

Layout Construction “Quick Clinic”

Two Topics:

1. Building a simple, reliable lift out with integrated electrical connections
2. Building a seamless backdrop with “Sintra”



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1. *The Challenge:*

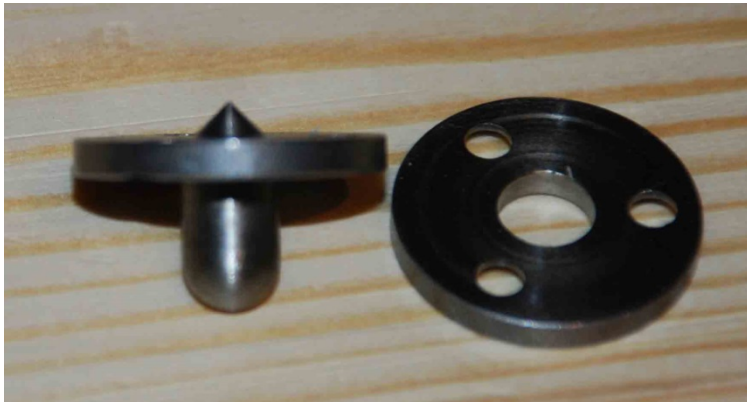
- **Build an easy lift out that guarantees perfect alignment every time, *and ...***
- **Simplify the electrical connections**



The Solution: “Pattern Maker’s Dowels”

Used in England for model train “baseboard” alignment

- **Precision tolerances help ensure alignment**
- **Metal construction provides electrical connectivity**



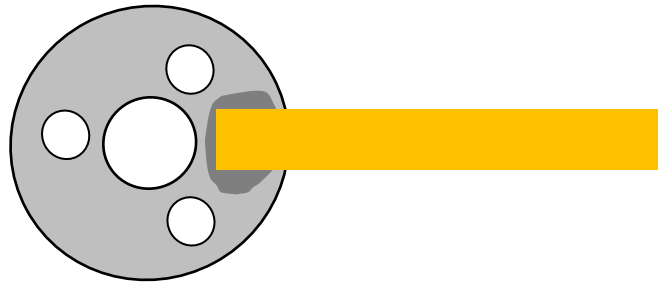
<http://www.finescale.org.uk/index.php?route=product/category&path=437>

(About \$10 for two pairs)

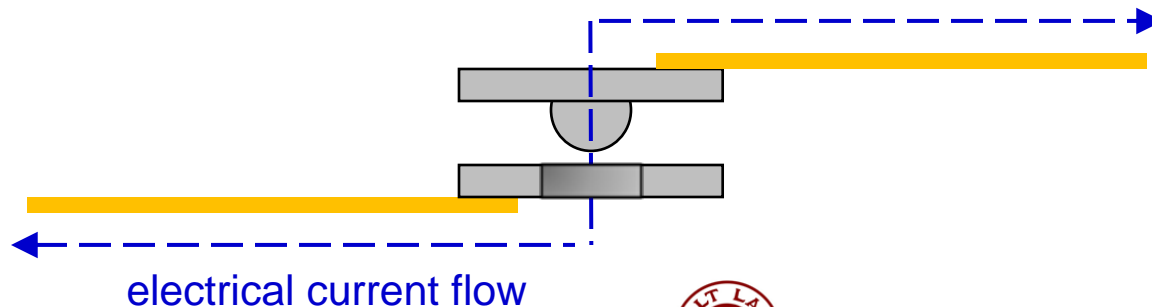


Electrical Connection

- **.025" x 1/4" brass strip soldered to back of connector provides electrical path to/from the connector**



