## Introduction

We first met Butch Dunaway (HRW forum member "Pappy") several years ago at the Michigan 24 Hour Endurance Race and have raced with him several times since. Butch was a professional woodworker by trade – as such, it should come as little surprise that he excels at building amazing routed tracks.

Butch has provided descriptions and accompanying pictures to document many of the steps for his most recent track build. While more ambitious than most routed track builds, many of the steps and techniques apply to routed tracks of all shapes and sizes.

This material was originally posted on the Home Racing World (www.hrwforum.com) routed track sub-forum back in 2020. All descriptions and pictures are copyright © 2020 – 2022 by Butch Dunaway. We are using this material with Butch's permission.

***** PLEASE NOTE:**

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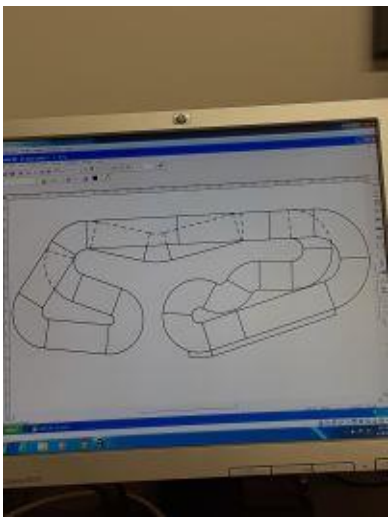
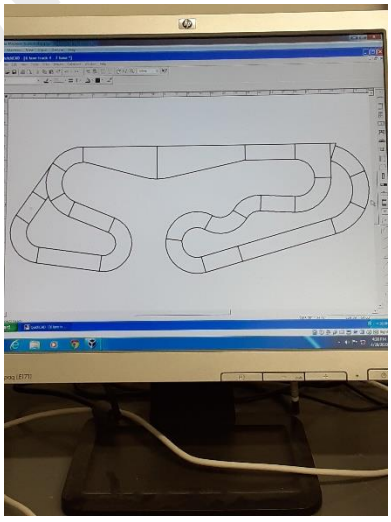
Here we go!



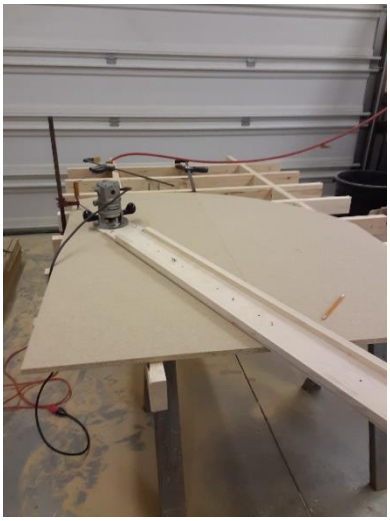
Every project starts with a plan. Here's the drawing for the track I'm building. It's going to be a six lane Hillclimb with a footprint of 12' x 30'. Average lap length about 105'. The track surface will be 30" wide, 6" outer gutter, 4" lane spacing and 4" inside gutter. The track will be on a pedestal base on fifteen casters. It will be powered by a 50 amp variable voltage power pack up to 15 volts. The lap counter will be a LapMaster. I designed it to have a technical section with ess's and couple of little kinks. Then a section with larger sweeping turns and on to a 20' long top straightaway into a 9' diameter turn leading back downhill to the drivers stations.

This is a drawing of the base. It's 16" wide, 10 1/4" tall sitting on 9" tall casters. The lower level of the track will be 24" off of the floor and the top level will be 48" of the floor. The back part of the base is designed for a place to put the upper level supports on.



I started out by building a cut-out grid to support 4' x 8' sheets of material. The grid it 5' wide x 8' long made of two by 2 x 4's on edge. They are notched to hold them in place with no screws or nails so you can cut or route into the 2 x 4's and not worry about hitting a screw or nail. It also gives you plenty of places to clamp or screw your material to so it doesn't move around while routing or cutting.

Next step was to make my bar for a router to cut all my arcs.



Here' the bar in action on my grid. You can see how easy it is to clamp your material to the grid so it doesn't move around. All the holes in the bar for the different radius' were marked and color coded so I know which two holes were for the inner and out cuts on the same piece.

This is how I marked and colored coded each radius.

To make a long straight cut I used my 3 1/4 hp router on a plunger base with a template guide and a straight piece of wood as the guide.

These are all my arcs for the base. The base is made out of 5/8" industrial particle board.

The first sections I built were the large sections. I put a particle board partition every 16" and covered the sides with 1/8" baltic birch plywood. Here's the two large sections bolted together with a caster.

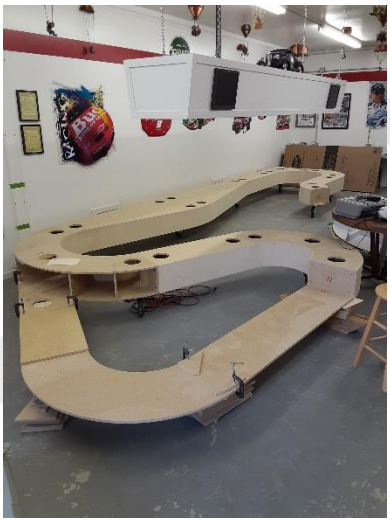
Top view showing access holes to bolt them together and install caster.

The ess's under construction.

This is how I cut all my access holes. I made a templet out of scrap wood and used my 3 1/4 hp router with a templet guide.

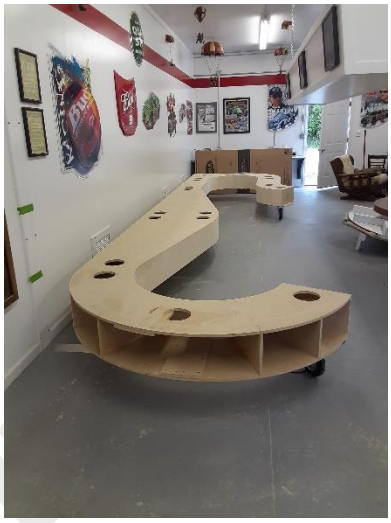
The two large sections with a short straight and the corner piece bolted on. When I got enough sections built with casters where it would balance I turned it up the wheels.

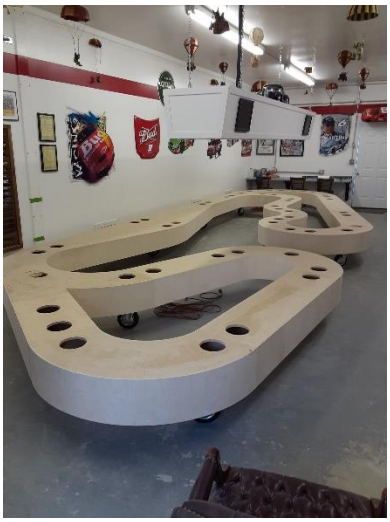
From this point it's just a matter of keep adding sections to complete the base.



I wanted to make sure everything would come together before I built these sections.

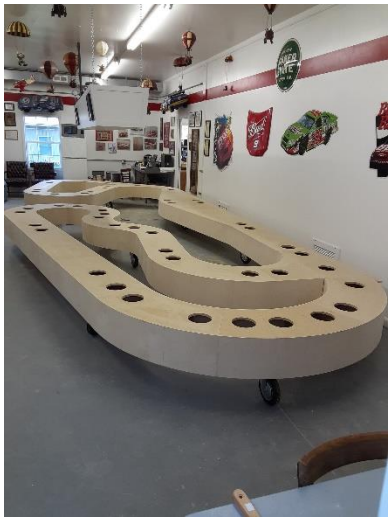
Just another view on how it went together.

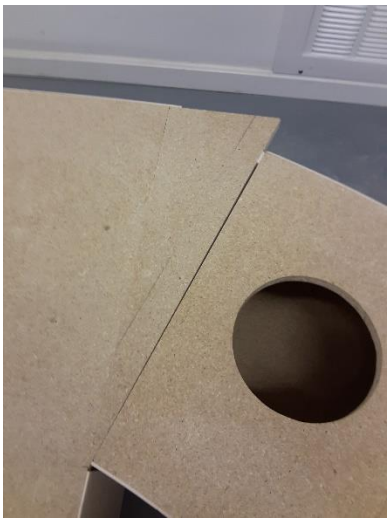




The base is now complete. Just needs some finish sanding and then build the elevations for the overhead straightaway. But first I want to cut out my track surface out of 1/2" MDF board so I can use the scrap MDF to build the elevations.

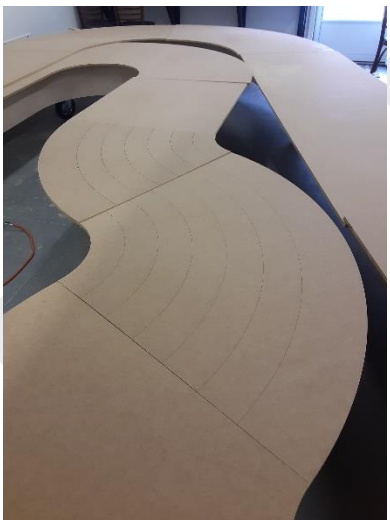
The finished base from the other end.





This is the last joint. It wasn't perfect but I was real happy with how it turned out. It's real hard to cut arcs to the exact degree of turn you want just using a tape measure and straight edge. The 1/4" it's off will be covered by the track surface and not be seen.

The track surface is all rough cut. I still have to cut some straightaways and the turn right before you start down the long top straight to size. I'm going to start fitting things together in the middle of the bottom back section and work my way around each end fitting the straights in as I go.

