



# What is T-Trak

How to build a module

# The Standard



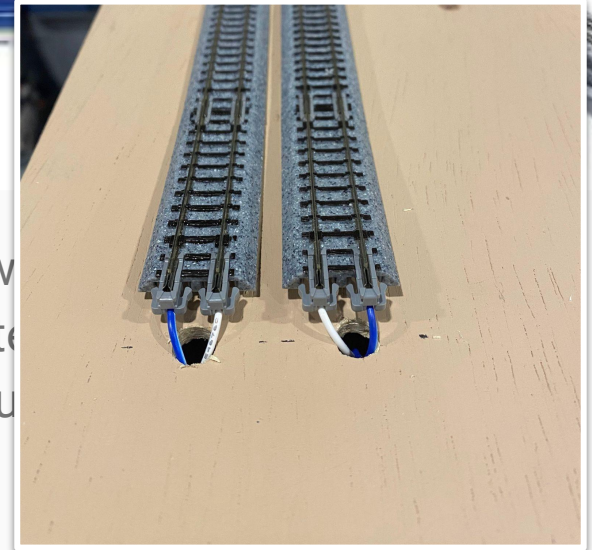


# Rules - Track

- Track at module ends must be Kato Unitrack
  - Other track can be used between Unitrack ends
- Straight modules should be multiples of 310mm units of track for reasons of compatibility
  - Odd lengths can be built as a pair of equal length modules or two modules that equal multiple of 310, i.e. 434 and 186
- Module base must be 2mm shorter than track. Track overhangs module base by 1mm per side
- Max depth is 14"
- Ballast of front track should be 1 ½" from front of module at edge
- Track must be 33mm spacing at edge of module

# Rules - Wiring

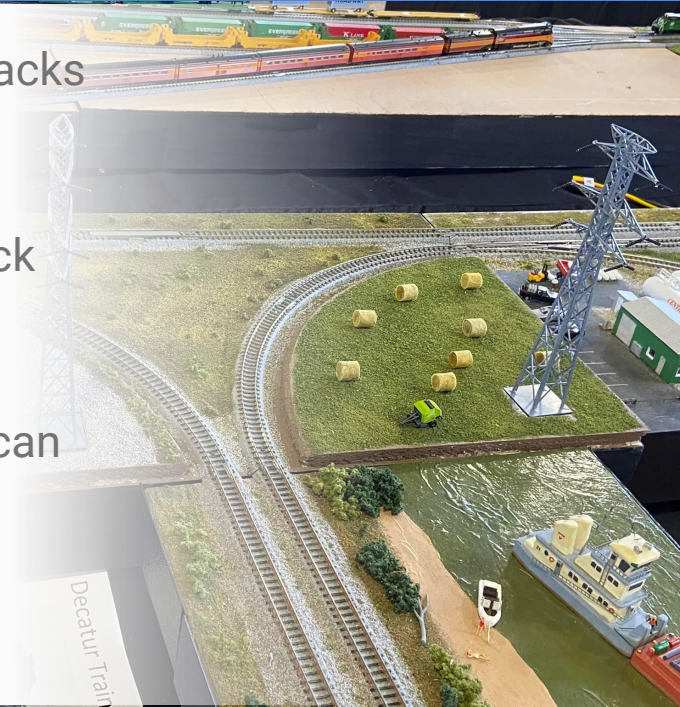
- Does every module need power? No
  - Power should be every 6-8' in a layout so
- Power supplied using Kato connectors
  - Some clubs are pushing Anderson PowerPoles
  - If PowerPole are installed an adapter is required
- Kato power connectors have a blue and white wire
- Modules are wired from front to back, blue-white
- This is an often debated but nonnegotiable requirement



# Why Blue-White-White-Blue?

- Early days of T-TRAK suggest the inside and outside tracks could run in different directions using single DC power pack
- When run in a line with balloons, no need to isolate track
- Powered modules can be flipped front to back with no issues
- Only downside is crossovers from front to back. This can be managed by adjusting the wiring at power supply
- More details available at:

<http://ttrak.wikidot.com/bwwb-vs-bwbw>



Decatur Train

# Why build to the standard?

- TTRAK is an INTERNATIONAL standard. Clubs around the country, Canada, Mexico, France, Spain, UK, Australia, Japan, ...
- Building to the standard allows for multiple people/clubs/countries to run together on the same layout.