- **When lift out is in place, current passes across the mated connectors**



Benchwork



**5/4 x 8" end boards
at lift out**

**2x2 cleats bolted
to end boards**



Mounting Connectors



Female connectors and brass strips recessed into pockets on cleats

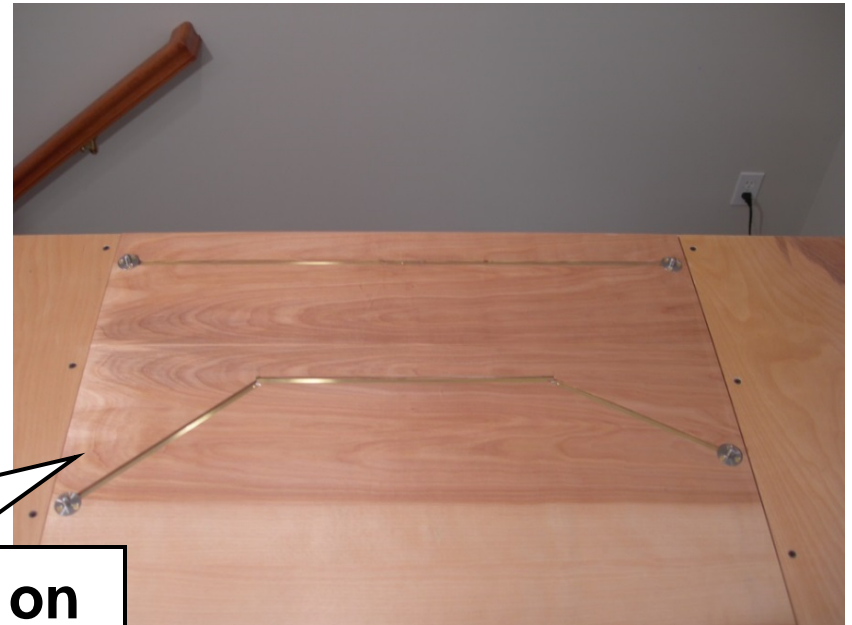


Brass strips passed thru channels under sub-roadbed and wired to terminal strips



Alignment

Male connectors and lift out set in place and pressed down; Points on back of connectors mark aligned hole centers on bottom of lift out

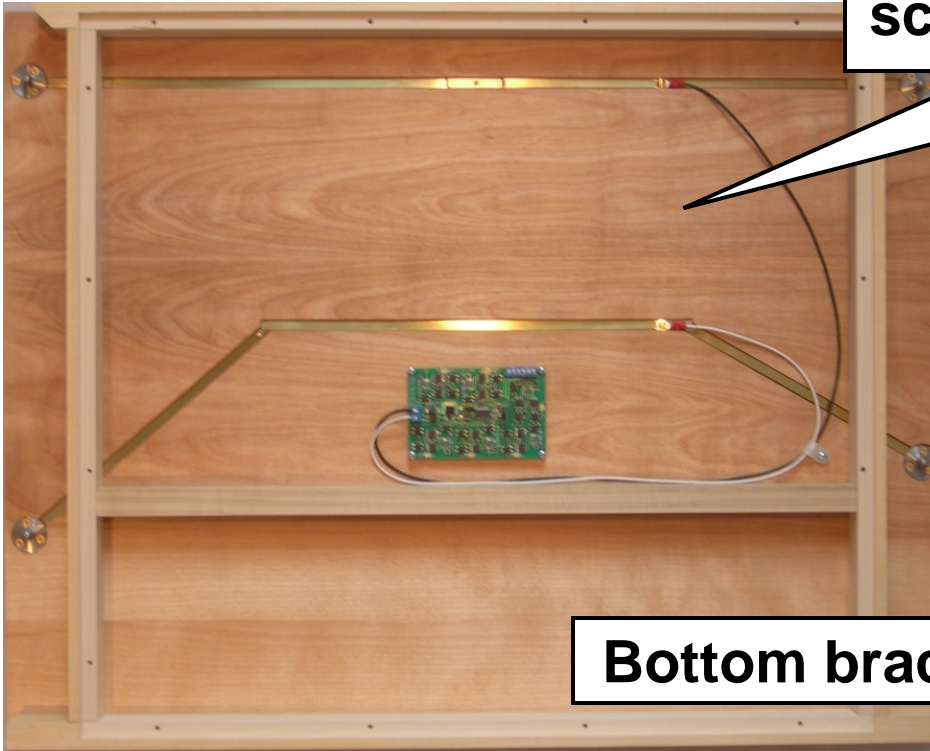


Male connector pockets drilled on hole center marks and connected with brass strips routed into lift out