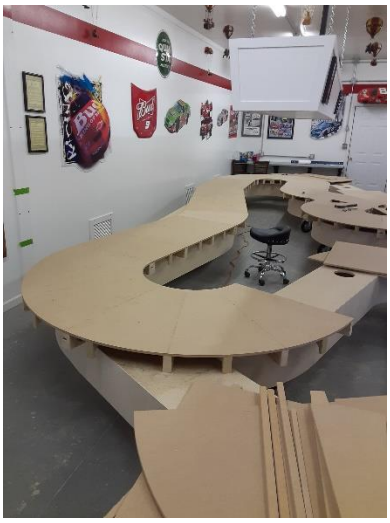


This is a close up of the esses. I have the lanes drawn out and you can see how the turns will have to be connected with a small straight as they the slot goes from left to right and back again because there is less gutter on the inside of the turn than on the outside of the turn. I'm going to use one of flexible strips made to route slots to make the transition. The car should flow very smoothly through the turns.

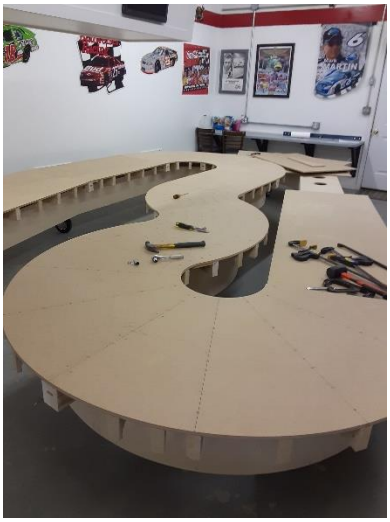
In this picture you can see how far the bottom sections stick out from the top sections. Should make for some good technical racing. This will also make it easier to turn marshal the bottom sections, you won't have to reach as far under the top sections.

This end is connected to the top straightaway and comes downhill two feet as it goes past the drivers stations.

This is a close up of how the track sections will be bolted together. Each joint will have 4 - 3/8" bolts holding it together. There is also a 1/2" thick piece of MDF in a groove to help eliminate any warping of the wood.



I've started attaching the cross-members to the track surface and bolting the sections together. They're all lining up pretty well with the base but not perfect. With the 7" overhang on each side it can be off 2 or 3 inches and it won't be noticeable.



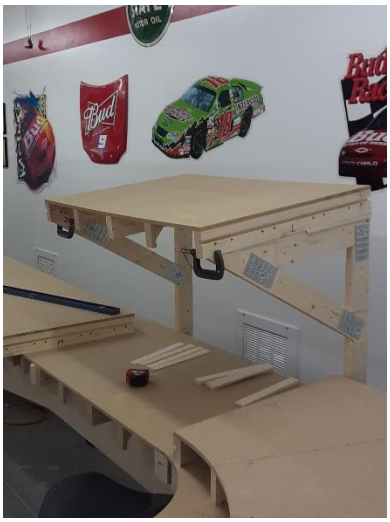
I've been trying to figure out the best way to support the upper straightaway above the lower track. I've finally decided to build 6 supports to rest it.

First thing was to build a jig so they are all the same.

Then I used the plates they use to make trusses to hold them together. They will also have a piece of 1/8" plywood on each side for looks and added support.

I made the first support to tall and had to cut the bottom off. No re-using the plates.

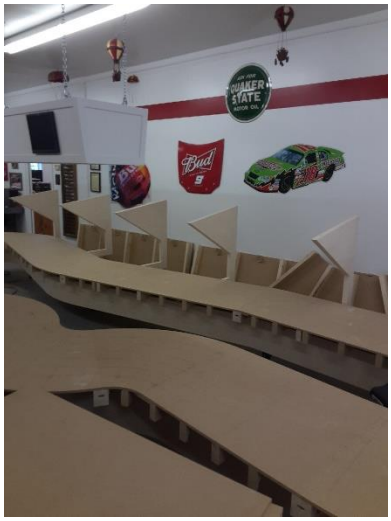
Here's a couple of brackets set in place to see how they work. I thought a 5 1/2 degree slope would be enough but I think it's going to need at least an 8 1/2 degree slope but I'm going to make it 9 degrees. It's going to take a piece 1 3/4" in the back tapered down to nothing in the front to get a 9 degree slope.



Here's a track section set in place to see how it's going to look. I still have to raise the back of it another inch for the 9 degree slope. It's 2' between the lower track surface and the bottom of the upper track crossmembers. I'm not sure if I want to lower or not, I like the room between the layers so you don't have to be a contorsionist to marshal a car. I'll have to see how it all fits together as it comes down the hill past the drivers. If it's to high at that point a couple of drivers won't be able to see their cars after they come out of the esses and make the left hand turn to go under the top straightaway.

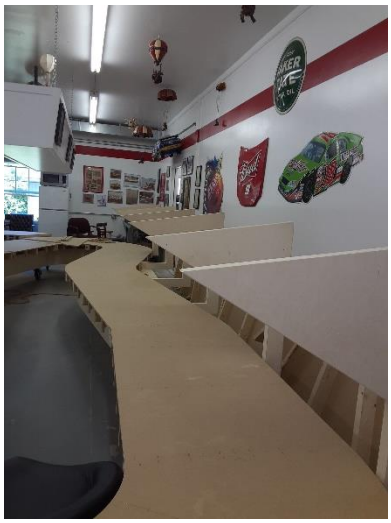
I started covering the brackets with 1/8" baltic birch plywood. I wanted to do them in one piece but it was going to take six 5' x 5' sheets to do it. By doing them in two pieces it only took about 2 1/2 sheets. They just would not inter lock with each other to same material doing it in one piece.

Got all six of them covered, trimmed and sanded.



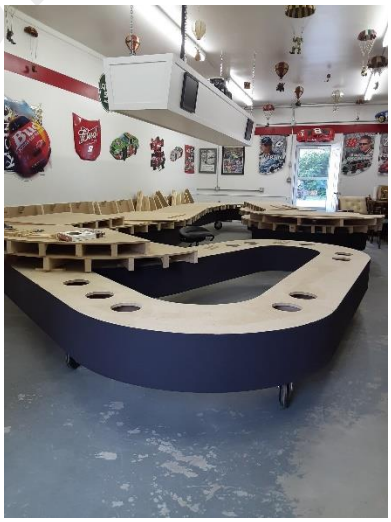

Here they are sitting in place just to see how they look.

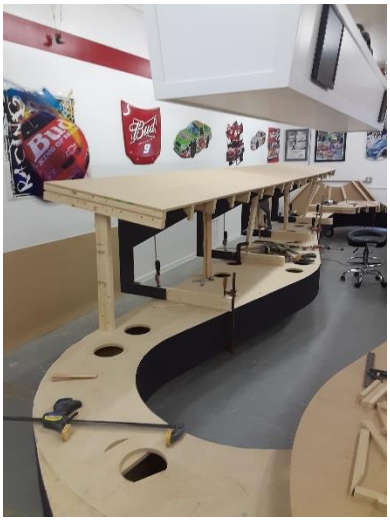
Another view of them lined up.



Got them painted, ready to install. I've decided to go ahead and paint the base next. Should have painted it before I started building the track surface.

Got the base sanded and painted today. Time to set the brackets and start building the elevations to connect the upper level to the lower level.

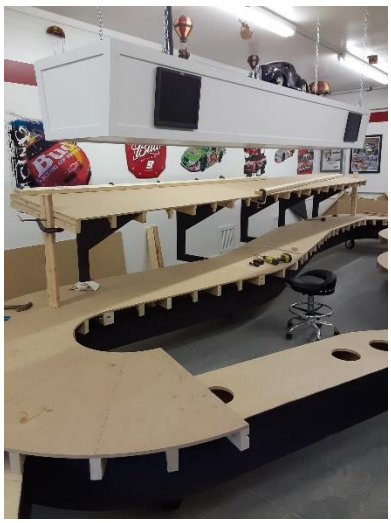


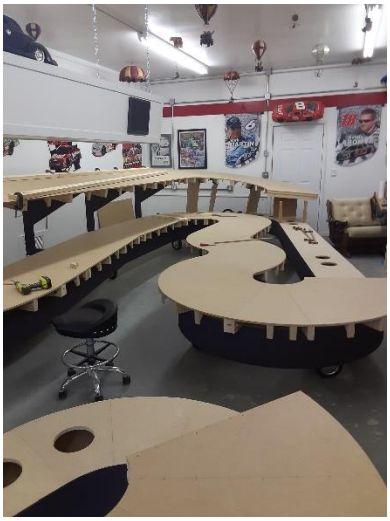


I clamped the uprights to the base and set two sections of the top straightaway on them to see how it looks. I decided it was to high so I repositioned the uprights to sit between the crossmembers of the track sections which lowered the track surface 3 1/4". It looks a lot better and will be easier to build the inclines. It closes down the room to marshal a car but I think because the lower track surface is a 2 feet high it will still be easy to do because you won't have to get on your knees to get under the top track surface.

My problem is, to find out if the uprights are positioned right for the lower track sections to sit in place I need to bolt them down and move the bottom sections back in place. Some of the crossmembers of the bottom sections might (and probably will) be right where the uprights are located which means I'll have to move the bottom sections again, unbolt the uprights and move them. When I move the uprights I'll have to alter the top sections to have a place to bolt them to the uprights. The whole thing is trial and error. This is taking a lot of time and a lot of thought to make sure I get it right. That and the fact that I am a 69 year old fat man with two knee replacements doesn't make for a speedy job. LOL

I got my uprights positioned so the bottom track surface slips between them. I only used five of the six uprights but still have to build more uprights to go up and down the inclines.