Springfield was a perfect example of why build to the standard

- 12 people contributed modules from 2 clubs.
- All sizes and types included.
- Issues with setup were traced to modules not built and wired to the standard.

# Construction Materials/Methods





# Commercially available

Commercially available tend to be laser cut ¼” plywood utilizing tab and slot construction for ease of assembly and added glue surface.

Masterpiece modules - [www.masterpiecemodules.com](http://www.masterpiecemodules.com) - single 13” deep \$16

**Modules are currently unavailable due to sanctions on baltic birch plywood**

CMR Products - [www.cmrproducts.com](http://www.cmrproducts.com)

Kato/Woodland Scenics - [www.katousa.com/N/Unitrack/TTrak](http://www.katousa.com/N/Unitrack/TTrak)

Stuart Denisen - [Facebook profile](#)

# DIY materials

Top - ¼” or 5mm sanded plywood, underlayment	HD#431178	\$21.38
Sides - same as top or 1x3 pine		
1x3x8 Premium Kiln Dried	HD#914649	\$5.65
1x3x8 Select Kiln Dried	HD#418545	\$11.40

What makes the best module? Personal preference

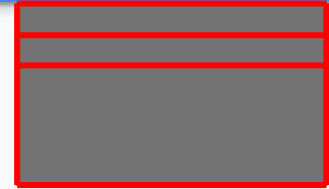
Many MVNS modules built early in our T-TRAK journey are ¼” plywood construction. They are holding up.

Build them square, flat, and to the spec and they should be fine

# Construction Methods 1x3 and router

- Use Miter saw, hand saw, circular saw to cut front and back board ACCURATELY.
- Use Miter saw, hand saw, circular saw to cut sides to desired depth less thickness of front and back
- Use circular saw, hand saw to cut top about 1" larger than needed
- Assemble using glue and screws leaving top with about ½" overhang on all sides
- Use router with flush cutting bit to trim top to size

# Construction Methods - Plywood



Typically used for all plywood construction

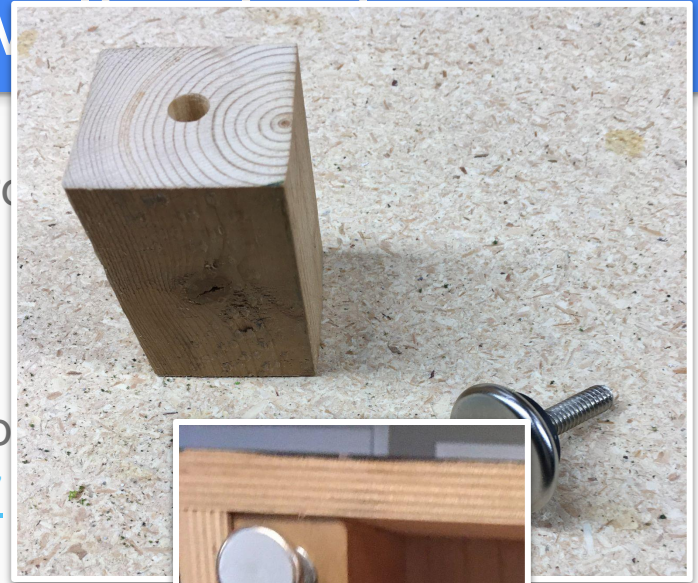
- Cut a piece for the two sides with extra length and width
- Cut a piece for top and front and back. Cut depth over sized for module depth and front and back. Cut width to module finished size
- Adjust fence to cut module depth. Cut top. Use two thicknesses of material against fence. Cut width of sides
- Adjust fence to 2 ¾". Use a thickness of material against fence. Cut width of front, back, and sides
- Use glue and tape, support blocks, to assemble

# Construction Methods - leveling feet

Module should have feet to make it adjustable from floor to ceiling. Current layout height is at 3 ½”.

- Add 2x2 blocks cut 2 ½” long to the corners
- T-nuts in the bottom with 2” long carriage bolts
- Furniture glides

[HD#193637](#)



# Module finishing



# Finishing details

MVNS standard fascia is satin black.