Track Wiring

Track leads attached to brass strips with #6 round head screws and spade connectors

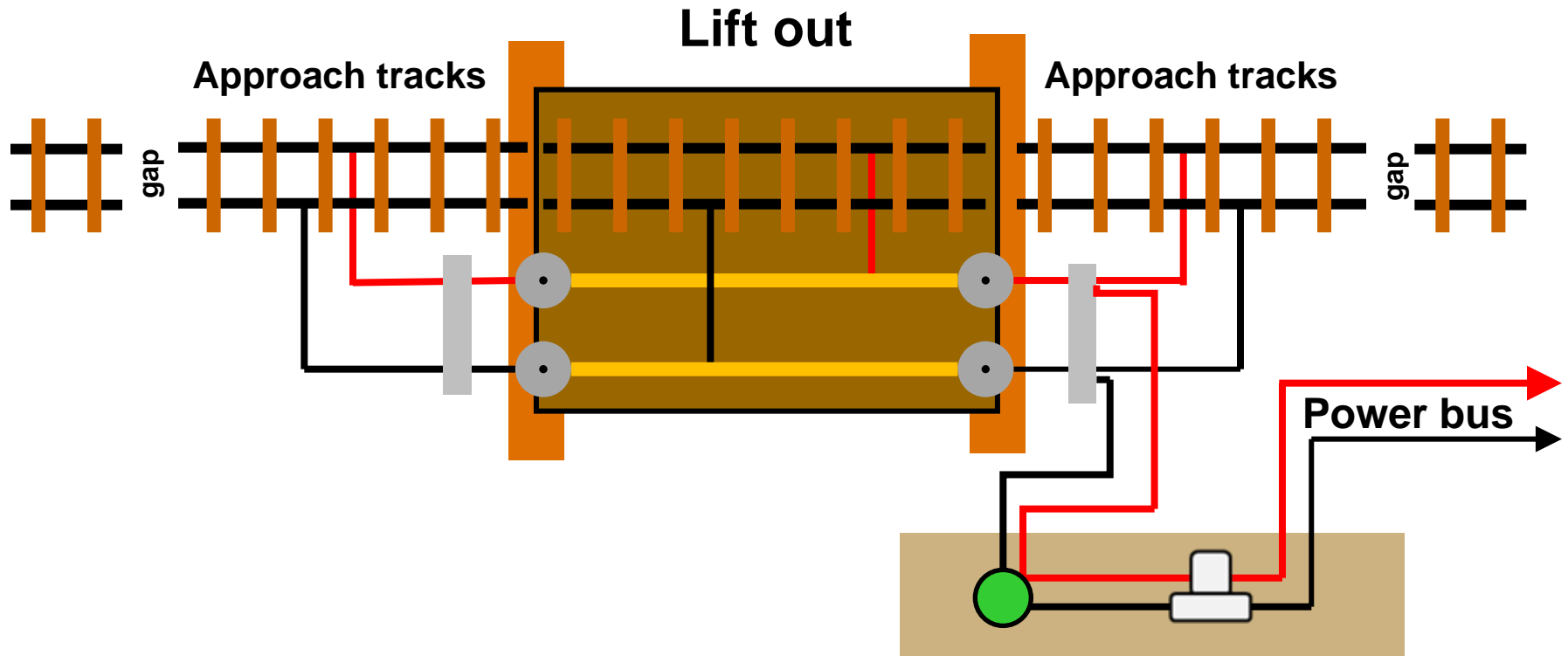


Bottom bracing and cover added

(Tam Valley Hex Frog Juicer shown in photo will be used for frog polarity on crossing)



Lift Out Wiring Schematic



- Approach tracks gaped to cut track power and prevent locomotive “swan dives” when lift out is removed
- Power to lift out and approach tracks controlled by fascia-mounted toggle switch with power indicator light



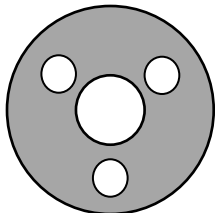
Tools that help



1" Forstner bit for flat-bottom mounting holes



Drill press or drill guide for plumb holes and exact depth



(.015" styrene disks for when you drill too deep...)