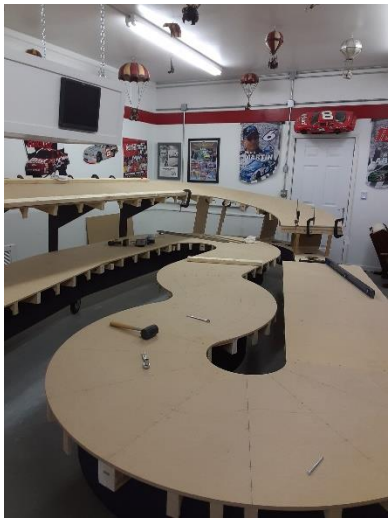


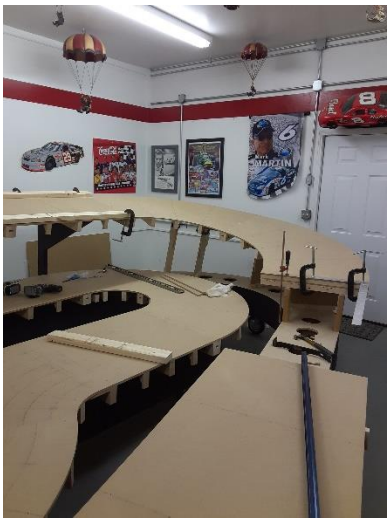


I've been twisting, pulling, pushing, drilling, cutting and adjusting for four days now and I still can't get that damn cap off my glue bottle. LOL

I set the top level of the track on top of the uprights but didn't like how it looked, so I unbolted the lower track sections and moved them out of the way to get access to the bolts holding the uprights in place. I moved the uprights to fit between the crossmember of the upper track sections and bolted them in place and moved the lower track sections back in place. When I tried to adjust them so everything would line up the some of the uprights were in the way of the lower track sections. So I had to unbolt everything and move some of the uprights again. When I got everything in place I bolted the two curved sections to the end of the top straightaway to start building the inclines only to find out I didn't have enough angle on the uprights to make the track come down quick enough as it goes past the drivers stations. If it's not low enough as it goes past the inside lane (yellow lane) the track will block the view of the car when it exits the esse's and enters the lefthand turn to go under the top straightaway. You can see in this picture how high the track surface is as it starts past the drivers stations and how it's going to block the view.

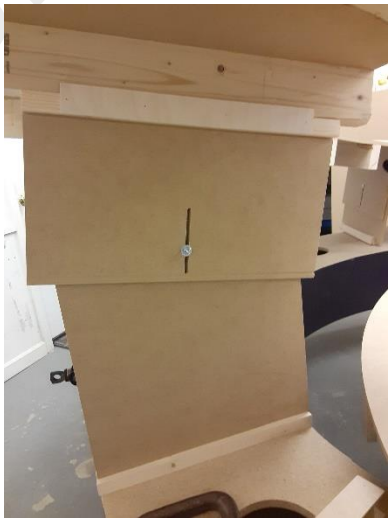
In this picture you can see that the track is now lower as it starts past the drivers. I think I'm still going to have to build the lower track surface up about 3 1/2" all the way through the lefthand turn going under the top straightaway so the yelow car doesn't disappear.

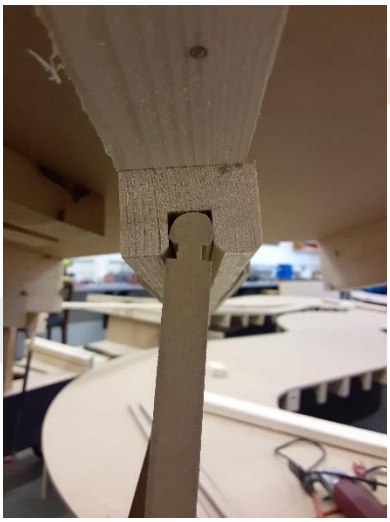




In this picture you can see how far off the straightaway is from connecting to the top straightaway. But after re-adjusting the lower track surfaces which required moving an upright again, which required taking everything apart again I finally got it within an inch of lining up with the top curve. So I'm going to slide the top straightaway down the uprights an inch so everything should line up. I'm still going to have to cut a small pie shaped piece of off the curved section because when I cranked in a little banking to come down the hill it changed the angle at the end of the curved piece.

I've been working on adjustable brackets to support the inclines. Here's what I came up with. It adjusts six ways, as you can see in the picture it rotates left and right, up and down. It caps the crossmember on the track to keep it in place. When all the brackets are adjusted the way I want them I'll use screws into the two sections to hold them in place so they can't get out of adjustment, draw a line straight up from the bottom section of the bracket and cut the top section off so I have a straight piece to nail my 1/8" plywood to to cover the brackets. I know I'm probably confusing you but you'll see what I mean when it's done.





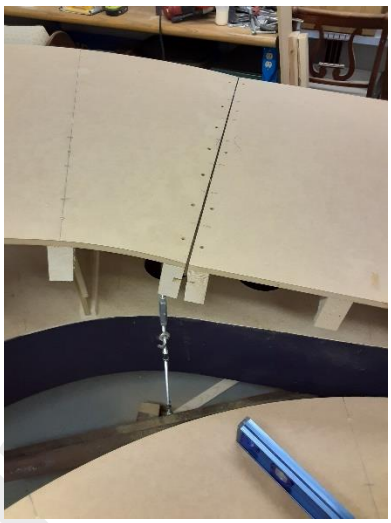
Here's an end view of the adjustable brackets. You can see how the socket allows the top piece of the bracket to rotate and line up with the crossmember of the track as it comes down the incline.

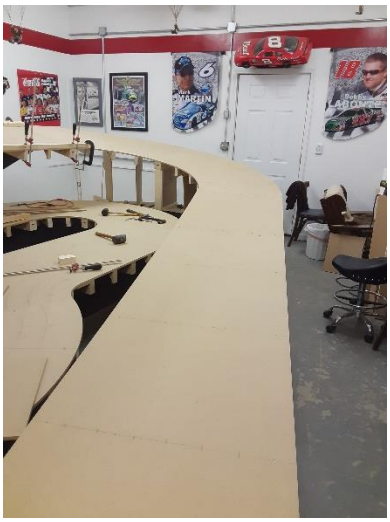
In some of the other pictures it looks like the track has a steep bank coming down the hill. As you can see in this picture it's not a steep bank but it is a positive bank. You won't be able to just floor it down the straightaway and through the turn unless you just want to put your car out of it's misery.

Another picture showings it's not that steep of a bank.

To fit the last section of straightaway connecting the top turn to the straightaway going past the drivers stations I first had to get the clamp holding the inside of the turn out of the way. So used a turnbuckle, all thread and a lot of weight to hold it in place. The circumference of the turn changed when I cranked in positive banking so I had to cut a little over 2" off the end of the curve.

Another view of the joint before I put the bolts in. It all came together very nicely.





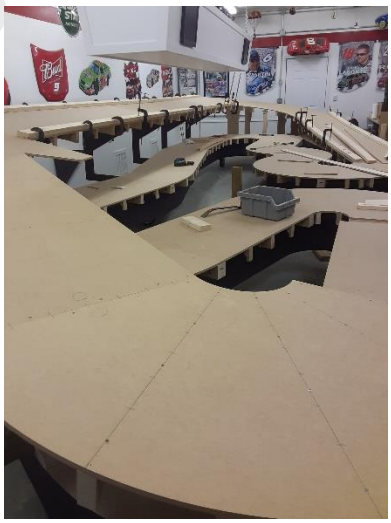
Here's what the straightaway looks like going past the drivers stations. I still have a lot of adjusting to do to make it smooth and then lock all the uprights in place with bolts holding the two pieces of the uprights together.

Here's a view from the top down. You can kind of see the little waves in the track surface that need to be adjusted. The easiest way to do it is clamp a 2x4 to the track surface to straighten it and then adjust the uprights.

I started trying to build my incline on the other end from the bottom up but it wasn't working out very well. So I decided to build from the top down. It was a lot easier to get the angle from the top down because I already had it established in the top straightaway.

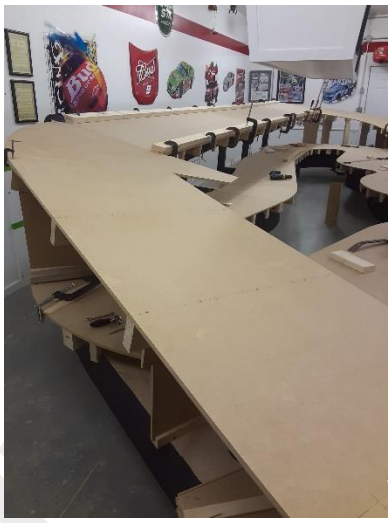
This picture shows the curve at the top of the hill leading onto the straightaway with the straightaway going up the hill. I still have to figure out exactly how long the straightaway going up the hill and the amount of turn I need in the curve. But to figure that out I need to put the other curve at the bottom of the hill going to the straightaway going up the hill and put the straightaway before that onto that curve. Sounds confusing but I think you'll see what I mean by the pictures.

Here's a picture with the curve at the bottom of the hill attached.



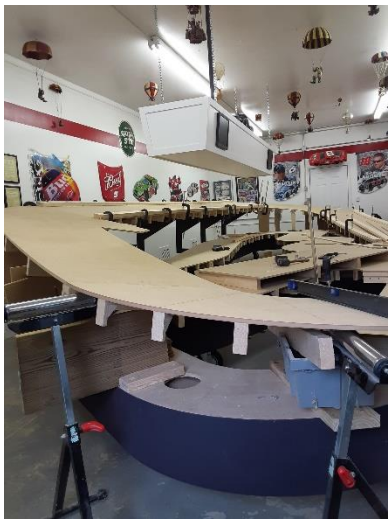
This is the angle of the curved piece at the bottom of the hill. I need to twist the track surface to at least make it level, but to do that the other end of the straightaway going up the hill needs to be fastened down tight. I can't fasten it down tight until I know exactly how long the straightaway has to be and I can't figure that out until I level the track surface in the curve at the bottom of the hill. Kind of a catch 22. I've taken out some of the crossmembers in the curve to make it easier to bend but I still need to figure out a way to hold it in place after I bend it. On the other end I used a turnbuckle, all thread and a lot of weight but it's all still holding the other end in place. I will eventually figure it out but if anyone has any idea's I'm listening.