Paint the top of the module an earth color

Scenery should and auxiliary tracks can run to edge of module but cannot interfere with joining of modules

Scenery should not interfere with operations of train. NRMA clearance gauge  
Special care must be used on corners. Consider long passenger/auto rack rolling stock. Center of car will overhang inside or radius, corner of car will overhang outside of radius

# Laying Track





# Tools for Laying Track

- Attach track to module with [Marklin 7599](#) screws
  - Drill 1/16" clearance hole from bottom of track
  - Use 1/8" drill bit to countersink
  
- Seal the edges of switches so capillary action doesn't suck glue in and foul the switch

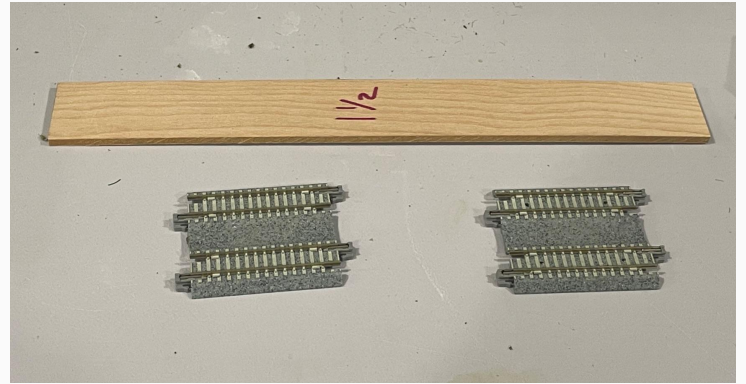


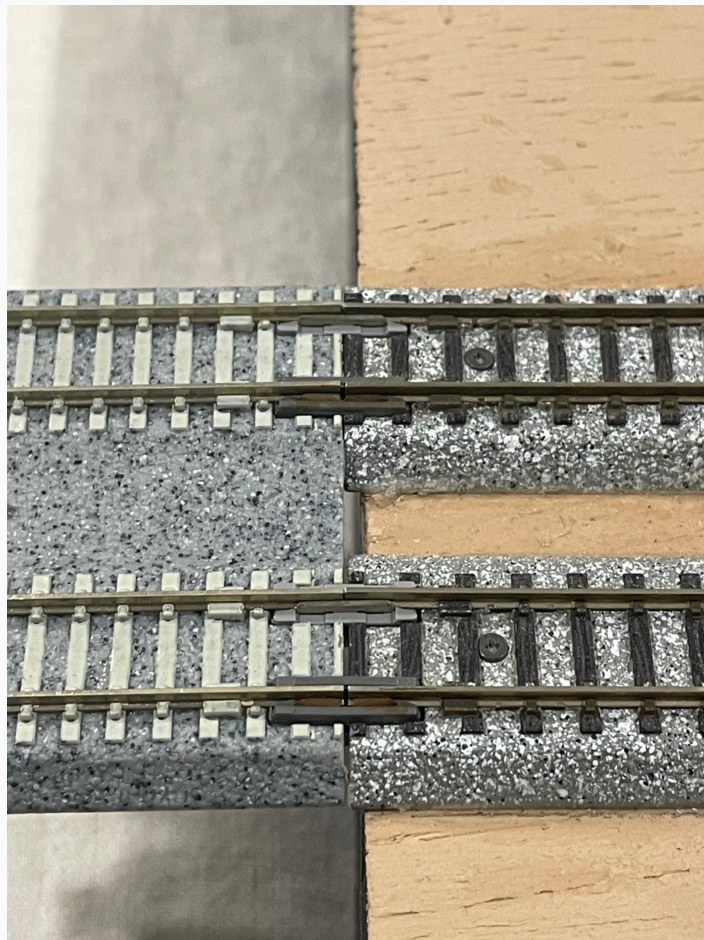
# Track Alignment

Use a 1 ½ wide piece of wood as jig for the 1st track set back.

Use Kato double track sections to ensure tracks are transversally even.