2. Building a seamless backdrop with “Sintra”



What is Sintra?

It's a lightweight, rigid PVC board with a matte finish

- **Similar to styrene, but cheaper (but not cheap)**
- **Easy to cut**
- **Easy to bend to 12" or tighter radius**
- **Easy to paint**
- **Glues to itself, styrene and other plastics with Weld-On 4052 (epoxy also works, but not as well)**
- **Can be filled with DAP Vinyl Spackling**

- **I used 1/8" (3mm) sheets, 24" high**
- **Available in 4' x 8' sheets from Modern Plastics in Shelton, CT**



Working with Sintra

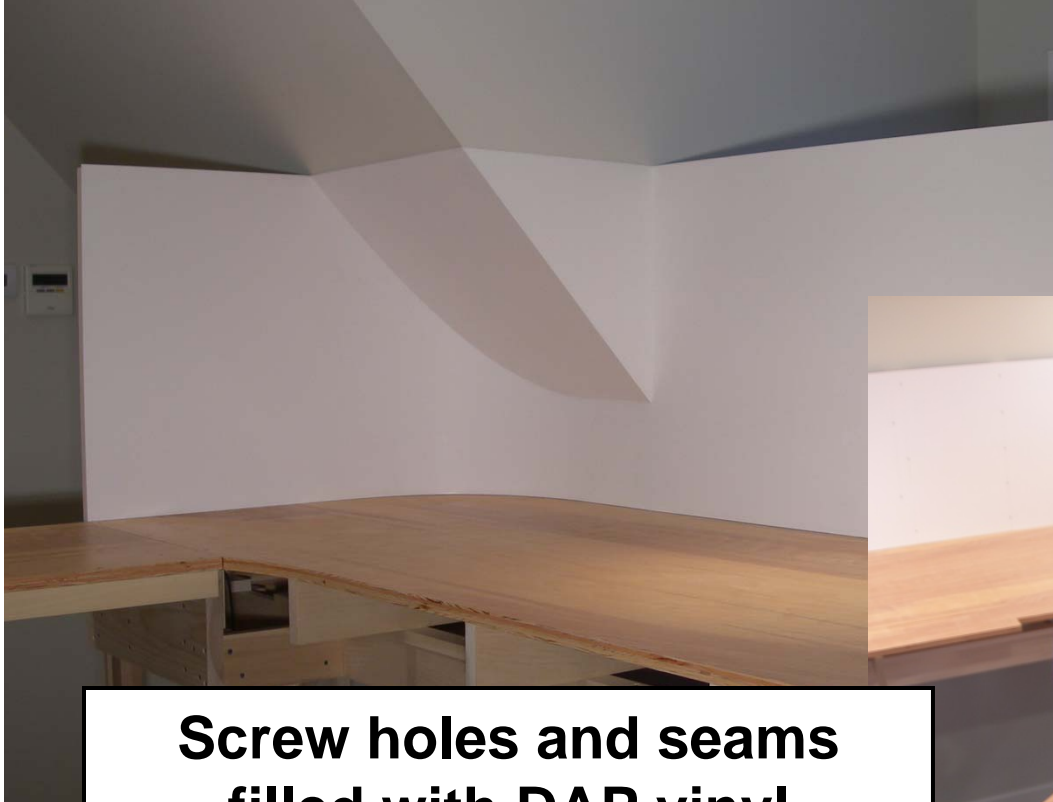
Sintra sheets joined together using .030" styrene strips glued to backside, then attached to braces with countersunk #4 flat head screws