Just another view of the track surface going up the hill and tying into the top straightaway.



I took the center crossmember off of the bottom turn and was able to bend it where I want it. It looks like it's going work great, I just need to hold things in place while I cut the curves and the straightaways to fit right.

Another view of the track surface going up the hill.

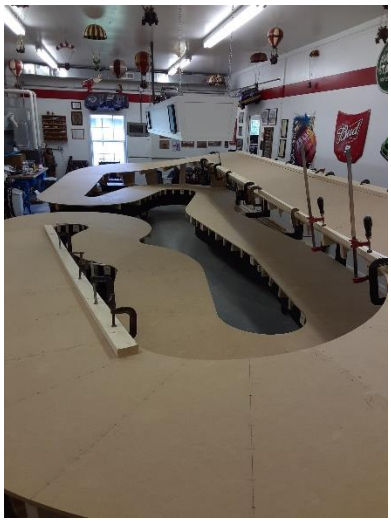


I wanted to give my track a touch of class so I decided to use the Slot Car Corner driver station kits with colored panels station instead of just painting on the panels and trying to source my own components. These driver stations are way more than just a touch of class, they are pure class. The kits I chose came with the three alligator clip post's, an XLR jack, a reversing switch if you want to run your car the other direction, auto-reset circuit protection, heavy duty terminal blocks for easy wiring, all the electric connectors needed, a cut-out template for easy installation and detailed instructions. Everything in this kit is professional looking and quality. I highly recommend them, they are worth the money.

Even though you can use the provided mounting template and just screw the drivers station panels to the top of the shelf, I'm going to make a template and see if I can route out a recess to make the top surface of the panels flush with the surface of the shelf/wood. I'll post a picture if and when I succeed or fail.

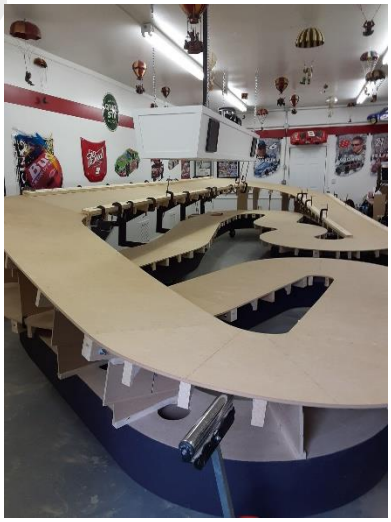
**** NOTE: Use this link for more information about Slot Car Corner driver station kits.**

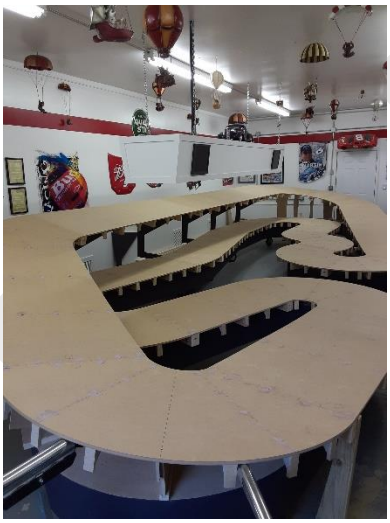
All the sections are now in place and bolted together. Still have a lot of adjusting to do to make sure there is no negative banking anywhere and adjusting the uprights for a smooth flow. Still have some more uprights to make and some temporary uprights to remove. My next steps are to Bondo all the screw heads and nails, sand the Bondo and the joints smooth, route the slots in, adjust the uprights and then put the siderails on.



A closer view.

A view from the other end.





All the Bondo work is done. I had to take the 2x4's and C clamps off to get to some of the screw holes. Next step is to sand the Bondo and joints and then route the slots.

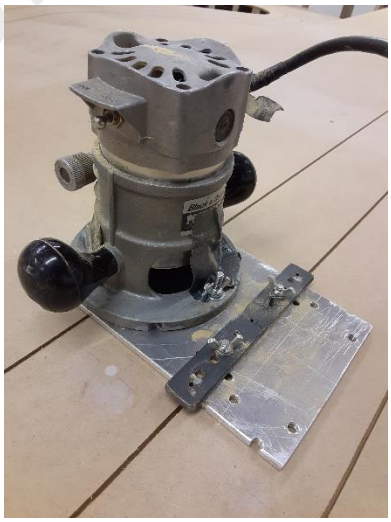
View from the other end.

This is my base plate and router to route the outside lane. It's set for a 6" gutter between the slot and the wall. You can see the ball bearings that follow the outer edge.

Since the inside gutter is only 4” wide you can’t just run the router all the way around the track when going from right-hand turns to left-hand turns. The first thing I had to do was locate my tangent points which was easy to do using a CAD system to make the drawings. I then screwed an 1/8” piece of plywood to the inside edge of all the left-hand turns for a guide. I then bolted a plexiglas plate to my router base as a spacer to keep the proper distance from the inside edge. I then routed from tangent point to tangent point in all the turns. Using a straight edge I connected my tangent points from right-hand turns to my left-hand turns.

In this picture you can see where I marked my tangent points and connected the left and right hand turns with short straights.

After I got the first lane routed, I set my router up with two pins, 4" from the router bit that follow the first slot to route the second slot. Then use that slot to route the third slot and so on until all six slots are routed. My wife stays right with me with the shop vac to help keep the dust down. You can how I duct taped the router base so all the dust exits at one point.

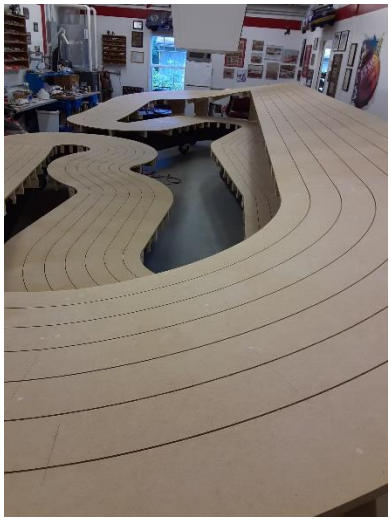


Here's the bottom of my router base. You can see the two pins that follow the slot.

Three slots routed, three to go.

I taped a Shop Vac hose to my router and my wife followed me around the track guiding it. It didn't take the sawdust out to the slot but sure did eliminate a lot of dust in the air.

All six slots are routed, next step is to route the recess for the braid.



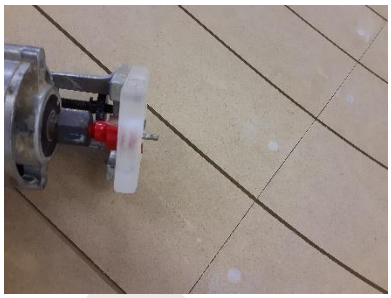
Through the esses.

From the other end.

I found a piece of 1/2" thick Plexiglas to make my router base out of. It's 2 1/4" square so it shoud ride pretty flat on the track surface so the recess is uniform in depth. I'm trying for about a .007" recess of the braid. I don't want anything more than a .010" and nothing shallower than .005". If your router base is too wide it will lift the router bit going around a banked turn and you'll end up with uneven braid depth and even braid sticking up above the track surface.

**** NOTE: Use this link for more information about the Special Router Bit used to route the braid recesses.**

Here's how deep the bit is set for the recess. Taking in the thickness of the braid and the transfer tape I should have about a .007" deep braid.



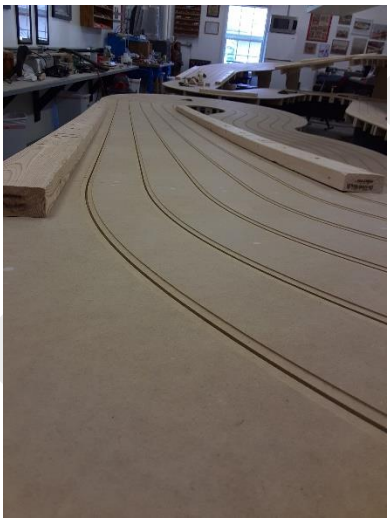
I taped a Shop Vac hose to the router. It worked great, no dust and the edges of the recesses were clean. This picture is exactly how they turned out, didn't even have to brush or vacuum the dust when finished.

The recesses in all six lanes are done. Here's coming down the hill past the drivers stations then into the esses.

The lower level. I really pleased with the way it turned out.

I've got the track surface leveled and banked the way I want it and locked in with 2x4's screwed to the track surface. Next step is to make two permanent uprights out of 2x4's, one on each end of the top straightaway like the five black one's. Then I'll put the side rails on. This is a picture going up the hill to the lead-on.

This is looking down the top straightaway.

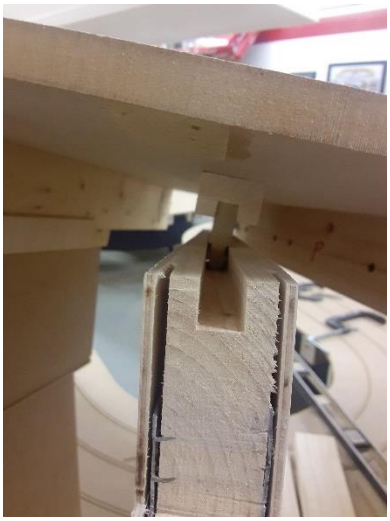


Looking down the hill past the drivers stations.

To put the siderails on the upper straightaway I first had to cut off the part of the upright sticking out behind the track surface. It was a real problem figuring out how to cut it. There's nails and metal plates you have to cut through plus getting a saw into some of the area's was impossible.

What I had to do was cut the excess off with my oscillating tool. It has a thin flat blade that vibrates real fast and will cut wood and metal. As you can see in the picture I had to go through nails, metal plates and wood and cut small pieces out at a time. It took awhile but they're done.

All five of them are cut. Next step is to sand and paint the raw wood.



