

## Slot Car Interpretation of Sam Posey's "Magic of Illusion" article.

Reference: Model Railroader Magazine, Magic of Illusion by Sam Posey, with photos by Dave Frary.



Sam Posey is a multi-talented man with many interests. Among them include painting, as well as Model Railroading. On top of that he is an intelligent thinker and planner, evident in his article "Magic of Illusion" for Model Railroader Magazine, see reference information at top. He is the inspiration for this article, and we will attempt to apply many of his themes to slot car scenery.

## 29 The magic of illusion

A practical guide to making your layout look larger

BY SAM POSEY  
PHOTOS BY DAVE FRARY

I once started out to build the Rockies on a 4 x 8-foot sheet of plywood! Of course it couldn't be done. To model even a single mile of actual, real life terrain in HO scale takes a whopping 66 feet!

To have all the stuff we dream of—the bridges, towns, yards, and more—in some coherent arrangement, we must resort to illusion, devising ways to create an image that's more than the sum of its parts. Pulling off a successful visual illusion means harnessing the imagination and making the observer interpret "correct" sensory inputs in a different way.

### Behind the scenes

This chapter explores some of the illusions that have worked best for me. My sketches overprinted on Dave Frary's photos render the concepts graphically.

I built the layout in partnership with my friend Rolf Schneider. Our

concept was to invent a mythical extension of the real Colorado Midland RR. The Midland, begun in 1887, was the first standard gauge railroad to cross the Rocky Mountains. In 1918 it went bankrupt. Rolf and I like to think that had our extension connecting the Midland with the Santa Fe actually been built, Colorado cattle and ore could have reached broader markets, and the Midland could have been saved.

### What's real?

Is a 6"-long HO locomotive "real?" It runs down the tracks and can pull cars; in that sense it is real. But it is shaped like a locomotive 87 times larger, which it is meant to evoke; in that sense it is an illusion. Similarly, model trees cast real shadows and model bridges work just like the real thing, even if the rivers they span are made of Enviro-Tex.

The most fundamental tool of the modeler, then, is also the most obvious: scale change. Confronted

with something that is just 1/87 the size of the real thing, the viewer quickly grasps that what is "real" is the illusion. Now the modeler has a potent tool working for him, the viewer's imagination. From childhood on, we enjoy the worlds of fantasy and make-believe. Furthermore, the human brain helps by filling in a lot of things that are not actually there.

### The world of illusion

I've barely scratched the surface. Renaissance painters discovered the illusion of depth is organized around a loosely applied system of scale, atmospheric color, and perspective. Mirrors and special lighting have worked magic in the hands of John Allen, Malcolm Furlow, and others. With sound the newest addition to our illusionist's kit, seeing is believing—and hearing is too.

The focus of this article won't be "how" to model scenery, but rather:

- What do you want the viewer's first impressions to be?
- How do you want them to scan your layout?
  - Wide to narrow, far to front, top to bottom?
  - How will you use colors and textures to highlight focal points?
- What can be done in your available space to create depth, drama, illusion of activity?
- Use a consistent theme, (such as geographic location, time period, relevant features or structures found at a race track, etc.), to reinforce the miniature World that you are creating.

No matter if you are a Novice or experienced Modeler, an effort to plan and capture Sam Posey's thoughts on scenery will enhance the overall impression of your slot car layout. Scenery adds a lot of "WOW" factor for your audience, especially those who are perhaps not the most hardcore Racers.

Whether on purpose, or unknowingly, it's a goal of most modelers to create a miniature World with some level of realism. However, I think it is safe to say that it is rarely planned as an objective when designing a model raceway. Most of our efforts go towards the racing effort – packing as much interesting layout into the available space. What is left over is then used to identify the place/time period/accessories that identify our layout. The hope is that you will instead include scenic elements as part of your track layout design plan, and build upon the opportunities that Sam Posey has highlighted. Here are some thoughts and images compiled from model raceway folks in the Detroit, MI area.

### First Impressions

Assumed most people will approach your slot car layout from a particular direction, say from the base of a stairway, a doorway, or while walking from one end of a room to the other. It is best if there is something interesting to immediately look at that registers it as a race track. Such as:

