

# Wiring a Layout: Part I

A NMRA Clinic presentation for:  
Three Lakes Model Railroad Club  
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# Wiring Part I

- At the onset, look at the task ahead..
- Choose an approach that allows functionality
- Address: today's need and tomorrow's desire
- The family and friends count: involve them all
- Make designs, plans and compare them
- Consult experts, books and do your best
- We end with conductors of note...



# Consider Wire Routing

- If & where to put hardwire turnout controls
- If & where to put classic block controls
- Centralized or decentralized (by Division)
- Control the expense of your controls
- Work so later modifications are possible
- Reduce probable snagging hazards
- Power vs. Signal wiring separation... etc.







# Turnout Controls

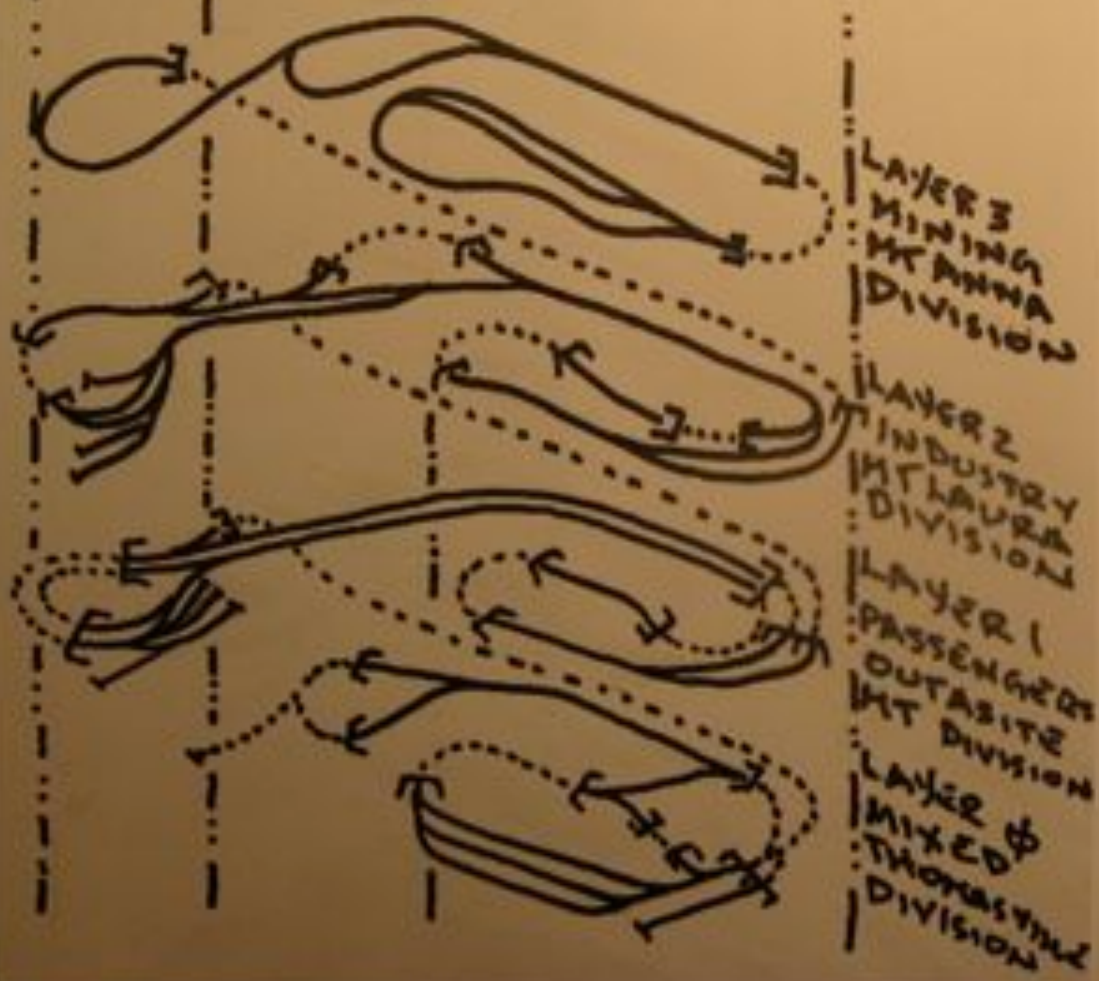
- We'd like three methods of control
- 1<sup>st</sup>: *Manual selection of route (one at a time)*
- This implies a hardwire panel (classic or DCC)
- 2<sup>nd</sup>: *Standard routes (one group at a time)*
- This implies another panel (classic or DCC)
- 3<sup>rd</sup>: *Automated routing* within a single power district or RR Division (relay or computer)





# THOMASVILLE REGION of the CINW

CRAWL WEST  
SPACE WALL  
← 12' → 16' → NORTH WALL  
24' WALL







# Turnout Method

- Our layout will have about 50+ turnouts
- Cost of controls must be contained
- *4<sup>th</sup> control method DDC via computer*
- Simple is best where best = affordable
- Two bolts, four nuts, two washers / turnout
- Cost is about 10 cents per ... manual setup
- DDC and automatic control is another class