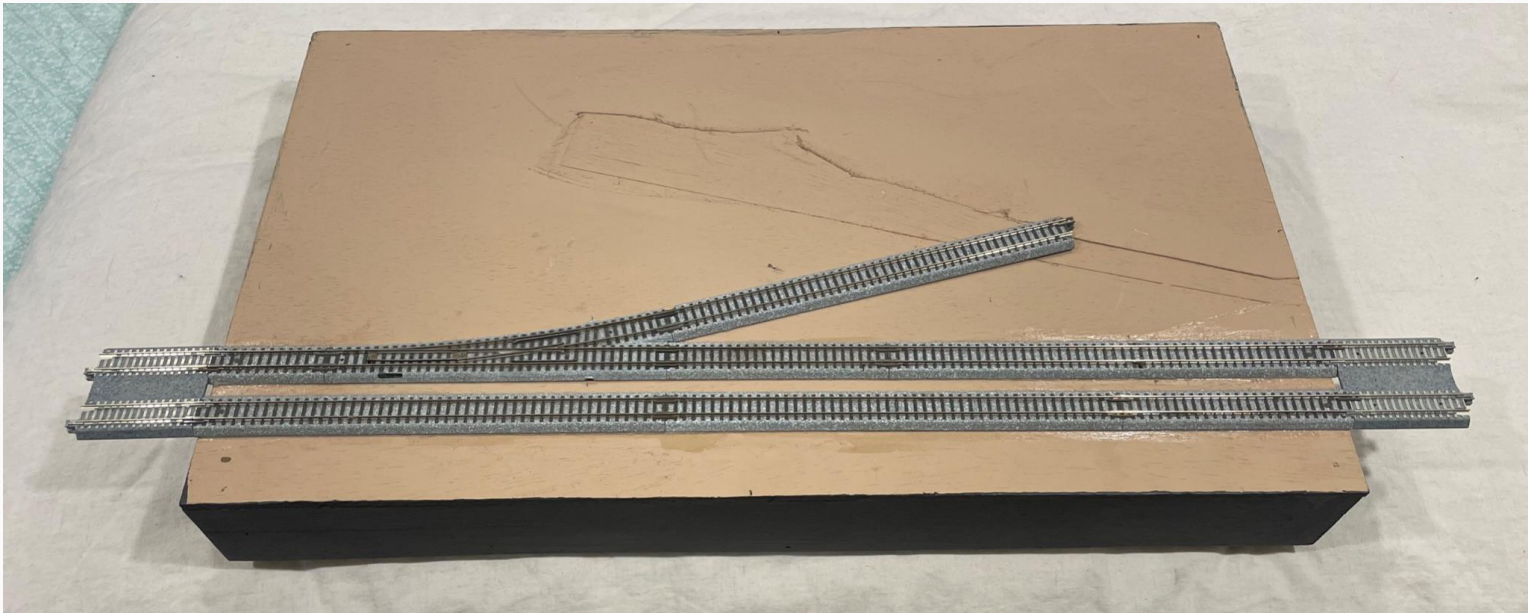
Kato 20-042





**MVNS**  
ST. LOUIS, MO

**T-TRAK**™



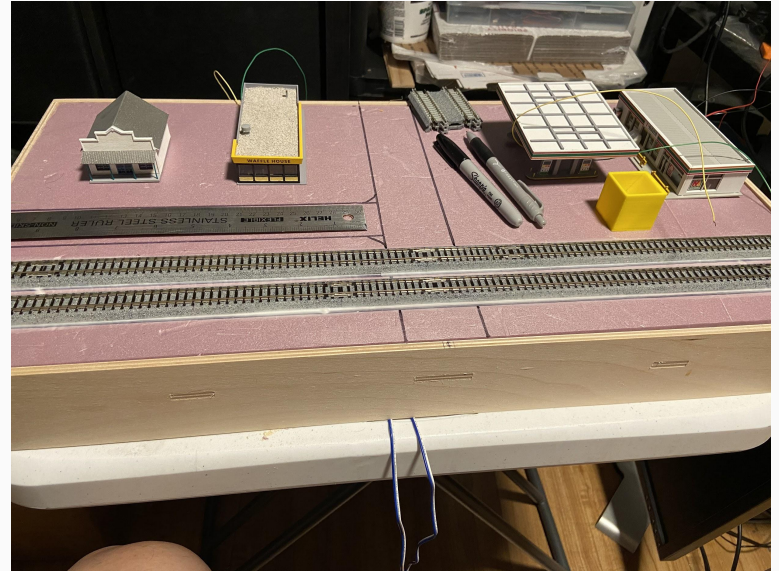
# Developing a scene



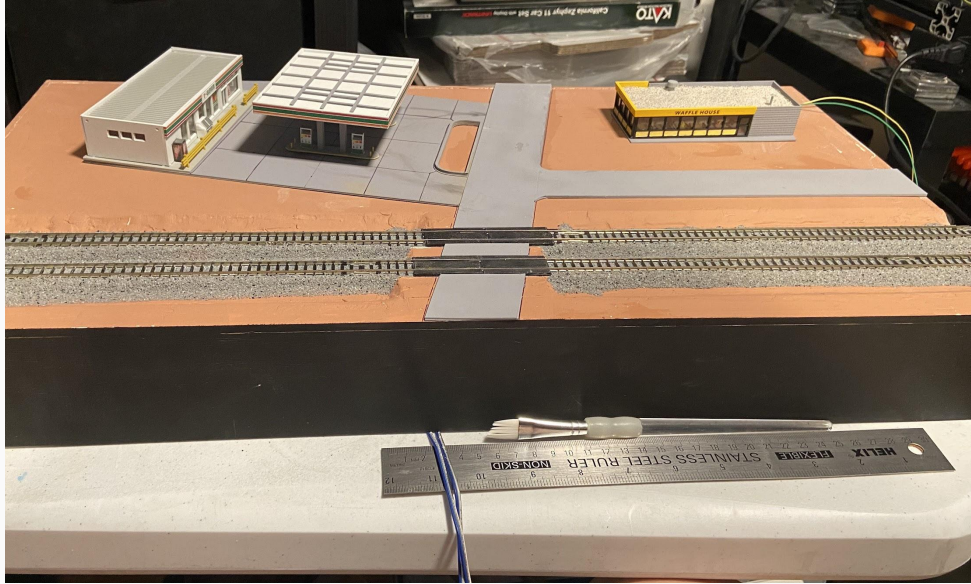
# Developing a Scene

There are a couple of approaches to creating a scene; building a fictional locale or modeling a prototypical location.

When creating a fictional location, figure out what you want to depict. What is the action you want to show. Is there an industry that interests you or a story you're telling?