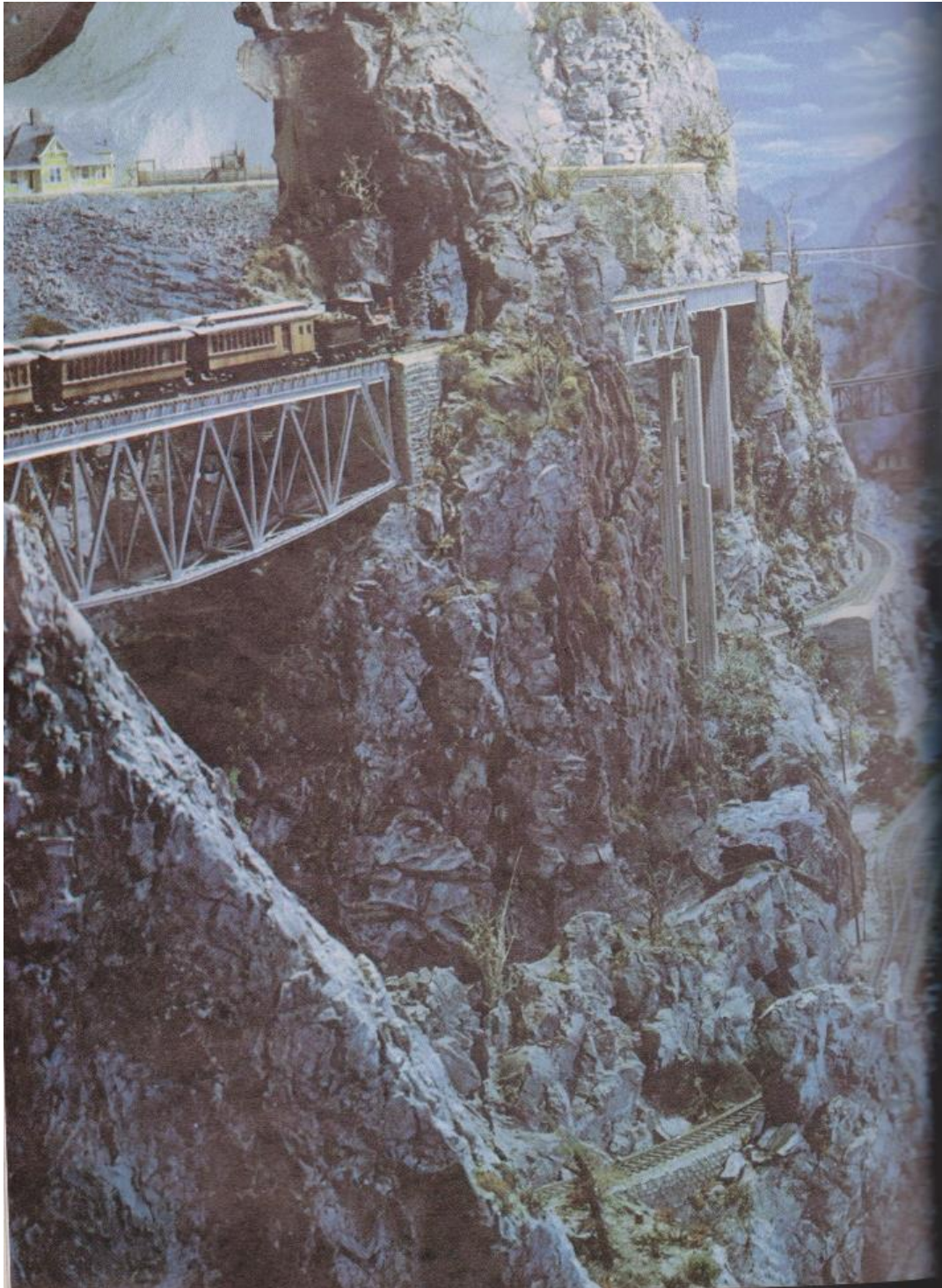
- A control tower.
- Row of pit garages.
- The Start/Finish line, (with grandstands and/or pit area).

These items are even better if they are lighted! Often slot car layouts are located in basements, which don't have the most fabulous lighting, so lighted scenery elements really stand out.



My track has a row of garages, which are lighted, above left. I have them filled with Trans Am cars from 1970 – 1971 era, which have a nice variety of colors. There is also the track itself, which has large runoff areas so quite wide sections of track. As a friend of mine noted, "There is a lot of grey!", (track surface). I have been adding "green" areas with scenery to break it up, examples above center and right.

Sam Posey's reference to John Allen (towards end of paragraph under "The world of illusion" heading, page 1) is giving a nod to one of the first and grandest model railroad HO scale modelers of all time. He built a massive floor-to-ceiling sculpted layout in his basement in CA that would bold over any person on their first/second/third/fourth...impression! Next two images are examples. Remember, John Allen built much of this before the availability of much of the HO scale model scenery and structures were available, like we have today.



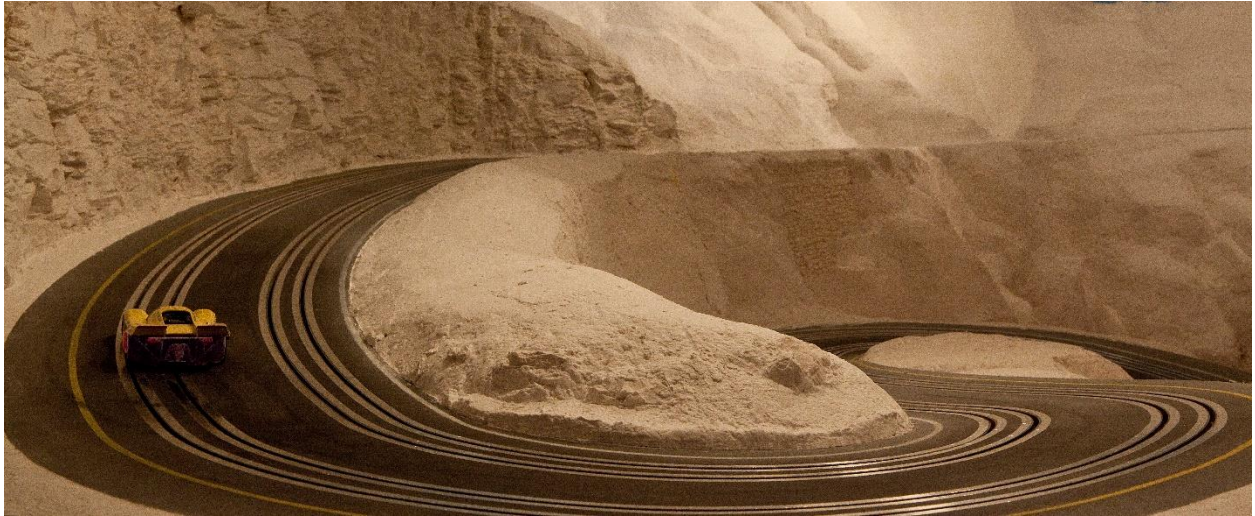


Mountain railroad was what John enjoyed most, and this view up Giant Canyon toward  
Mount Rainier shows how well he achieved what he had planned. G.D. trains had to cross  
many bridges shown here and dozens more to traverse the railroad's rugged territory.

It would be really cool to see floor-to-ceiling sculptures in your slot car enclave, like John Allen's outrageous model railroad, which was destroyed by fire 10 days after he died in 1973.



The closest I have seen to floor-to-ceiling modeling on a slot car raceway is this layout in a Northern suburb of Detroit. Yup, you stand outside of the room and look in to race your car! Makes quite a first impression!