Plywood template helps form corner curves



Sintra Can Be Readily Fabricated

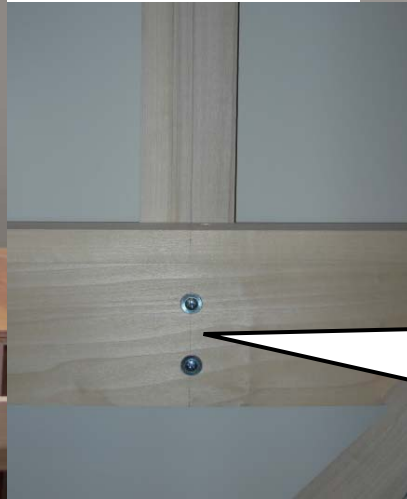
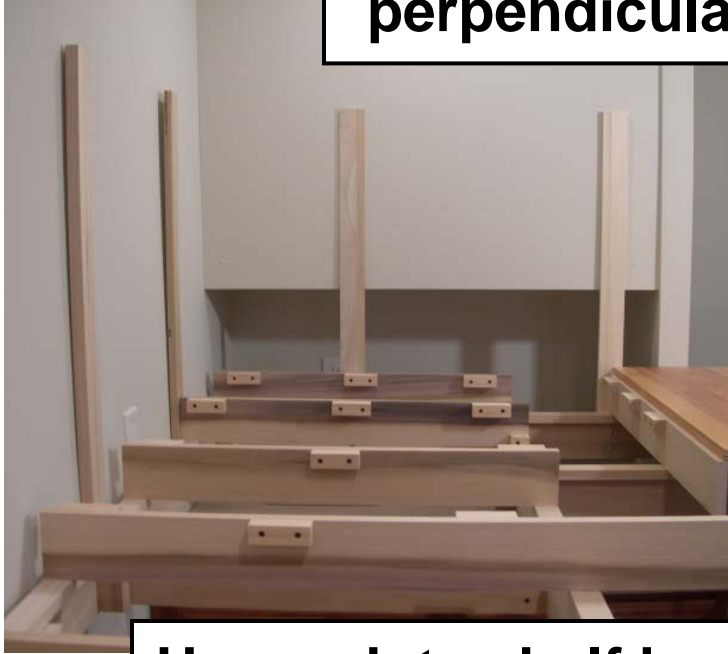


**Screw holes and seams
filled with DAP vinyl
spackle, sanded and primed**



Backdrop Braces

Braces are 1x2s with $\frac{3}{4}$ " edge glued perpendicular to minimize warping



Braces mounted to benchwork with lath screws



Heavy duty shelf brackets used on table top; Sintra mounted directly to bracket using #4 machine screws or to a wood brace attached to the bracket



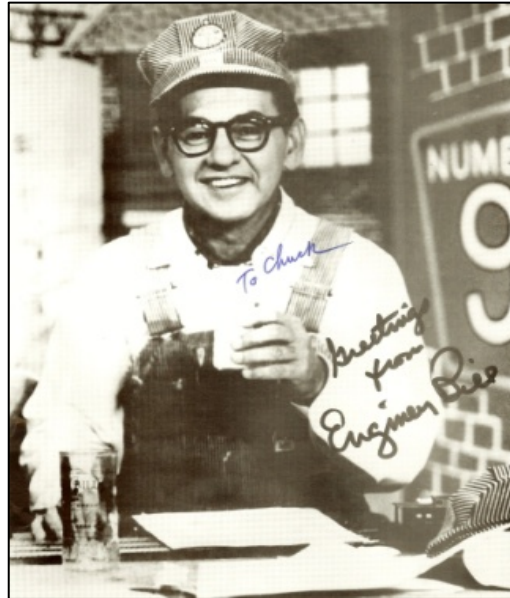
Painting Sintra

- Sintra can be painted as is, but using a primer made for PVC like “Styx” will improve adhesion
- For my test backdrop I used Benjamin Moore *Costa Rica Blue* lightly over-sprayed with Golden airbrush colors *Titanium White* to create a “horizon haze”



Questions??

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“On the green light you go and on the red light you stop, because no engineer would ever run a red light.”

“Engineer Bill” Stulla, KHJ-TV Cartoon Express, Los Angeles, 1954