PICK YOUR ROUTE

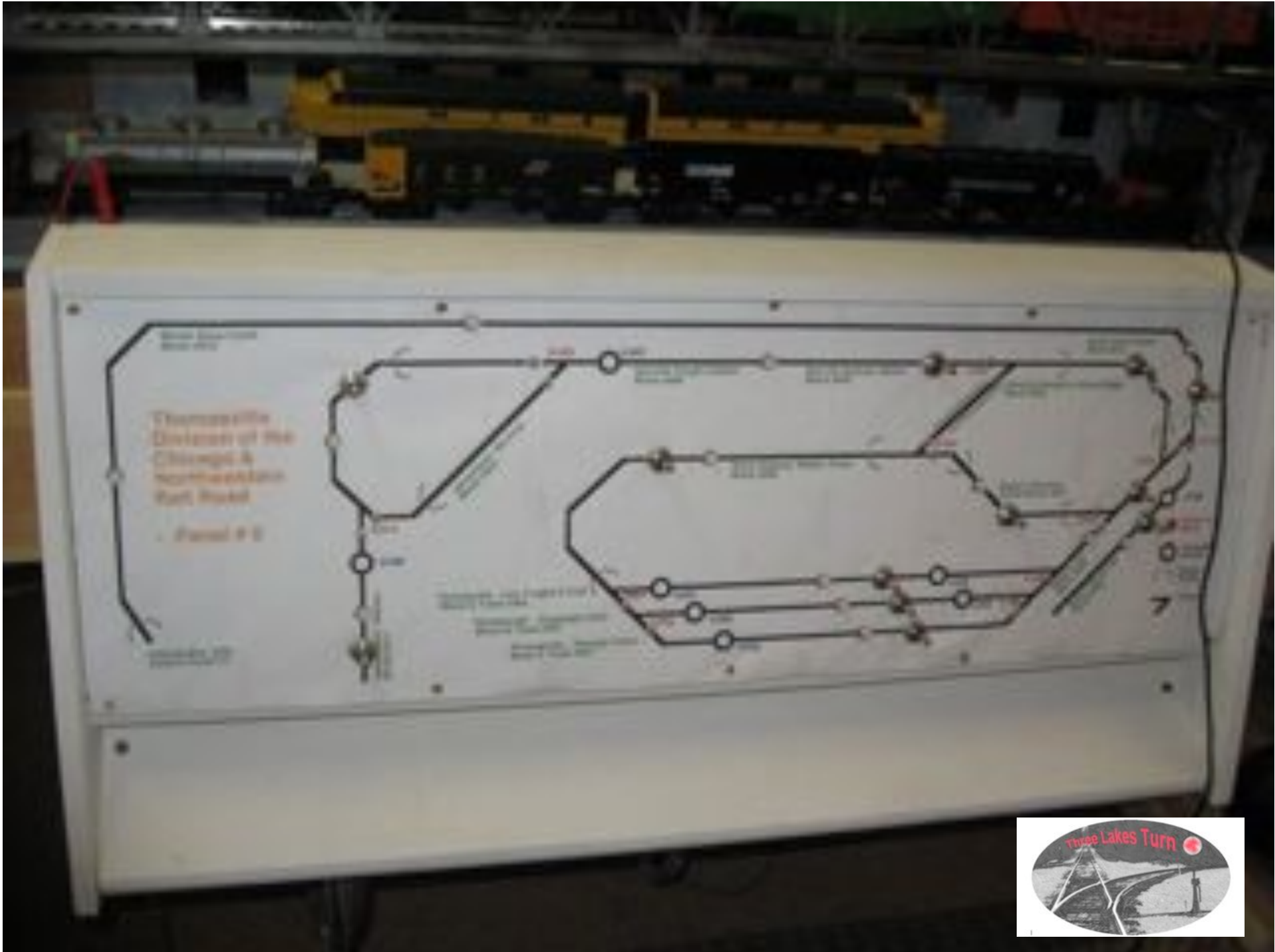


THE 2 BOLTS, 2 WANNERS,  
4 NUT TECHNIQUE

*Three Lakes Turn*  
1/2016







Thames Valley  
Division of the  
Chicago &  
Northwestern  
Rail Road

Panel # 2



# Wire Support

- Train table design influences wiring
- Use simple pass thru where possible
- Use coat hangar (cheap) suspenders
- Glue or Tape (and screw) wire tie supports
- Can be added without disturbing scenery
- Use 12 gauge stranded wire for typical blocks
- Install track feeder (18-22 ga) about every 10 ft

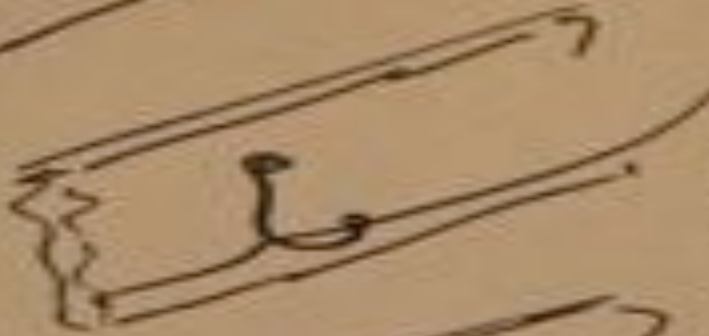




# WIRE SUPPORTS



SIMPLE  
PASS  
THRU



SIMPLE  
COAT  
HANGER



GLUE OR  
2 SIDE TAPE  
WIRE  
TIE  
LOOPS

*James*







**Sam age six learning electric screwdriver**





**Sam's has the idea !**





# Various Conductors

- Stan Kenton, Paul Whiteman, Dizzy Gillespie
- Copper (best conductor for the price)
- Brass: (60+% Cu, 30+% Zn, 1% Sn)
- Bronze: (88%Cu, 12%Sn) typical
- Nickel – Silver (60% Cu, 20% Ni, 20% Zn) is not
- Silver – Nickel alloy ( 85% Ag – 15% Ni) (super!)