Can't over emphasize how much elevation change adds to the scenic opportunity of a layout!



If you have a dramatic turn on your layout, you may want to put that closest to where people will enter the room. For example, the first part of the track that you see entering Jimmy Attard's Northline Raceway is the Laguna Secca "Corkscrew". Reference "Lunch King" on YouTube for videos on Northline.

Structures are often a centerpiece of a layout. However, it could be something more subtle, like a large modeled tree that is slightly lighter/brighter in color than the rest of the trees on the layout. Anthony Ramsey has a number of YouTube videos, and he has excellent suggestions for eye catching colors/textures and how to model race track scenery items.



The vintage Scalextric Marshal building was made from the top half of the control tower. It had a very funky green roof and door. I think it looks much better with a black textured roof, grey door and smoked window tint. The “flowers” were modeled in Shell colors and arranged in a geometric pattern radiating from the flag pole. The green sloping hill area in the background has dark evergreens as well as a lighter/brighter birch tree to provide some color contrast.

Lastly you only get one first impression, so you want to avoid a messy room with boxes/piles of things to distract the viewer, if at all possible. I would say it is even best if your displays of cars are in another room – or other end of the room. Want the people around the track engaged with the racing.

#### Guiding the Viewer Across Your Layout

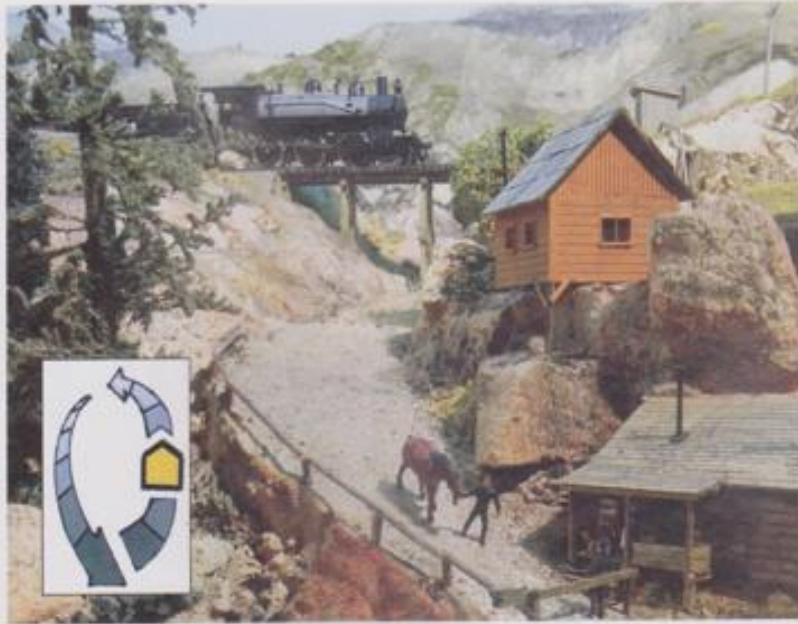
We will use some of Sam Posey’s principles and show how they can be applied to your model raceway. The first he titles “Stepping into the picture”.

## Stepping into the picture

We all know that a successful scene needs something that draws you into it and then other elements to move your eye around. The familiar formula for creating the illusion of depth is to have the eye see things that appear to be nearby, then other things far away, thus moving in and out rather than across the picture.

In this scene most people see the yellow house first, then move back to the locomotive, then forward to the man leading the horse. Once you establish the basic visual mechanics of the scene, you can tinker with the scale, color, and texture to strengthen the sense of depth. Here, the scale changes drastically from the large foreground pine to a distant town made up of buildings about 1" long on the ridge above the locomotive. You can barely make one of them out here.

To further enhance the illusion of distance, the color changes from



warm foreground earth tones to cool distant blues and greens. There's plenty of texture in the foreground rocks and shingles, while the distant mountains are just thin acrylic washes on smooth plaster.

Most of us slot car guys are more about filling our space with track, and having sufficient run-off areas to avoid damage to errant cars. Guilty as charged! However, this doesn't mean we can't use some of the space between track sections, or even the surrounding table and room to add to the diorama of our race environment. For example, I chose to paint the rear wall of my basement a nice sky blue, to act as a bit of a backdrop for trackside photos. I am slowly filling in all of the available spaces with dioramas that project a race track theme from say the mid 1980's, (as most of my cars are from before this timeframe). I am trying to keep a very consistent color theme for all of my race structures, (white with black roof and red highlights).

Filling in the rest of the space is then open to modeling techniques to add/aid focal points. This can be viewed as either a scary challenge, or creative outlet. I too had a hard time getting started, (mostly for fear of having really awful results!). So, I started by making a little 2' x 3' car display diorama, featuring a turn surrounded by a natural rock wall which blended into a guardrail bordering the entrance of a turn. I studied tutorials from Woodland Scenics, bought some products, and on my first try had what I considered to be remarkably good results! Even my Wife thought it looked pretty good, so that gave me the confidence to start on my track scenery.

- Start on a small area, and master your scenery building techniques. Do NOT attempt to do all of the track scenery at once.
- Make a plan before you start each project. Procure enough materials necessary to complete the project so once you are on a roll, can work without interruption(s).
- Have the attitude that whatever you do, if you don't like it – you can always tear it out and redo.





This is my pit road. The Master Modeler Jimmy Attard made the Thunder Road Raceway cement wall for me. You can tell my work because I have not attempted to weather it yet. The point here though, is you want a little contrast in colors and textures to build some interest. Car Guys first notice the cool Ninco Cobra and E-Type Jag, and Carrera Corvette Stingray and Cheetah lined up in their pit boxes. Then you might notice Thunder Road on the cement barricade wall, then hopefully you notice the contrast between the blue spruce and Penske manicured green turf, maybe you also notice the rock wall with yellow moss, then finally pan out to see the control tower in the distance. Obviously, a lot more detail can be added to pit row, like stacks of tires, crew members, tools and pit carts. I will get there some day...