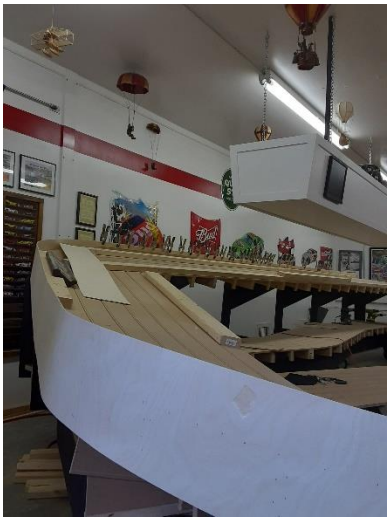
Before I can put the siderails on I have to make exposed permanant uprights that slant two ways. They are a combination of the black uprights holding the upper straightaway up and the two piece adjustable uprights that will be covered with 1/8" plywood.

This is kind of a side view. I'm going to make the top piece longer, I just put this one in to see how it would work.

I'm making an upright to match the black one's but it's basically cosmetic to cover the end of the supports. When I cover the adjustable supports going up and down the incline with 1/8" plywood the way the bottom level and the top level come together it's hard to make it look right. If I don't get it right it will look like Sawtelle did it.

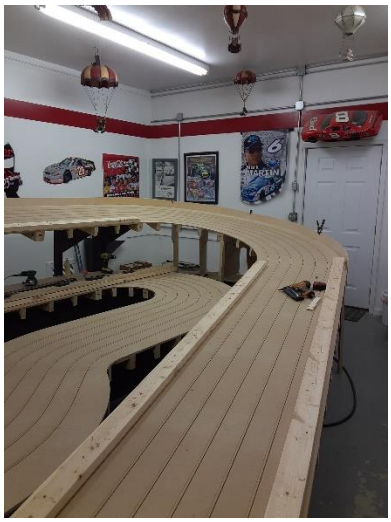
If it seems like I've slowed down on the track it's because I have. I've been fighting a case of Plantar Fasciitis in my left heal and sometimes I couldn't hardly walk. I switched shoes and it's getting better, still hurts but not as much.

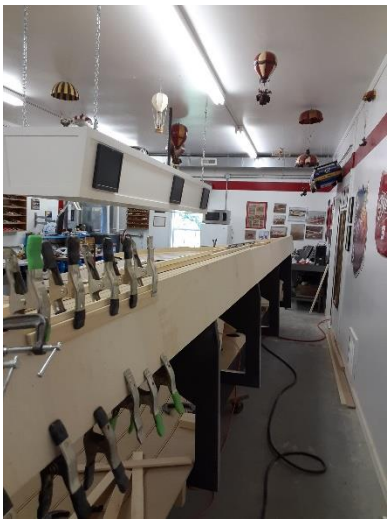
All the fixed uprights are done and installed. I've started the side walls on back side of the straightaway on the upper deck. The side walls are going to be two layers of 1/8" baltic birch plywood. It makes a thin wall but very strong.



The wall going up the hill.

The wall coming down the hill toward the drivers stations.





Gluing on the second layer of 1/8" plywood. I use brads to nail in place and clamps to hold it tight until the glue sets-up.

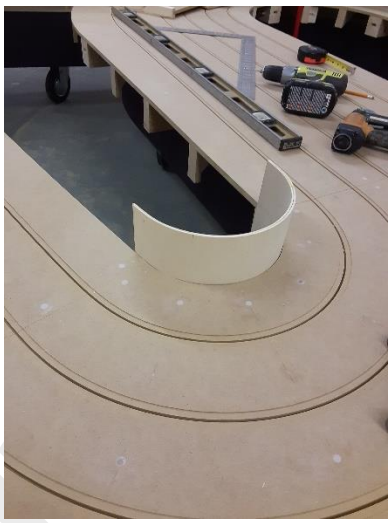
I need more clamps. Lol

I've been making progress on the track. All the siderails that have been installed have the second layer on them. Even though I'm using two layers of 1/8" plywood for the siderails I was having difficulty bending the plywood in a 14" radius turn so I knew the 5" and 8" radius turns wouldn't be possible without prefabricating the turn. So I took my router on the arm I used to cut the radius'd track sections out and used 2x12's to make a mold to fabricate the turns. Here's a picture of how I made the 8" radius mold.

Since the router bit made a 1/4" wide cut and I'm using two layers of 1/8" plywood glued together for the siderails the mold worked perfectly. Here's one all glued up.

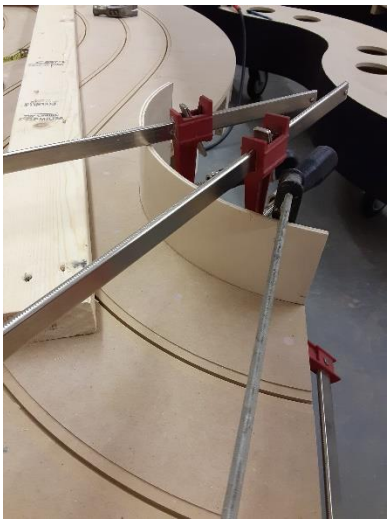

Here's what the turns look like after they come out of the mold.

This is the 5" radius turn just sitting in place. It hasn't been trimmed, glued or nailed down. I'm real happy with how they turned out.



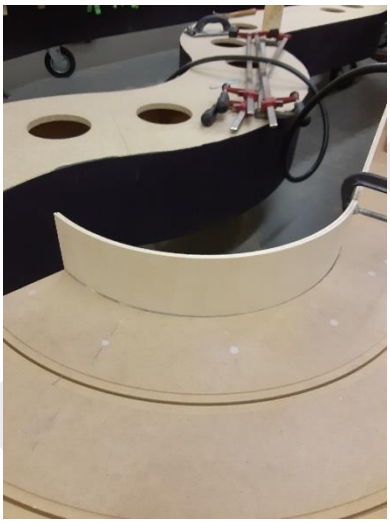
I had to remove these sections of the track to get access to the inside of the straightaway coming down the hill to install the side rails.

These are the sections of track (the esses) I took out to get access to the straightaway coming down the hill. I'll install the siderails on the inside of them before putting them back in place.



When I preformed the curves I kinda figured they would flatten out a little when taken out of the mold and not fit perfect. I thought about makjing the mold about 1/4" smaller than the curve itself but since the holes were already in the bar that I used to route the track sections I decided to try them and see how well they worked. The 5" radius worked great but the 8" radius and the 14" radius sidewalls did flatten out a little. It took a number of bar clamps but they did pull in and should work fine. The two layers of 1/8" baltic birch plywood glued together are extremely rigid.

I've got about half the sidewalls on. All of them have the second layer on them.



Here's the other side on how it turned out.

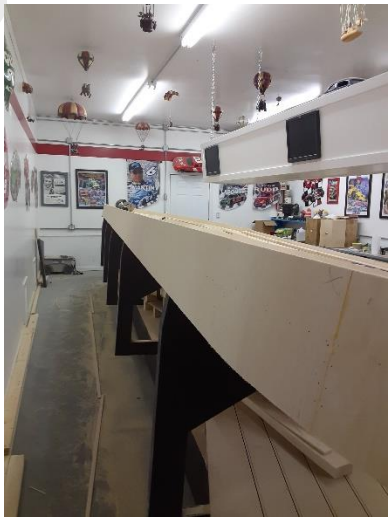
Getting bar clamps to hold the curved siderails in place is kind of a pain so I used the Steve Ogilvie drywall screw clamps. They worked great.

I started trimming the sidewalls. I'm using my router with a six inch wide base. Using a quarter inch router bit it leaves a 2 7/8" high sidewall. A lot of the sidewalls will be cut down lower but I have to keep a uniform height so I can cut the bottom of the sidewalls with a router and keep all of them the same.

To trim the bottom edge of the side walls, I mounted my router on an aluminum base with two pegs that will ride on the top of the side walls. The spacing between the bottom of the pegs and the inside of the router bit is 7".

Using the top of the sidewall as my guide it cuts the bottom even all the way around. This is why I had to leave my sidewalls at least 3" above the track surface when I put them on even though a lot of them will be cut down lower later.

Here's how the sidewall on the back of the top straightaway turned out. I've been making a lot of progress with the sidewalls. Next I'm going to fasten the adjustable uprights in place and cover them before I put the section I took out back in. Otherwise I'm going to have a hard time doing it.



I've been adjusting and locking in the adjustable uprights. I'm using 1/4" bolts to make sure they don't slip. Then I'm adding nailing strips to the edges so I have something to fasten the 1/8" skirting to. I was going to glue and nail the skirting and make the inclines solid units but I think the best way to do it so the track can be disassembled is to just screw the 1/8" plywood to the uprights using drywall screws and finish washers.

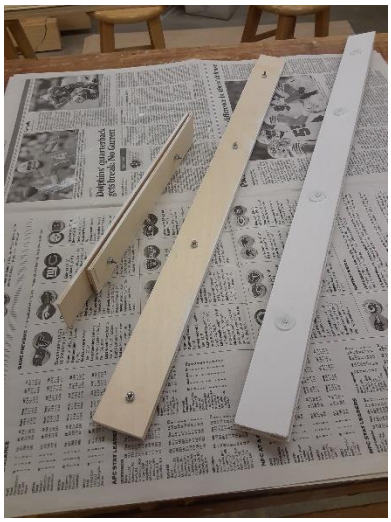
Here's some of the uprights that have been adjusted, locked in and screwed in place. The sidewalls haven't been trimmed in this area yet.

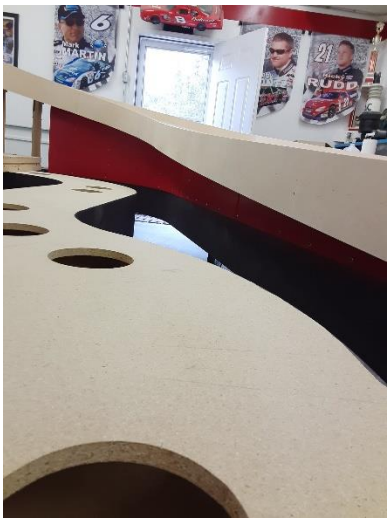
The other side of the uprights. You can see they are fastened in place with screws top and bottom.