# Developing a Scene - Fictional



Choose buildings that support your narrative. Make sure they fit the space. Remember that having all right angles is boring and less is more.

# Developing a Scene - Prototype

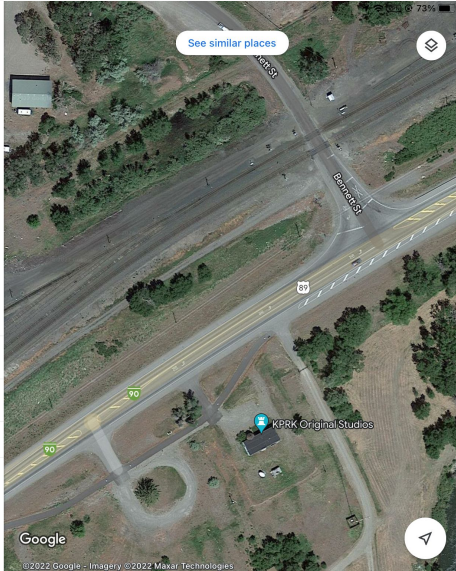
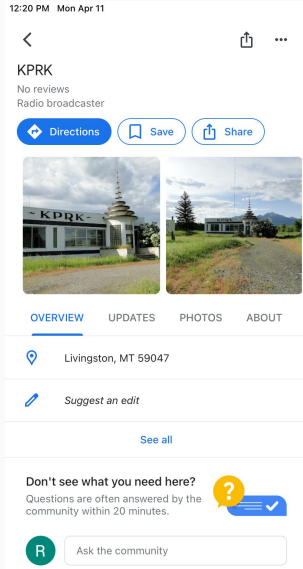
When modeling a prototypical scene, pick something that inspires you. A friend sent me this photo. The building intrigued me, so I started researching it.