The pit road should be all about activity:

- Cars coming in/out for service.
  - Guys making sure cars are flagged to the right pit box.
- Pit crews going over the wall.
  - Some guys should also be assisting from the pit cart side of the wall, handing a drink or restraining a used wheel/tire.
- Pit boxes with Crew Chiefs, Engineers, Tire Technicians, etc.
- Stacks of wheel/tires, jacks, air hoses/guns, tools, tool boxes, gas cans and carts, etc.

Of course, pit road is full of people each doing their job including track Officials, camera men, etc.

## Accenting the vertical

There is nothing subtle about this shot! Extreme vertical space, emphasized by the narrowness and frailty of the bridge support, is this view's primary dynamic, but it is balanced by the way the river takes the eye straight back into the center:

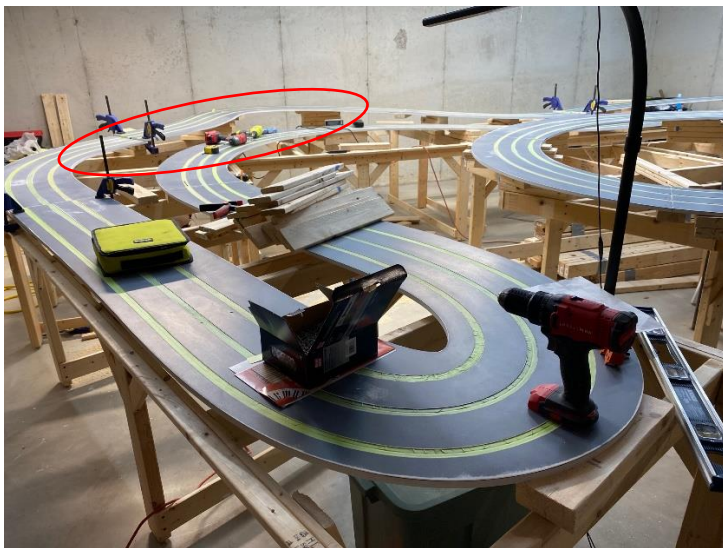
Without reliable references such as buildings and trees, scale change can be created abstractly. A series of rectangles, diminishing in size, moves the eye back into the picture.

Each rectangle is keyed to a notch in the cliff that runs up the right side of the picture. The largest is bounded on the right by the lowest notch in the cliff, the deep shadow on the rocks to the far left, and the bridge across the top. See it?

The next rectangle is the gap under the bridge, with the lower right-hand corner marked by the notch right across from the base of the bridge support. The last is the dark area at the end of the river. The rectangles are like a series of doors leading you in.



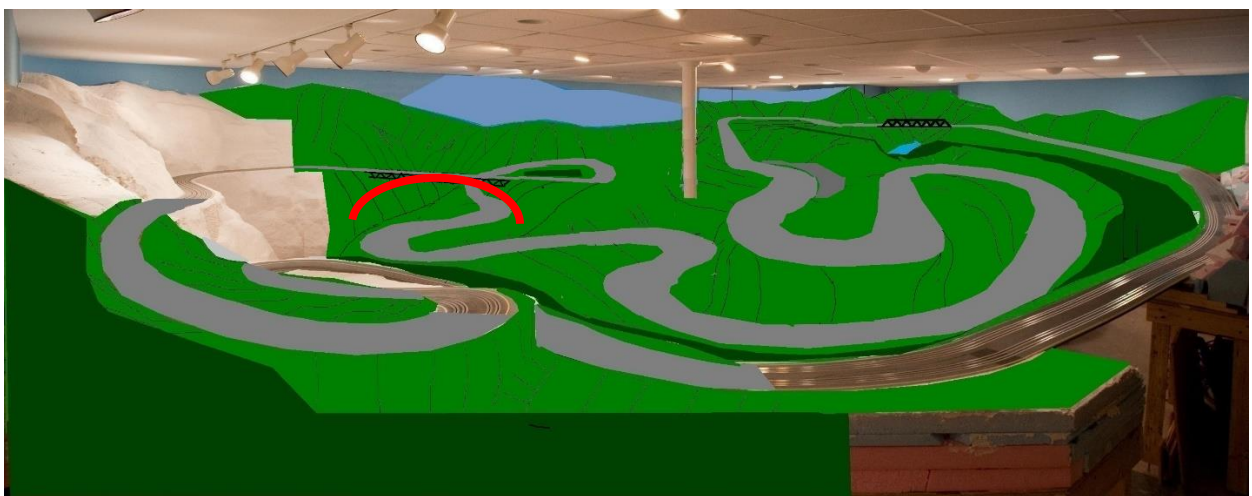
Elevation change is one of the things that adds to the excitement of racing on a wood slot car track. The connections between sections of plastic track do NOT do well when asked to be shaped with any significant change in elevation or twist. Granted, you need to exercise some caution when bending MDF as well, to avoid cracking or closing the groove.



It is not apparent from this distance, but there is 12" of vertical drop at the Corkscrew, (circled). That is a fair amount for a slot car track, especially over a short distance. I have launched several cars from the finished Corkscrew, especially those with stock depth guides.

Work in progress on the Laguna Seca "Cork Screw" in background. It took a lot of blocks and clamps to develop the shape, patience to avoid cracking the MDF. We CNC cut two sections of track, just in case...

Ultimately, what we are trying to emphasize is that **PLANNING** should be an early and integral part of your CNC Track Design experience. Even if it takes you years to execute all of the design elements and features of the layout, it is something that will give you great excitement in the planning stage, motivation in the building stage, and satisfaction in the execution and enjoyment stage. I am proud to be a small part in the building of this layout, which will feature some large, dramatic vistas.



Arch span bridge to add dramatic vertical effect.



