

TEXAS HIGHLIGHTS



Getting Started

My time building a 7.5" gauge railroad in Texas was an experience I'll never forget! It was other-worldly. Let me explain. I left Ohio in early February at 25°F and nearly a foot of snow on the ground.





The next day arriving in Austin, I am greeted with 85° and oranges ripening prolifically. Climate shock!

That wasn't all. Nothing was the same except for the sky. Trees and bushes were different. None of the oaks, maples, hickories, pines, and honeysuckle that are common here, were there. Instead, other varieties of trees I had never seen before, including weird looking evergreens. Unlike our 100+-foot tall trees here, I never saw a tree there over 40 feet tall, but they get very thick at the trunk. And cactus



grows everywhere, like a weed. Lizards are plentiful, always scurrying about. No geese, but lots of ducks! We got sunburned the first day there, and the afternoon temperature got to the mid 90s twice before the end of February. I definitely did not anticipate that! Who would've thought? So, I ever got to experience a Spring season this year.

Getting Wired

My client wanted all the options for this railroad, which meant running wires for signals, train detection, and motorized switches along the predetermined path. This was our first step. (I say “our” because I hired the help of an 18-year-old young man from Dayton.) Some of these 2- and 4-conductor cables ran about 1000 feet!



Normally, I like to lay track sections first, dump ballast on top, then pull up the track through the gravel. While this seems counter-intuitive, this gives me the opportunity to make fitment adjustments to the track before the arduous task of laying ballast — especially on curves and tight places. Therefore, the ballast path perfectly aligns with the track path.

Getting Laid

But our first major issue is that the delivery of track materials was late — in fact, 20 days late from when first promised! So, we laid gravel first in straightaways, and compacted it, because frankly, we had nothing else to do until the track materials arrived. Luckily, the materials arrived just as we finished compacting the ballast. I am grateful that 21 yards of $\frac{3}{4}$ " gravel had already arrived before we did! For the whole project, we used 60 yards of gravel! And most of that was shoveled manually at one point or another.

The next problem was that the materials had to be unloaded from the truck by hand (long story for another day). This included 400 sticks of rail, 143 boxes of ties, 7 heavy boxes

of screws, and several boxes of joiners and U-bolts. There was no sheltered place to put these materials, so we stacked it all on the ground out of the way. Fortunately, none of it was rust-able. But this is where we were unexpectedly introduced to fire ants!!

On Fire

Fire ant bites are nasty! They hurt like a pin prick, and then itch like a mosquito bite! I don't know if we have any of these in Ohio, but they are all over the place in Texas! They are very small ants in huge numbers, not the large red ants that many people think are fire ants. It was hard to work without stepping on a mound, and they were deeply territorial. And then there are the rattlesnakes and copperheads. I didn't hear or see any rattlesnakes, but I did have to pick up a copperhead and set it free a couple of blocks away.



Tracking our Work

Anyway, back to the building... With the important materials finally on hand, we were able to begin assembling track sections, 10 feet long. We set up a table and some saw horses and made it like an assembly line.

We first wiped down the rail and spray-painted it with a rust-colored primer, then we screwed on the ties once the paint had dried. For curves, I pre-bent the rail at about a 40' radius. This can then be easily adjusted from 30 to 50 feet of radius, which accounted for most of our curves.

We intentionally left one rail off for the curved sections. This made it easier to get the proper curvature once the section of track was laid into place. Then we inserted the other rail once positioned and screwed it down to lock in the proper curvature.

Joining track sections together was rather arduous. We had to be on the ground for this part sometimes even laying down. Hazards included fire ants, mosquitoes, gnats, and in some places, even poison ivy! And getting up and down and up and down was the worst! 🤔

Our rented skid steer made much of our ballasting work considerably easier. We could port the ballast from the gravel mountain to our track location and merely dump it right onto the track. Then all we had to do was spread out the gravel accordingly, but there were some areas where we could not bring the skid steer and so we ended up using it to fill 5-gal buckets like is done at Carillon. And then use the skid steer to transport the buckets to where it could not go any further, and we hand carried it the rest of the way. I did much of the ballast spreading with my feet. My shoes lasted though the project even after all that punishment. I was impressed. Does this remind you of the old Timex commercials?

