cars when a foreign-road freight is due.

You are limited in track arrangements to the east/west and north/south configurations shown in the manual and in the number of aspects you can display. Distant signals are not actuated. And, as with any new system, there is a learning curve.

But with capability comes complexity. First, timing everything is critical, so you'll need to buy ISE's digital fast clock. But you can use it to run fast clocks throughout your railroad room at whatever ratio you choose as well as more IIABs.

Second, you need to detect trains entering interlocking limits. Rather than using sensors that detect power flowing to the rails, thus requiring resistors mounted to the axles of a large portion of my sizable car fleet, I opted to use seven of Iowa Scaled Engineering's infrared sensors, three to the west of the Peoria & Eastern diamond at Veedersburg, Ind., one in the diamond, and three to the east.

I had used these sensors for ISE's Automated Interchanges at Linden and Metcalf and was pleased with their performance, and if a shorter train caused a misleading NKP home signal indication now and then, no real harm done, as the P&E main line is only 16" long, backdrop to fascia, thus severely restricting through traffic. And we can add more sensors if experience suggests they're needed.



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Three of Tony's four staging yards are evident in this photo. The 12-track Sandusky and five-track Toledo Division staging yards are on the lower deck at right with access from both sides, and the 12-track Fourth Sub of the St. Louis Division staging is on the top deck in the background. The run between them is about 8 scale miles. Road crews do not operate trains in or out of staging; they start and end their runs in the Frankfort and Charleston engine terminals.

simple yellow and green distant signals did not become popular until the mid to late 1970s when the railroads "went cheap" on everything.

Signal tips

The tiny wires that run from the signals to the electronics or switches that control them are delicate and prone to breaking, especially at the point where long leads are soldered on. An occasional light bulb or even LED failure is almost guaranteed. And signals get bumped. So having a means to remove a signal from its base or cushion a blow to the mast is a very good idea.

Ted Pamperin uses super magnets shaped like small washers to fit into

a base made of Balsa-Foam that he bought through Dick Blick. He cut it into cubes and shaped them with a belt sander. He salvaged a piece of sheet steel from a tin can lid, drilled some mast-diameter holes, and trimmed it into mast-base-size pieces that he slid over the wire leads and super-glued in place. Ted then slid the wires and signal tube through this small opening in the super magnet (I stack two of them in my bases) and through the subroadbed, 19. Dave Olesen prefers to glue the steel to the bottom of the base (two rectangles, no hole drilling) and inset a larger-diameter washer magnet into the subroadbed, as it's then much easier to insert all those wires, 20.

If you are soldering lead extensions

to the short LED leads prior to installation, use silver-bearing solder. If they break, you may be able to resolder the broken lead extension(s) below the roadbed, or you may have to pull out the signal and start all over again. Been there, done that. Repeatedly.

For lead extensions, see whether a phone company crew will give you a scrap six-foot or so length of cable with a zillion color-coded wires. Their tiny diameter and many colors are ideal for signal work. Failing that, salvage the wires from an Ethernet cable.

Moving individual cars

How freight cars are moved over the railroad is part of traffic control, but I already discussed this at length in

Chapter 7 of my Kalmbach book, *Realistic Model Railroad Operation, Second Edition*.

By way of an update, the more realistic waybills discussed there have worked out very well, and the old four-cycle waybills with car cards are being phased out on my railroad as rapidly as possible.

Classification and staging yards

Passive staging and active fiddle yards probably deserve a book of their own, but I'll touch on a few considerations here. Every foreign-road car or locomotive that appears on your railroad had to come from somewhere else, and "Else" is a hidden or visible staging track or yard or a hidden fiddle yard where trains are rebuilt in real time. It's what Allen McClelland called "Beyond the Basement." This is not unique to flatlands railroads, of course, but it's critical to the realistic operation of them. Unless they function flawlessly, what happens on the rest of the railroad will quickly bog down.

Based on my quarter-century of experience with the Allegheny Midland and advice from Bill Darnaby, I decided that I did not want road crews to be involved with staging, so they operate trains only between the two division-point terminals. I have four stub-ended staging yards, one for each of the three unmodeled divisions radiating out of Frankfort, Ind., and one for the continuation of the St. Louis Division out of Charleston, Ill., southwest to St. Louis, **21**. Staging runs are handled by separate crews; see "Yard assignments" at right.