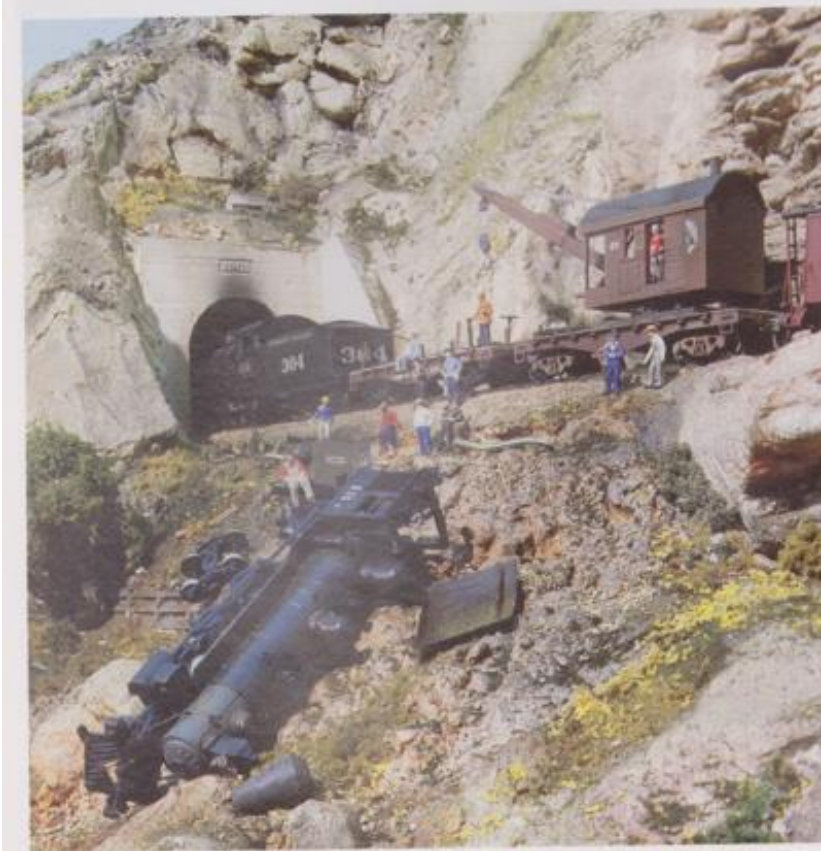
### Forcing the perspective

When we imagine rails stretching out to the horizon we think (correctly) that the horizon is far away. Now, when we see rails intersecting in the distance, our experience is ready to tell us that they are meeting at the horizon.

I designed this yard so that the main line sweeping in from the left intersects with the convergence of the yard tracks and creates a false vanishing point. This establishes a "horizon" much closer than it really would be, thereby driving everything behind it even farther away.



My track has fully variable lane spacing. The lanes pinch together under the overpass, adding to the illusion of forced perspective so the track "looks" longer when viewed from either end.



### Space as time

In this scene we're creating space in a way entirely different from the others. The essence of the tableau is narrative: A locomotive has derailed and obviously there is a story here.

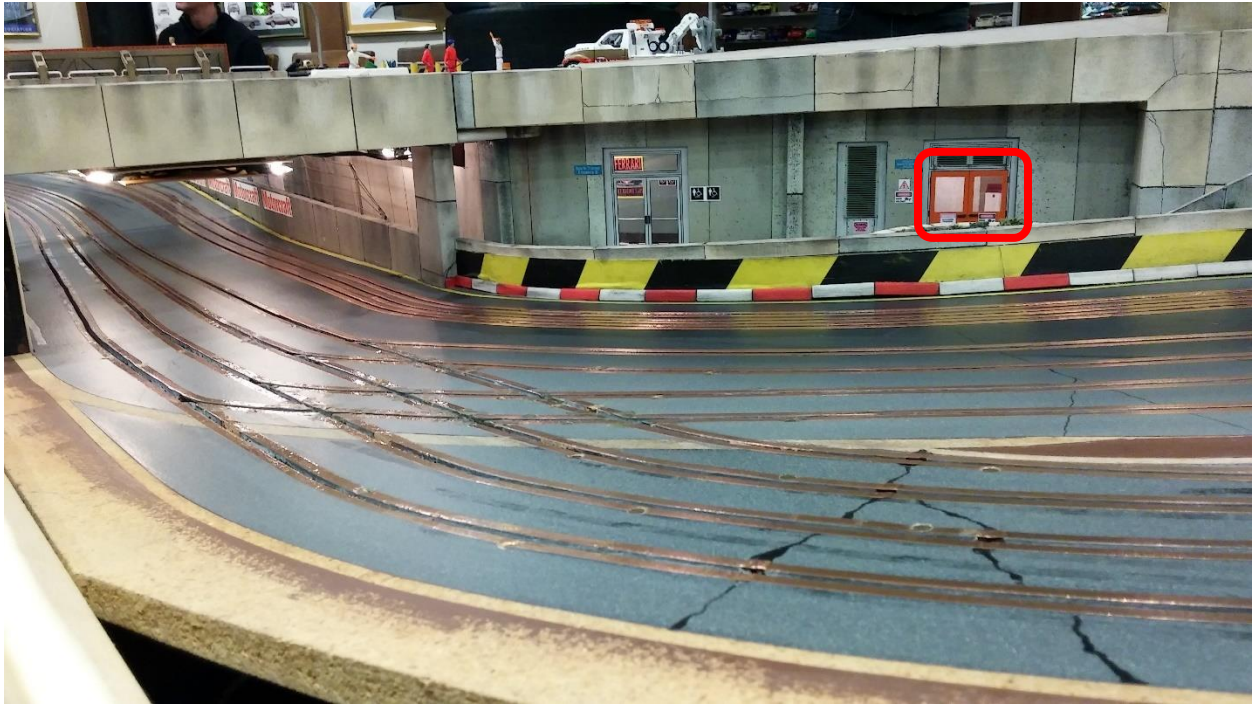
"Space" takes the form of the interval of time between the moment of the wreck (probably last night, when this mountain pass was shrouded in mist) and when the Midland's staff photographer, Big Man Dave, eased down the cliff with his heavy equipment to take the photo.