Going Deeper

Somewhere along the way in late March or early April, I had rented an auger to dig some deeper holes for the crossing signal and for some sign posts and signal posts. I had a minor mishap and dropped the auger on my foot. This caused an extraordinary amount of pain to the point where I had to stop working for an hour or so. After the initial surge of pain, my pain did not go away as fast as I had hoped, so I went to urgent care. The PA there looked at the x-rays and could find nothing broken so he figured that I just strained some tendons or ligaments and that I should feel better in a couple of weeks. So I went back to work. It was painful, but I had to push through it. I learned that wearing my work boots helped the pain more than when I wasn't wearing them. A couple of weeks later, the pain was not going away.



When home in late April for my son's funeral, I noticed that not only did my foot continue to hurt, but my knee was also hurting now. But I could not deal with the problem at that point, and when things were settled here in early May, I went back to Texas to finish my work. Fortunately, most of the gravel work was done by this time and then I was working on putting up the signs, the signals, and the driveway crossing, and the crossbucks, which is somewhat less strenuous.



Getting Lit Up!

As I was finishing up the track work, I still had signals to get working and the crossbucks to install, but the problem was that these components were not onsite yet! I learned a lesson the hard way that the next time I place orders with suppliers, I need to give hard deadlines for expected delivery and perhaps, where possible, withhold full payment until delivery is complete by the deadline.

Anyway, all the components did finally make it to the job site and were installed prior to the planned completion date. However, the late arrival didn't leave me with enough time to debug the issues. And there were issues! So, I had to make another trip back to Texas to finish up debasing these issues. But one thing that definitely did work better than I anticipated was that electrical conductivity was continuous through all the rail joints — in some cases up to 100 joints — this, despite the fact that the rails were painted prior to being joined to adjacent rails.

The Issues

For the train signals, sensitivity adjustments were hard to get right. If the sensitivity was adjusted too far to the left, ghost detections would occur when it rained or when the irrigation system would get the tracks wet. If it was adjusted far enough to the right to make those false alarms go away, then it wouldn't detect the train on the block either. I spent a lot of time tweaking these adjustments and ultimately found some happy ground, although it is still not perfect.

For the crossbucks, which had the flashing lights, ringing bell, and the operating gates, there was trouble with the triggering sensors. We eventually determined that the sensors would malfunction in the afternoon heat, which reached 104°F a couple of days while I was there! So we ended up replacing all of the reed sensors with more expensive sensors, and it works better now.

There were some other issues as well, but not worth getting into here.

Nothing to Ride

Once all the work was done, I drove back home. The problem was the train was also very late! And wasn't on the job site by the time my work was done. It did finally arrive about three or four days after I departed the job site, so I wasn't able to assist in setting up the train, which led to some problems. The staff there at the job site wasn't sure what was normal and what was not. One of the issues with the locomotive is that one of the drive chains was so loose that it caught on itself and created a jerking sensation which was very uncomfortable, and they just thought that was normal operation! There were also a number of train derailments, which I could have worked out before I left, if





the train had been on time. Most of these were train issues, and not track issues.

A large party was planned at the job site for the 4th of July. So my client wanted me back beforehand to resolve all of these issues if I could. I was able to resolve most of them. But what puzzled me most was that my track in Texas is in much more pristine condition than the track at Carillon, yet at Carillon, derailments are extremely rare. So I began to look at this as a train issue. With only one remaining derailment issue and making all the track adjustments I could, I brought in Titan Trains to help me diagnose the problem.

This is still an open issue at the time of writing this article, but I think that the problem lies in that the couplers are not long enough to tolerate the 34'-radius curve, and they don't have enough flexibility to twist when coming out of super-elevated track to level track. This is on a trestle so the track is literally attached to the structure, giving me less flexibility to make substantial adjustments. I also think the trucks on the cars lack enough side-to-side flexibility.

This is still an open issue. To be continued...