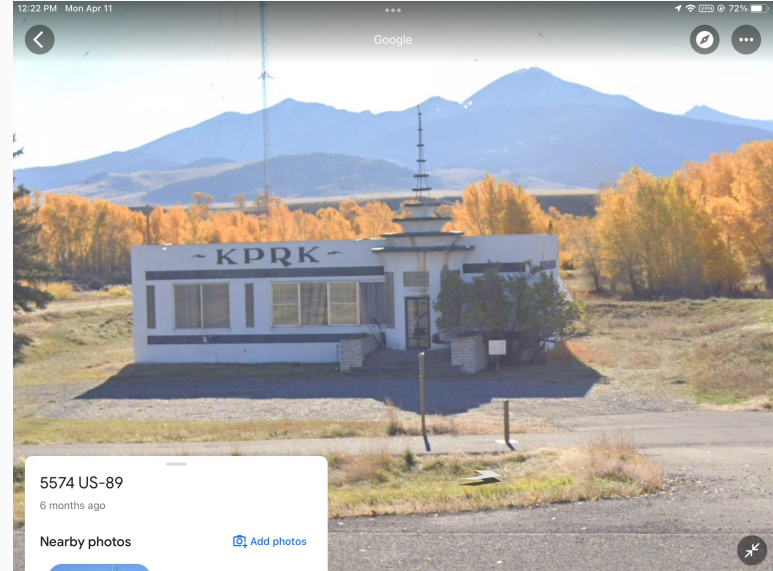
Photo Credit: Steven Skaggs



# Developing a Scene - Prototype



Google maps revealed that the building was across from the MRL/BNSF mainline. Eureka!



# Developing a Scene - Prototype

When modeling a prototypical scene, you often are required to use “selective compression”. In real life, objects are spread out and might not fit in the available space. In these instances, modelers compress the spacing between scenic elements but still try to maintain the relative placement, while perhaps omitting elements not necessary to the narrative.



# Developing a Scene - Pointers

- Try not to overcrowd your module
- Nature abhors straight lines...only man makes things straight
- Consider the terrain of the location you're modeling
- Vegetation is rarely all the same color
- Most railroad right of ways and roadways have drainage ditches
- Don't forget infrastructure like signage, telephone lines, etc.
- Weathering your roads, track and buildings adds realism
- Include vignettes of humorous situations or typical scenes in real life
- There is almost always a prototype for anything you can dream of
- Consider that train shows are family oriented...keep things G rated

# Developing a Scene - Dream Big!

Your imagination is your only limit...if you can dream it, you can build it!



Photo Credit: Michael Patrick Arnold

# T-TRAK Etiquette



# Spectators First

- Keep area on the table top free of boxes, bags, cups.
- Clean off fallen saw dust and scenery
- Keep aisles clear
- Keep back from the layout so visitors can see the trains
- Keep surrounding set-up tables clean and uncluttered
- Store train cases under the layout.



# Running Trains

- Have your trains cleaned, maintained and ready to go before the show
- Address your locomotives before the show
- No 00 running and refrain from using 03
- Place your train on the layout, preferably at the yard
- Once railed, clear away your boxes and make room for the next person
- Yard your train or give it to another member if you have to use the restroom or run off to a vendor table
- Yard your train for short periods of time. Take it off if you are going to lunch, etc

# Running Trains

- Run one train at a time (you're not as good as you think you are)
- Keep an eye on your train and the train in front of you
- If a car or locomotive has consistent problems derailing take it off the track.
  - Flip the car around
  - Trip Pins





# Set up/ Adjustments

- If you are setting up someone else's modules involve them in anything you do.
- Include the owner in any adjustments you need to make

# Teardown is not a Race

Most loss and damage to modules comes at teardown

- Broken track bed
- Missing Unijoiners
- Lost or misplaced parts and wiring



# Module Separation

Use a thin screwdriver to insert between the two main lines then pry.

Do not use a prying tool that is larger than 2mm.

# Misplaced Items

If you don't know what it does or where it goes ask someone who does. If you still can't figure it out, leave it on a table or with other MVNS property.

# Resources

- Standards document:  
<https://nrail.org/resources/Documents/T-TRAK%20Standards.pdf>
- General information:
  - <http://t-trakhandbook.com/>
  - <http://ttrak.wikidot.com/>
  - <http://t-trakhandbook.com>