When people visit my layout, they see the wreck of old number 18 and invariably ask when it happened. Whether it actually ever "happened" at all simply isn't brought into question. Seeing is believing.

There are many ways that you can create storylines to add discussion points with your model raceway.

- A car wreck in the process of being retrieved by safety crews.
- An injured Driver being air lifted to a nearby Hospital.
- Garages with toolboxes, jacks, guys on computers, etc.
- Pit crew members bringing fuel cans to be refilled, or getting sets of tires from the Goodyear truck.
- A car/crew in the middle of a pit stop.
- A crew unloading a shiny new race car from a hauler.
- People filing through ticket registration and heading towards the grandstands or mid-way displays.
- Restaurant areas, RV's, car shows, people being shuttled around on golf carts, etc.

There are a number of pictures of such activities on the CNC Track Design website under the Scenery Elements tab, titled "Trackside Realism".



Jimmy Attard is the Master Modeler, and clever at utilizing all available space in and around his layout. Here is the sanctioning office with the weekend schedule and Driver's meeting notes posting, (red circled). You can also see the wrecker above with discussion taking place among the track workers.

### Close but far away

Here we see what can be done to make two essentially parallel tracks inhabit different worlds. This scene has two kinds of space in tension. In the foreground, the bridge creates a concave space, while the background space is convex, bending around a hill. The deep chasm between the trains makes them seem farther apart.

Going to our scale/color/texture bag, the bridge's height contrasts with the scaled down trees in the background, the girders' warm color contrasts with cool shadows playing across the mountains, and Rolf's detailing of the bridge pulls it forward, while the distant trees are further diminished by being clumped together.



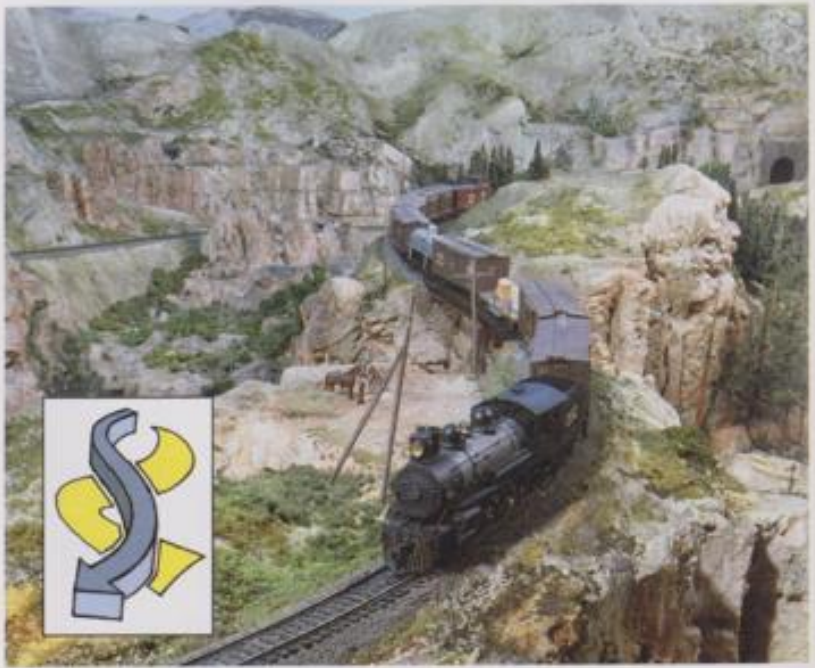


Elevation is a great way to create “distance” between sections of track that are actually quite close. It also opens up vertical space that can be filled with scenery. Note rock wall under elevated track.

### Slowing for curves

This scene illustrates how an S bend can expand space. Imagine how the scene would look if the track ran straight from the locomotive back to the caboose—the distance between them would seem less, right? But because the eye must swing right, left, right as it follows the S, it moves more slowly than if it were just connecting two points. The extra time sends a signal the brain interprets as greater distance.

I wanted to slow the eye movement even further, so I created a second, backward, S out of the bare rocks, a visual obstruction that subtly suggests the train is fighting its way through the scenery.



Another view of a switch back mountain climb with scenery extended all the way down near the floor!

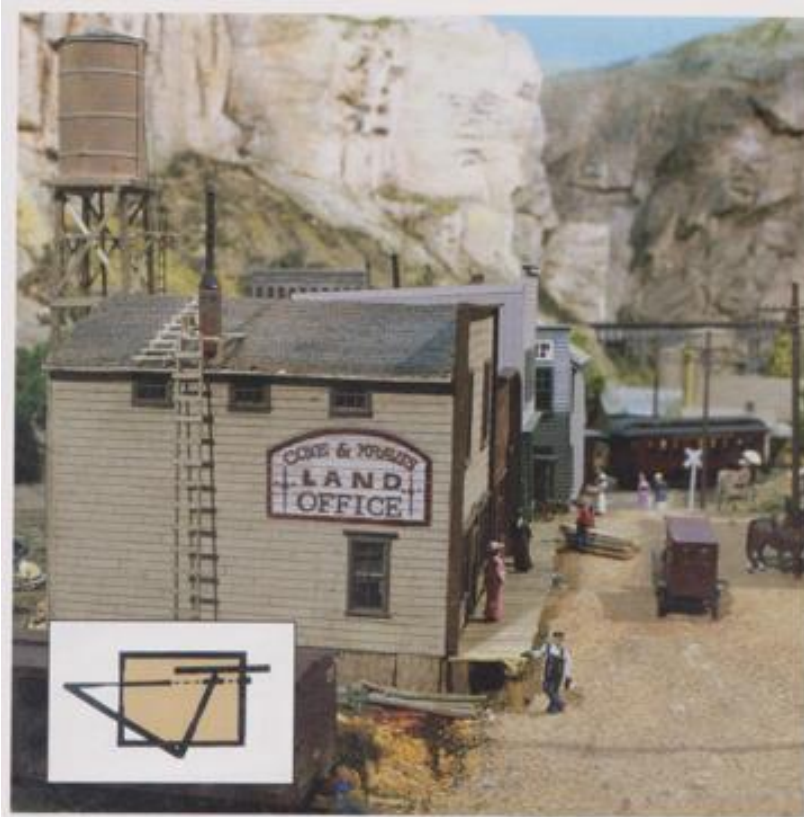




The fabulous White Lake, MI Formula 1 Ring. Mid-way in the scenery process, before a number of structures were added. You can find many images on the internet and YouTube. Lots of elevation change, racing lines, passing and non-passing zones. Note: This is an AC2 track. Look up AC2.org for background reading on this racing concept, which is somewhat similar to digital.