As a complement to visible classification yards, these staging yards allow the railroad to do just what Allen McClelland advised: operate trains that appear to originate or terminate beyond the confines of my basement.

Yard assignments

Bill Jambor, top left, handles three of the four staging yards, thus acting as both road crews and dispatcher for the Toledo, Sandusky, and Peoria divisions. He coordinates movements with Frankfort General Yardmaster Phil Monat, top right (in baseball cap; Doug Watts in the foreground is running the Frankfort Commercial Engine), or Jim Dalberg and Roundhouse Foreman Rich Taylor, center left. Charleston, Ill., Yardmaster David Ramos, center right, or Roundhouse Foreman Ralph Heiss, bottom, usually handles the Fourth Sub staging west of their yard. All cabooses have to be changed, as they are assigned by division, and steam power has to be serviced.



Five photos: Tom Schieder



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Plowed fields

Tom Smith used Busch No. 7182 Furrowed Fields to make the plowed fields for his N scale railroad. They should work as well or better in HO. The pasture is Woodland Scenics static grass of various lengths and colors. Tom Smith

rain out, as it didn't have one of those flapper things on top. I got the decals a long time ago from Oddball Decals. The fenders and headlights came from resin parts I had from Frank Hodina of Resin Car Works, who made the masters for a Sunshine Models kit. It was easier using the Life-Like Farmalls and adding some of the parts from the resin kits than building the resin kits. I followed that with some weathering."

This line also included a four-bottom plow and a four-row planter, the latter two often sold as a Scene Master set and still available online. Woodland Scenics also has an HO John Deere tractor with a planter and a Farmall tractor with a disc. Walthers sells many foreign-prototype models of farm equipment, some of which could make stand-ins for North American equipment, especially for more modern eras.

A surprisingly broad line of farm structures and equipment in S (1:64) is produced by Standi, now

owned by Mini Truck & Tractor (minitrucktractorllc.com). It includes grain bins, conveyors, catwalks, milk trucks and cattle trailers, manure spreader, dryers, a corn crib, animals, Quonset huts, fencing, and much more.

And the farm implement dealers used to, and probably still do, sell beautifully detailed models of various farm machinery but usually in a large scale. They also sell spray paint to match the colors of their machinery; John Deere even sells spray cans of both new and "classic" greens.

Last, don't forget the pastures — cowpies and all — that give your railroad a little breathing room, 7.

Now that we've looked at ways to model crops and some of the machinery that supported them, let's spend some time in Chapter 8 reviewing ways to expand our narrow 3-D modeling way back to infinity with carefully chosen backdrops, many of them commercially available and easily kitbashed, just like structures.



7 Pastures

The farm scene tucked into the turnback curve leaving Frankfort, Ind., includes a pasture and a “creek” where the farmer’s kids can cool off on an unusually warm late-fall afternoon and the cattle can get a drink (above). Did you notice the dark green tufts Jason Klocke used in the cow pasture to represent new grass growing from cow pies (center)? And if you look closely, you’ll see faint trails in the grass done with PanPastels to simulate cow paths.

Jason Klocke

Lance Mindheim modeled the southern portion of the Monon in N scale, including this evocative pasture scene with a creek meandering across (bottom). The reach-in distance would make such scenes hard to manage in larger scales. *Lance Mindheim*





8 To get a backdrop photo looking west up Second Street in Veedersburg, Ind., Tony had to work with a photo he shot on a “Third Sub Safari.” He used his rudimentary Photoshop Elements skills to remove the modern vehicles, signs, streetlights, centerline stripes, and so on, but wishes he would have found photos of 1950s vehicles to add to the retouched scene.

foreground is done, so you need to get it done now.

Once you learn the basics, and there are many fellow modelers in online chat groups who will be happy to help you learn how to do something, you can expand your newfound capabilities from simple photo editing to blending similar or even dissimilar images into panoramas, 4, making signs or building walls (see “Digital-photo walls” on page 84), street and sidewalk surfaces, colorizing black-and-white photos, 5, updating or backdating photos, converting perspective photos into flat side or front views to use as scale drawings, and so on.