All the uprights are in place. Here's looking up the hill leading onto the top straightaway.

This is looking down the hill past the drivers stations.

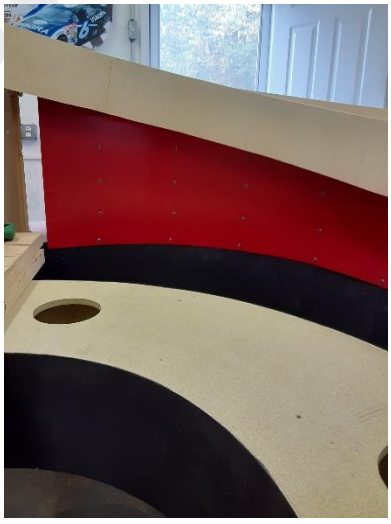
I'm not breaking the skirt panels on an upright, I'm using these strips to break them between the uprights. It makes it easier and is working out well. I can adjust a panel up or down and not worring about a gap showing in a seam.





This is how the skirting is going to look. This is coming down the hill past the drivers. I had to put the skirting in before I put the section of track back in or I wouldn't have been able to get to it.

This is more of a close up. I'm using drywall screws with finish washers to hold them in place. Not sure yet if I'm going to paint the finish washers and drywall screws. I think they would look better painted red but the wife likes them the way they are. I've got a lot more of the sidewalls finished. Still have the bottom part under the top straightaway to do. Then I'm going to make the drivers stations.



I've started trimming the inside sidewalls where need be to see your car. My sabre saw on edge makes the wall 1 1/4" high. In some area's it will need to be cut shorter than that so I'm going to have to draw a line and free hand it. I've got about four boo boo's where the blade twisted and started running off line. None of them so bad I can't just use wood filler to fix them.

I built my drivers stations. They are 6" deep, 4" tall and 24" long. I recessed the area that the Slot Car Corner color coded driver station panels will sit in.

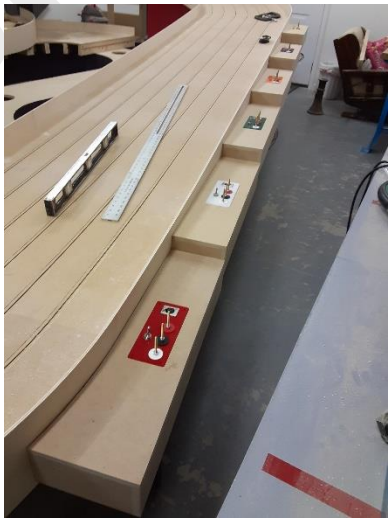
Here's a picture of how they fit. When screwed down they will be perfectly flat with the top of the SCC drivers stations.

** **Note:** Use this link for more information about Slot Car Corner Driver Station Kits.

Bottom view of a drivers station. I stuck a piece of 2x4 on each end where they will all be screwed together for some extra support. MDF board is rather soft.

Here's all six of the drivers stations just clamped on to see how they fit. The one closest to you in the picture had to be built after the other five were in place because it extends into the corner.

I dropped the colored panels in place to see how they look. "Look Great".



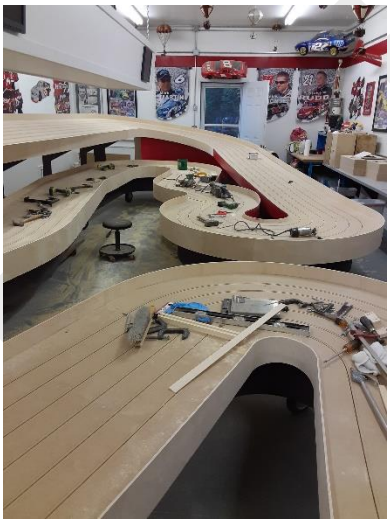
On a commercial eight lane track the lane colors left to right are Red, White, Green, Orange, Blue, Yellow, Purple and Black. I'm using the first six and not purple and black. Also the outside lane is usually Red but in my case the inside lane will be Red. So outside to inside lane colors will be Yellow, Blue, Orange, Green, White and Red. The reason for this is if the inside lane were Yellow and the Yellow driver station was on the far right the car would disappear from the drivers view after it came out of the esse's and started into the left hand turn. So I had a choice, change the colors of the lanes or change the positions of the drivers. I figured it would be less confusing to drivers that are used to racing on commercial tracks to change lane colors and not the order of the driver stations.

A little closer view of how they look. These Slot Car Corner driver station panels are going to make wiring the track much easier. Wish I had come up with it. I hate it when Sawtelle bests me. Lol

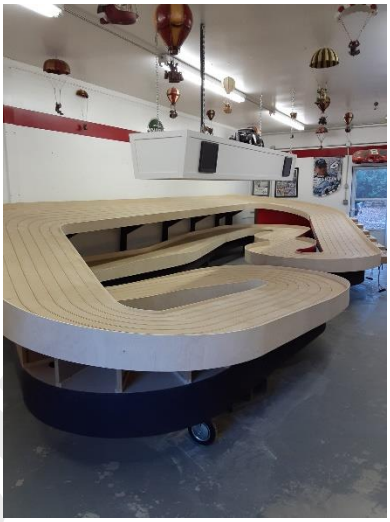
** **Note:** Use this link for more information about Slot Car Corner Driver Station Kits.

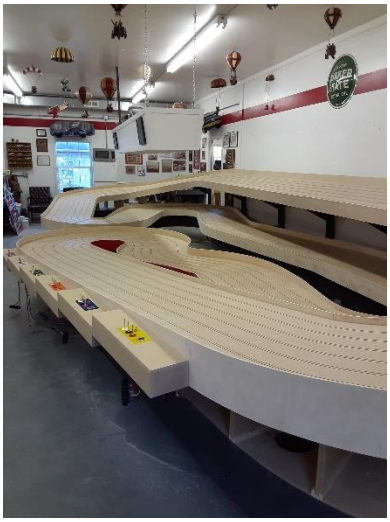
Here you can see how the driver stations step down as they go down the hill.

All the sidewalls have been completed. I trimmed the tops of all the walls at the 2 7/8" high and used that to trim the bottoms. I still have some walls on the inside of some turns that need to be trimmed so the driver can see his car. There's still some wood filling to do and then sand everything. Then it's clean-up time before I do any painting. It's starting to look like a slot car track.



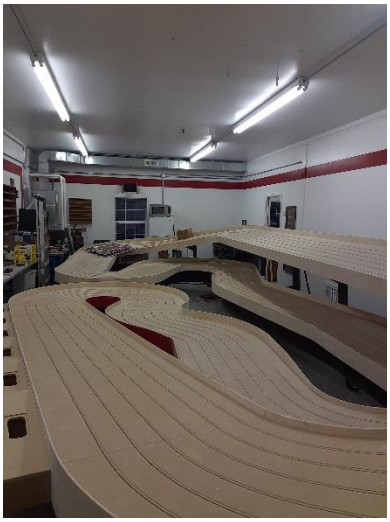
All the sidewalls have been trimmed but some sanding is still needed. I got anxious and wanted to see how it was going to look sitting in place. So I cleaned all the tools and scrap wood off the surface, pushed it in place and clamped the drivers stations back on. Everything fit just as I had hoped it would. It looks bigger in real life than it does in the pictures.



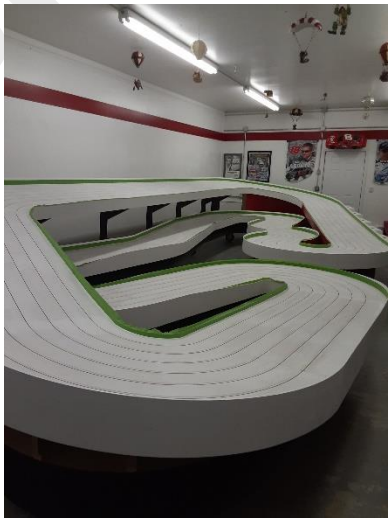


Picture from the other end. It looks larger from this end, still room for everyone to get around it but it does fill the room.

All the sidewalls have been trimmed and the track has been sanded and basically ready to paint. With my wifes help we took down all the stuff hanging from the ceiling including the big white thing and all the pictures and signs on the walls. We've been wiping down everything including the ceiling. I've also been patching a bunch of nail and screw holes on the walls. There's a few area's that need to be repainted. When we get everything cleaned up we'll put everything back together so it's out of the way before we start painting the track.



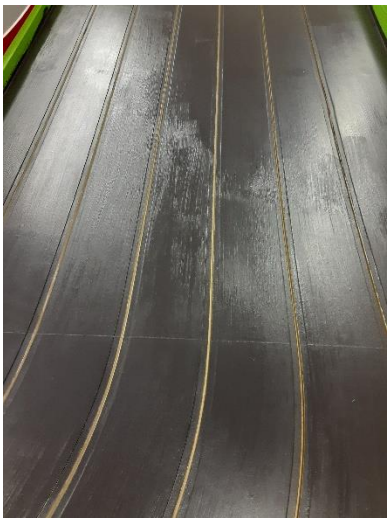
The track has been primed. I used Floetrol to thin the paint which worked really well. I also used a dense foam rubber roller like Sawtelle recommended, I hate it when he's right about something. I've also got two rubber sanding blocks to lightly sand the surface before I apply the finish coat. I'm going to paint the inside of the sidewalls first, then tape them top and bottom before I paint the track surface semi-gloss black and the outside of the sidewalls red.



The track has been lightly sanded and the inside sidewalls have been painted two coats of gloss white. I've got it taped off with Frog Tape and ready to paint the track surface Semi-Gloss black. I've decided to not paint the outside of the sidewalls red until all the braiding, lane striping and wiring are done, that way I won't be rubbing up against the red paint while doing it.