Some points to consider when planning your CNC Track Design layout with regard to “Slowing for curves”:

- We can design and CNC cut some very large radius bends.
  - Radius of 12', or 25', or non-constant, or variable lane spacing; whatever you want!
    - If you space is really small and you are trying to jam in as much running length as possible, you might as well stick with plastic track. There is no sense in making a bunch of tight radius turns in CNC, unless you want to leverage variable lane spacing. Granted the smoothing that we do will help tight turns race faster with less voltage and crashes, but the real beauty of CNC design and manufacturing is making some very fluid looking layouts that look and race more like how a real car gets piloted around a circuit.
- Not everything needs to be a rectangle! A lot of people say, “I got space for an 8' x 16' layout”. However, when I look at their room, I see a larger footprint if we bend it around the furnace and angle this side a bit, and have a Marshalling walkway in the middle, etc. The layout will look far more interesting if it is not just a series of straight sections with turns connecting everything at the ends. Having some diagonal runs and keeping some technical turns near the center, closer to the Driver's stations, is easier for Driving/Marshalling and can add some interest.



### The suggestion of more

In this scene a diagonal slices across the picture, inviting the viewer to stroll up the main street. This is a busy scene, but much of what you think is in it is only partly there, with the rest left to the imagination—the same way seeing the corner of a table at the edge of a picture infers that the rest of the table exists. Here crowding the buildings together suggests more town—but there isn't.

A whole train is suggested by a glimpse of two coaches, and the viewer's knowledge that they must be sitting on a track creates an implied horizontal which leads the eye to the station on the left. The land office sign, perhaps missed at first, reminds the viewer that beyond the town, unseen but very much there, are the broad sunlit plains of Colorado.



The suggestion of more can come in many forms. Jimmy Attard modeled a Café, with ordering counter and menu items, although you can't "see" anyone enjoying the overpriced track food.



I let my track border line “fall off” the edge. The track was trimmed along the red arrow to improve line-of-sight for the Driver in the Red lane as they approach the Start/Finish line.

### Consistency

Last but not least I would like to bring up the notion of “consistency”. By this I mean if your intent is to model a modern F1 track, you need to have modern structures, support vehicles, pit crews, lighting, etc. There is so much reference material on the internet. Doing a little research to figure out what is available vs. what will need to be scratch built is fun.

If you can make it to a major track, or better yet, a track located with similar geography to what you are modeling, take as many pictures as possible. Take pictures of everything, like all the structures, surrounding features like retaining walls, run-off areas, color of curbing, shape and backdrop used at Victory Lane, etc. Note the relative location of things to support the racing, like garages, fuel station, where the haulers are parked, flag stand relative to pit row exit, etc. Getting all of these things in logical placement on your layout helps to infer the *realism* that you are trying to mimic/create.

Grab soil and rock samples so you can match colors, or at least use ones that go together. Understand that you may have to slightly alter the colors that you see outdoors at the track, to give a similar appearance indoors, especially if your track is in a basement with only artificial light. Your modeled colors may need to be a bit more vibrant to give the same feel as what you experienced outdoors.

Likewise, it is unlikely for one part of the track to be modeled in Summer foliage, and another in Fall colors, (unless there is extreme elevation). Most of us don't put enough trees on our layout, for a number of reasons, (expense, hinder line-of-sight of Drivers, people bumping into them when retrieving errant cars, etc.). Anthony Ramsey has done a very nice job with trees on his layout, putting them more in the center of the layout where they are not going to get leaned on, and keeping good line-of-sight to the circuit, see image below.



Beautiful scenery should be the objective whether you are building a CNC Track Design layout, or one with Carrera plastic track. Here Anthony Ramsey's Carrera digital layout showcases many of the items we have been discussing: Interesting focal points, vibrant colors, consistent (modern) race track theme/structures/features/Sponsor logos, and trust me – a super clean and inviting environment that makes a huge impression! You can see many more images when you check out Anthony Ramsey's YouTube videos.

Try to plan your track elevation changes to follow natural rolling hills. If you want a tunnel, it should be on the edge of the layout, so you only have to model the foot of the mountain. You can have parts that are excavated, but the whole track shouldn't look like it was done that way. The parts that are excavated are an opportunity to try your hand at modeling a rock wall.

Rock forms for plaster come in a variety of shapes, sizes, and rock strata. You will want to get ones that have similar detail to the area of the country that you are modeling. The Woodland Scenics latex rubber rock molds tend to be small. Bragdon Enterprises makes a much larger variety and most importantly, larger molds so you don't have as many seams. They tend to be much longer and not as deep, thus are easier to bend and form (prior to filling with plaster) into contoured rock faces.



Yup, be the Weirdo that takes pictures of rock walls along interstates so you know what Woodland Scenics products to buy for tinting plaster rock forms.



The bluffs next to the road here are about 9 inches high and do not utilize a lot of horizontal space. Undulating the scenic base and mixing in rock molds can make for a more interesting view than a level surface or even a uniform hill. The overlay of one bluff to another adds depth the scene.