Durability

Most copies that roll out of our home printers are not waterproof, so you’re either going to have to give them several coats of sealer or use a commercial backdrop that is water-resistant. The commercial backdrops will probably do a better job of resisting fading, which is often caused by the ultraviolet rays emitted by fluorescent tubes. And some commercial backdrops come in a peel-and-stick format, making attaching them easier.



9 The long backdrop at Oakland, Ill., is primarily two SceniKing kits (wheat and soybeans) with the sky cut away — it wasn’t high enough for this backdrop — and the shape of the tree line altered to avoid a repetitious appearance every 3 feet or so. One of their road sections was spliced in. The 3-D bean rows would have better matched the backdrop had they been green. The telegraph poles have since been shortened considerably.



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Puffy “fair weather” cumulus clouds dotting the Wisconsin sky exhibit their roughly flat bottoms and billowing tops made by thermal updrafts. All formed at the same altitude where water vapor condenses. Note the predominance of gray shadow compared to white, and how the clouds obey the laws of perspective as they grow more distant.



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It’s easy to insert your own photo between commercial photo backdrops: Just cut the end of the commercial backdrop at a place where it can logically overlap (or be overlapped by) your own photo. Here a line of SceniKing deciduous trees was rounded off with a hobby knife to frame a scene near a brickyard in Veedersburg, Ind.



On the way to Mifflin, we cross the NYC's Big Four main line to Cleveland at Miami Junction over a series of crossovers instead of diamond crossings.



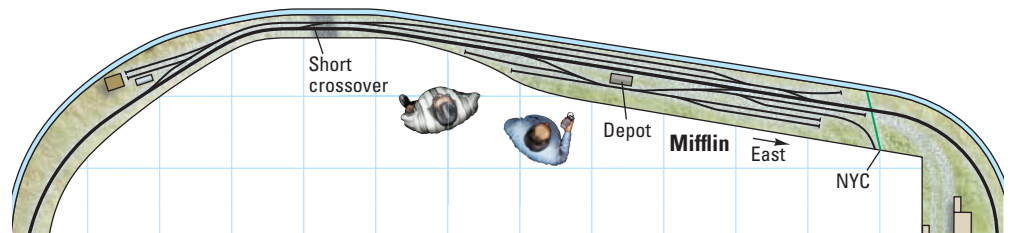
Arriving at Mifflin, we find No. 57 waiting for us on the main line and pull our train into the siding.

Mifflin

8:34 a.m.: We make the maximum authorized speed of 49 mph most of the way from Delphia, though we must slow to 20 mph to cross the NYC at Miami Junction. We slow down again approaching Mifflin, where our superiority over No. 57 ends. We find 57 holding the main waiting for us, and its crew has lined the west switch for the siding. After we ease into the siding at 15 mph, 57's head brakeman lines the switch back to the main and gives his engineer a highball to head west.

After 57 leaves, we can back most of our train out onto the main, stopping with the east or through cars clear of the crossover roughly halfway down the passing siding. We cut off the Mifflin cars and that car for Edison that we picked up from Delphia and continue down the pass. We'll have a couple of facing-point moves, so we leave those cars on the siding and continue down to the interlocking protecting the Toledo & Ohio Central (NYC) crossing. The towerman lines us out of the siding and

We have several setouts and pickups to make at Mifflin. The interlocking signals and tower at the east end of town guard another NYC crossing, here the old Toledo & Ohio Central line.



then east on the main so we can back to the depot for our station work.

The train order signal is clear, indicating that there are no orders for us. After conferring with the agent and finishing the station work, we back farther west on the main to the short crossover. There we get back over to the passing track to couple the facing-point cars ahead of the 521.

We make our setouts and pickups and leave the cars picked up from facing-point spurs in the pass. That way we can run around them on the

main and get everything behind the engine again.

We have time before any trains are due, so we'll sort the train. Using the short crossover and the main line, we place all our pickups at the rear of the train and that boxcar from Delphia with the other Edison cars. We'll leave our next setouts just behind the way car. Wherever space and time permit, we'll keep our train in station order and through cars at the rear.

Let's go. Call the dispatcher to report us out of Mifflin at 10:03 a.m.