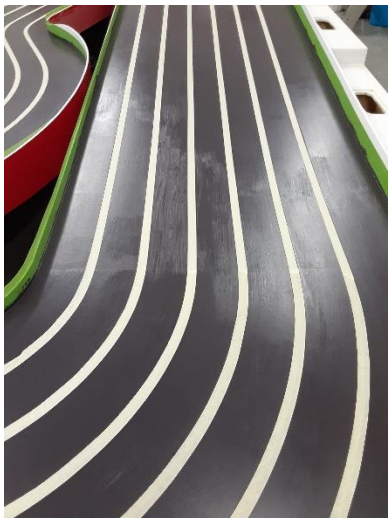
These are the flexible rubber strips I put in the slots when I paint to keep the paint out of the slots. They are .118" thick so they slide in and out nice and easy but don't let much paint into the slot. They are 3/4" wide, about 10' long and you can see that not much paint is on the part in the slot.

Here they are in the slot. When I'm done they'll all be semi-gloss black.



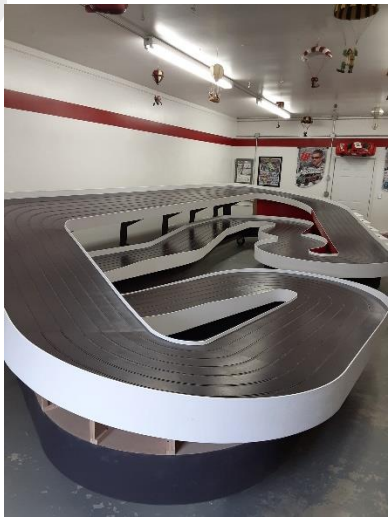
We put the second coat of black on but didn't like how it turned out, going to need a third. We tried the foam roller which does a good job but I didn't like the texture. So we just ended up brushing the second coat on and this is how it turned out. Not Good.

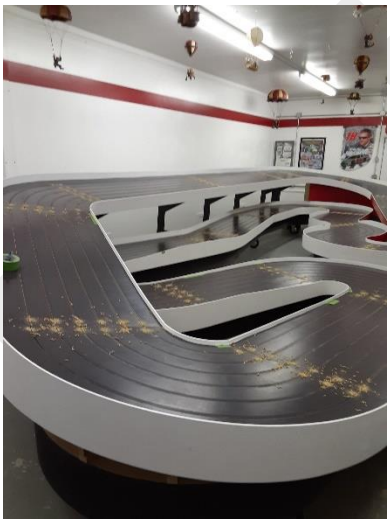
We taped all the recess's with 3/4" masking tape so we wouldn't have to use the rubber strips again and wouldn't get paint in the slots. Then we used 4" rollers with a 1/4" nap to apply a third coat of black paint. It looks much better. We started with the inside gutter lane and the wife and I went opposite directions so we wouldn't have starting and stopping marks in the paint as it dries. Worked real good. We did the gutter lane and then moved to the area between the inside lane and the second lane and did the same thing until all the surface was painted. I didn't take a picture when we finished because the paint wasn't dry, I'll take one later this morning when I get to the shop.



This is the whole track with all the recess's taped. It took 675' of tape.

I removed all the tape and it's not bad but not near as good as I had hoped. Where the black surface meets the white sidewalls it's not real straight, kind of goes up and down a little. The black surface is not as good as I had hoped either, but I've got to keep in mind it's just a slot car track. I caulked the edge where the sidewall meets the track surface with acrylic latex caulking before I painted it but I might try to re-caulk it with gloss white silicone caulking just to make it look better. It might actually make it look worse. I'll try it on the lower inside of the top straightaway where no one will ever see it and see how it turns out.





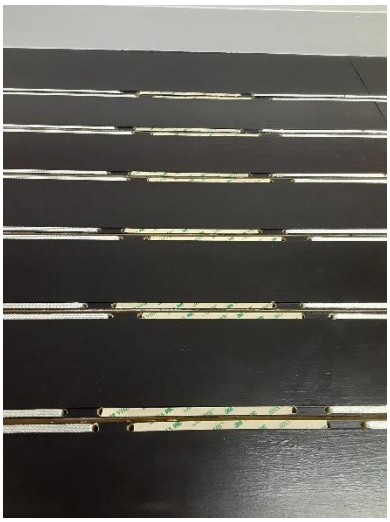
I've got all my holes drilled to braid the track.

I've got two sections braided. I had four rolls of 3M transfer tape leftover from another track a couple of years ago so I ordered half my braid from Slot Car Corner bare and half pre-taped. I'm using the bare tape on the straightaways and using the pre-taped on the turns. The pre-taped braid makes it way easier to install. If I ever build another track that is all I will use, it's worth the money. The Slot Car Corner roller that you see in the picture is really nice and worth the money too.

** **Note:** Use this link for more information about Slot Car Corner Pre-taped Track Braid and Braid Roller.

All the braiding is done except for the lap counter strips, I'm not sure how I want to do them yet. Next step is color coding the lanes. I was going to make the outside lane yellow going past the drivers stations so I could keep my drivers stations in the same order as an eight lane commercial track and the drivers could still see theirs cars everywhere. But I decided to make the outside lane red and reverse the drivers stations. So the drivers stations will be from left to right, Yellow, Blue, Orange, Green, White and Red. The lane colors will be from outside to inside past the drivers stations, Red, White, Green, Orange, Blue and Yellow.

View from the other end.



These are my dead-strips for the lap counter. I leave a long space between the dead-strips and the track braid and stagger then so both sides of the power from the track can't get to the lap counter strips at the same time and I stagger them to keep the guide flag from falling into the gain separating the dead-strips from the track braid.

I have always made a complete loop with the lap counter braid and fastened the two ends together on the bottom. Does anyone know if I need to do that or if it will still work if I just make a strip on top and fasten the wire from the lap counter to one end on the bottom?

All the lane striping is done. Next step is to paint the outside of the walls red, then make all my connections on the bottom, wire it, install the lap counter and then put the 1/8" plywood skirting on to cover the inclines.

The lead-on and looking down the top straightaway.

We've got two coats of red paint on the sidewalls, this is how it looked with just one coat. The second coat really helped a lot but it will still need a third coat. But it doesn't matter how many coats we put on it, it will never look good until we take that awful looking "cloverleaf" green tape off. It looks like something you'd see in Michigan. I can't imagine going out to my raceway every morning and having to look at that gaudy green color (inside joke). lol

From the other end.

The track has three coats of red on the sidewalls. I'm not happy with how it turned out, I'll probably touch it up after I get everything else done and the track running. It doesn't have a good crisp line between the white and the red. I dropped the drivers station panels in place just to see how they look against the red and I think they look real good.

From the other end.

I'm using Slot Car Corner's heavy duty terminal blocks for my taps. They come with a card that you place under the terminal block that tells you the lane number and which screw you hook your wire and braid drops to. It's so simple even Mike Stott could do it and he's from Michigan. lol I want to wire the track so it will be real easy to drop the whole wiring harness off of it if you have to disassemble and move the track and then place the wires back under the labeled screws and you're done. These blocks along with the Slot Car Corner drivers panels will make it easy to do.

** **Note:** Use this link for more information about Slot Car Corner Wood Track Wiring Kits.

A close up of the cards, they're even pre-punched where the mounting screws go.

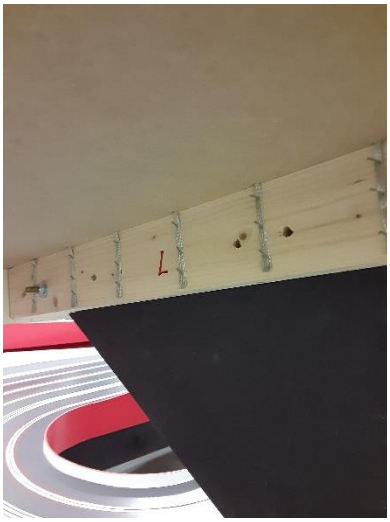
This is what my drops for my taps look like. I crimped a collar on the braids to hold them tight to the track and to make sure I had good contact, then slid another one on at the end just to keep the braid straight rather than cut them off.

This is one of my taps. They are all labeled with the cards that come with the tap kits from Slot Car Corner. I've looped all the negative sides together so I can use just one wire instead of six wires for the negative side. An 8ga. wire will carry plenty of current for all six lanes with the motors we'll be running. I'll use six 12ga. color coded wires for the positive side, I could use 14ga. but I already had the 12ga. wire.

** **Note:** Use this link for more information about Slot Car Corner Wood Track Wiring Kits.

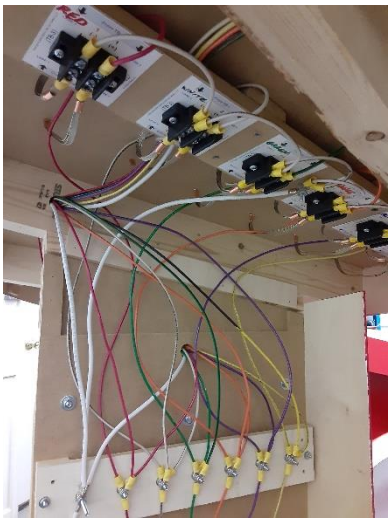
This is a close-up showing the bolt in the center of the tap that the 8ga. wire will fasten too.

This is one of the taps mounted to the track and hooked up to the braid. All I have to do now is run the six color coded wires and the negative wire to it. There's going to be three taps so two more to go.