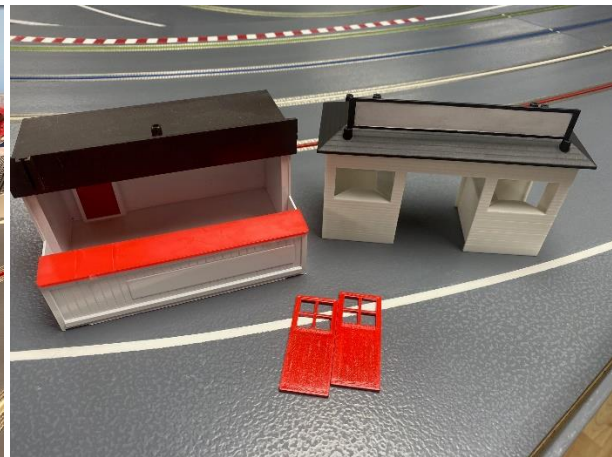
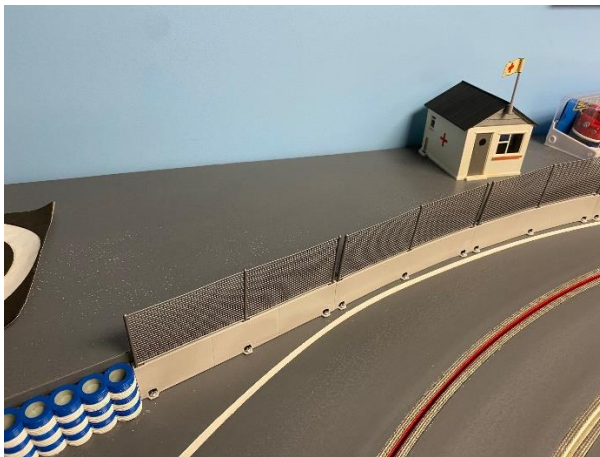
Natural elements in and around your raceway should look...natural! For example, I didn't know what the word "Talus" meant before I started modeling rock walls. Talus are the small rocks that break away from the larger rocks and collect in the ravines and natural traps between rock faces. Talus can be made up of quite a range of rock sizes, however, I would highly recommend that you choose talus larger than the groove width! You don't want talus or any other scenery bits finding their way into the groove(s) of your track! Likewise, if you are going to model a sand run-off area, you may want to use tan corduroy material to give the raked sand look, and be gentle to the finish of an errant car and avoid loosening any actual sand that could get in the grooves or cars.



Strive to make trees, shrubs, flowers, and ground cover to look as "natural" as possible. Not every tree is perfectly shaped, and the ground cover, (especially in shaded areas) is rarely perfectly manicured.

When modeling guard rails, barrier walls, run-off areas, or other edge of track features, place them at uniform or functional distances. I like to use an odd number of sections, whether they are guard rails or barrier walls. Place them so they start and end in logical places, relative to turn apexes or crash points.

Don't be afraid to ask for help from people with more experience. I had the good fortune to have help from Dwight Woodbridge, who did a lot of open wheel racing. He helped me pin stripe the racing line edge of my track, and consulted on many features. Also, I took pictures and measurements from actual race tracks so I could get the proper scale of pit walls and such. Again, reference "Scenery Elements" tab on the CNC Track Design website for trackside realism images and discussion.



Building structures should all be from the same era. In other words, don't mix modern with lap board wood structures from the 1960's. Paint them with a similar color theme. For example; white buildings with black roofs, grey trim and red accents. I used smoked windows to mask the lights on the inside so they are less of a glare distraction if night racing. The Scalextric First Aid Hut in the lower left is going to get an adjoining Heli-pad. Some of the Scalextric pit boxes come in strangely different colors. It is hard to find the right "white" to match the injection molded white of 50 year-old structures. For example, the Strombecker ticket office is not the same white as my other Scalextric buildings, so I am in the process of painting it a brighter white.

It is OK to try different scenery techniques. Just incorporate your best results throughout the track. I have torn out things that just were not working out, filled holes and had to strip and repaint many models. Take your time and try to do the job right the first time. Stop and give that model one more wipe with a tac rag before shooting paint! Don't paint under poor weather conditions and expect perfect results...

And don't skip steps, like black washes to bring out the detail in rock faces, gluing trees and things in place, and "sealing" your finished masterpiece with scenery cement.

Lastly, your layout will look more complete by adding people performing all sorts of different activities.



Sometimes the vertical is all you need for a big scene. The width of the scene above, wall to edge of the bench, is about 1 foot. Believe it or not, but this rock overhang was torn out because the Artist felt that, “Too much of the rock detail in the plaster had been lost!” I get it, but boy – I thought it looked pretty amazing, and would have looked convincing after tinting and weathering!

### Think Big!

Scenery adds so much WOW factor to a layout! It doesn't necessarily have to be floor-to-ceiling, or take up a lot of additional room, (but it would be cool if you could do some big vistas!). It can fill in open spaces between track sections that are potential floor landings after a crash. It can serve as places to set extra cars, add lighting for night-time racing, and make the layout look completely different from each side of the table. Most importantly though, it can add to the realism of miniature Motorsports by providing stationary objects to give the “picket fence” effect for speed.

Scenery is something that you can do over a long period of time, or an opportunity to get others excited about contributing to your “functional raceway art”. My Wife likes to make suggestions, is much better with colors, and has art supplies that she like to suggest/contribute. Perhaps you don't want to entrust Children/Grandchildren with drills/saws and such during the track assembly phase, but they can contribute to the scenery elements. No need to make it stressful, hopefully it is something the whole family can get engaged with!

I hope the modeling scenery concepts described by Sam Posey and augmented by the many fine road racing examples from Modelers and Racers in the Detroit area have inspired you to pull out a sketch pad. The planning part of your layout should be as much fun as the building/racing phases. I hope you consider making scenery a part of your total CNC Track Design build plan.





CNC Track Design can help turn your dream into a reality.

**Let's create something cool!**