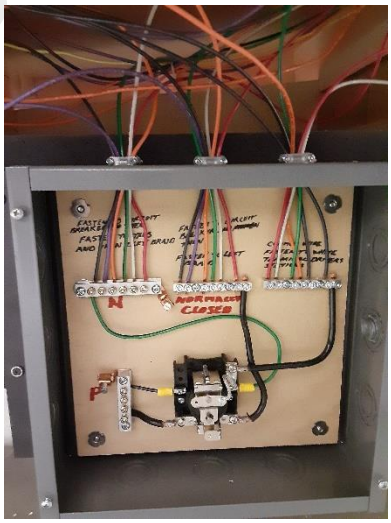
This is how I'm making my braid connections at each joint. I use to put a wire nut on each one but this time I made the holes the braid drops through right next to the 2x4 crossmember so all I have to do is staple it to the crossmember.

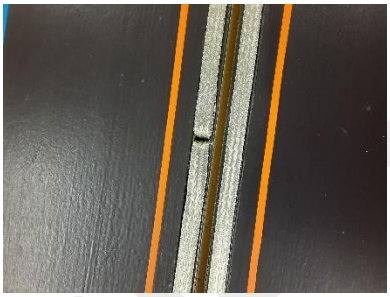
This is how I made my connections for the lap counter. The two strips in the middle of each lane are the lap counter strips and the braid going around the outside of the two strips is the continuence of the circuit on each side of each lane. Now all I have to do is place the lap counter wires under the phillips head screws on the lap counter strips and it's connected.



I've got most of my wiring done. This is the distribution panel for the three taps/drops. I still have to make the final connections to one of the taps/drops and staple the braids at the joints to the crossmembers. Then build a shelf for my power pack to sit on and run the wires to the electrical panel. I've probably crimped at least 250 connectors. My hands are sore, my arms ache and my knees are weak from getting up and down off the floor. I use to think slot car racing was fun but I'm going to have to rethink that. Lol

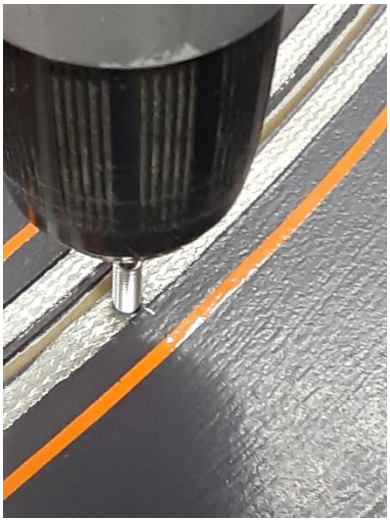
This is the electrical panel that sits below the drivers stations. The only thing left to do to it is run the wires in from the power pack and put the cover on. The green wire will be taken out when I put the lap counter on. The lap counter will make the connection to the coil to turn the track on and off.



I'm trying a new product that Slot Car Corner is considering marketing. It's a connector for copper braid at the joints to make sure you have maximum contact and to make sure the braid stays down. They also make it much easier to make the connection since you are working from the top and don't have to crawl under the track to make the connections. They are 1/2" long grub screws sized to work with Slot Car Corner braid in a 7/32" hole. I've done some experimenting with them before trying them on my track and I've found that they have great holding power, they don't cut the braid and you can take them in and out a number of times and they still hold. I also found out that if you lubricate them before installing them they screw in much easier and don't twist the braid at all. I used the braid cleaner/conditioner that I use on my slot cars, one drop does the job. Here's what the joint looks like before installing the connector.

I start by using a center punch with a point on it to open up the hole.



Then I use my drill with an allen driver to screw it in place. I use a little pressure to make sure the braid is pushed down tight and the threads get a good bite from the start. Don't forget to lubricate the threads.

Here's what they look like when installed.

I framed up my monitor housing. It will hold four monitors, three for the drivers and one for the race director. It hangs over the track about 4' from the drivers and 6 1/2' from the floor. The monitors will be angled down so they are easier to see.

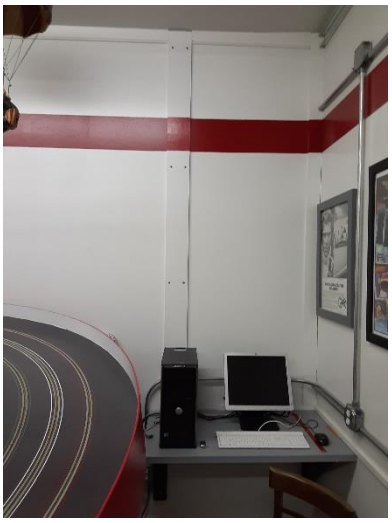
I built a table in the corner for the computer, monitor, keyboard and mouse. I was going to build a compartment right on the track for the computer but decided this would work better. I've cut a chase into the wall so I can run my electric and monitor cable into the attic and down into the monitor housing in front of the drivers. I'll cover the chase with a 1 x 6 board painted to match the wall. If it seems like I'm moving a little slow it's because I've been playing on the track. Lol

The overhead monitor unit has been hung and looks like it's going to work well. I still have some wiring to clean up and install air vents on the back. I don't know if monitors need air vents but I'm putting them in anyway. There are three monitors for the drivers and one for the race director. The race director's stand will be coming out of the large turn just to the right of the drivers stations.

I've got the vents on the back side of the monitor unit. Not sure I needed them but just in case.

I used 1/8" thick plywood skirting on the inclines. Here's the one coming downhill hiding the wiring before it was capped and painted.

Here it is capped and painted. The round hole is for access to the electrical switch.

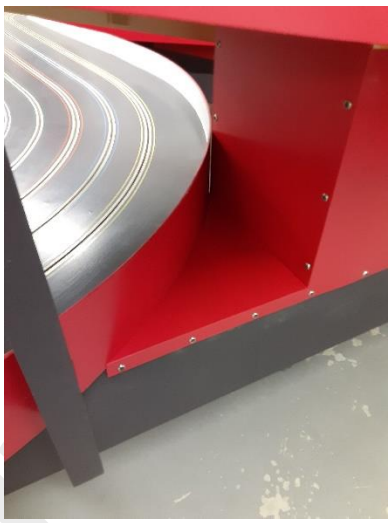


The chase has been capped and painted to match the wall. I'm going to build a small shelf on drawer slides where the race director sits to put the keyboard and mouse on when we're racing. That fifth monitor on the table sometimes messes up the four monitors over the track. I think the signal is just not strong enough for all of them.

All the inclines on both ends are covered and painted. That's the power pack under the red lane driver station.

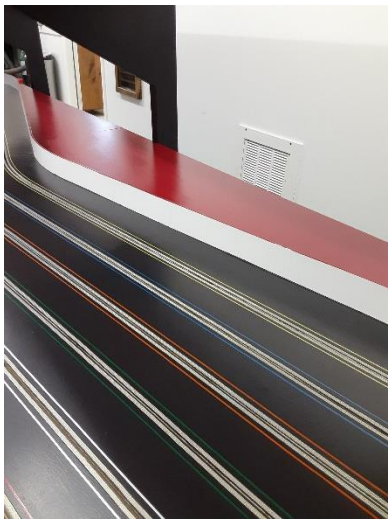
View from the other end. I've still got a little trim work to do and a lot of cleaning to do.

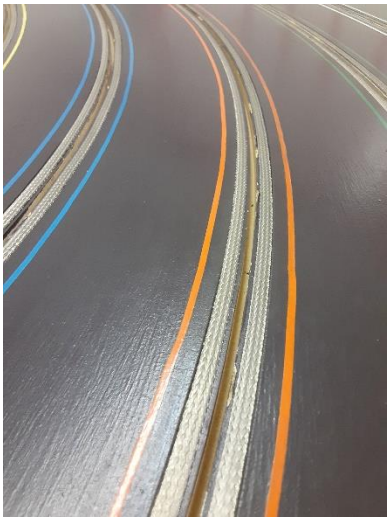
The detail work on the incline going up the hill is finished.



The race directors stand is built and has a place for a keyboard and mouse. I'm not sure if I'm going to like it or not, I can always make a new one if I don't. But at least I can see the monitors over the track so I can program a race from the stand and don't need the monitor at the table to program a race.

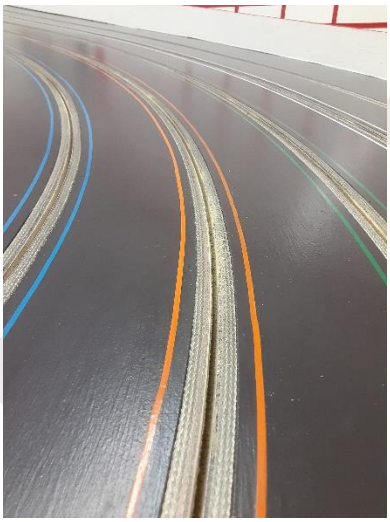
I covered the area behind the lower level and painted it red. Later on I might put some scenery in there. Maybe cut an opening in the sidewall to make it look like an entrance to a pit area but before I do that I want to make sure I don't cut an opening where the cars smack the wall. I'll get Tuner 28 (Bob) to run some more laps on the track, he smacks the wall a lot. Just kidding Bob. Lol





I've been having a problem with chipping on the top of the slots in the curves. When you use silicone tires the little particles and dust really affect the traction. You can see what it's doing in this picture. Mike at Cloverleaf said to just sand the top edge of the slots and it solves the problem.

I used a small piece of wood 3/4" x 3/4" about 3" long and wrapped 120 grit sandpaper around it and stuck the corner down into the slot and sanded the edge on both sides at the same time.



Here's what it looks like when I got done. Much better, problem solved.


My new scoreboard. This is where we keep track of track records for each class of cars we run on each lane. When someone breaks a record we record it so eveyone else knows what a good lap on that lane for that class of car is. I know all the track records will be broken as the track gets run in, it's already a lot faster than when I first built it. As you can see we haven't filled in all the records for each class on each lane yet.

The lower half of the scoreboard is where we'll keep track of laps for an endurance race. We can record total laps for each round for each team so each team will know where they stand as the race progresses.

Time to start enjoying the track!! Click the picture below to watch a short video clip of the track in action.