

TALKIN'

T-TRAK™

Professor Choo Choo

T-TRAK 101



Find the problems
BEFORE they
become part of
the layout!

A photograph of a wooden box on a workbench. The box is rectangular and made of light-colored wood. To the left of the box, there is a track module with a metal track. The background is a wooden workbench.

What is this little box? It could be a small filler track module?

But it's NOT a module!!

To be continued . . .





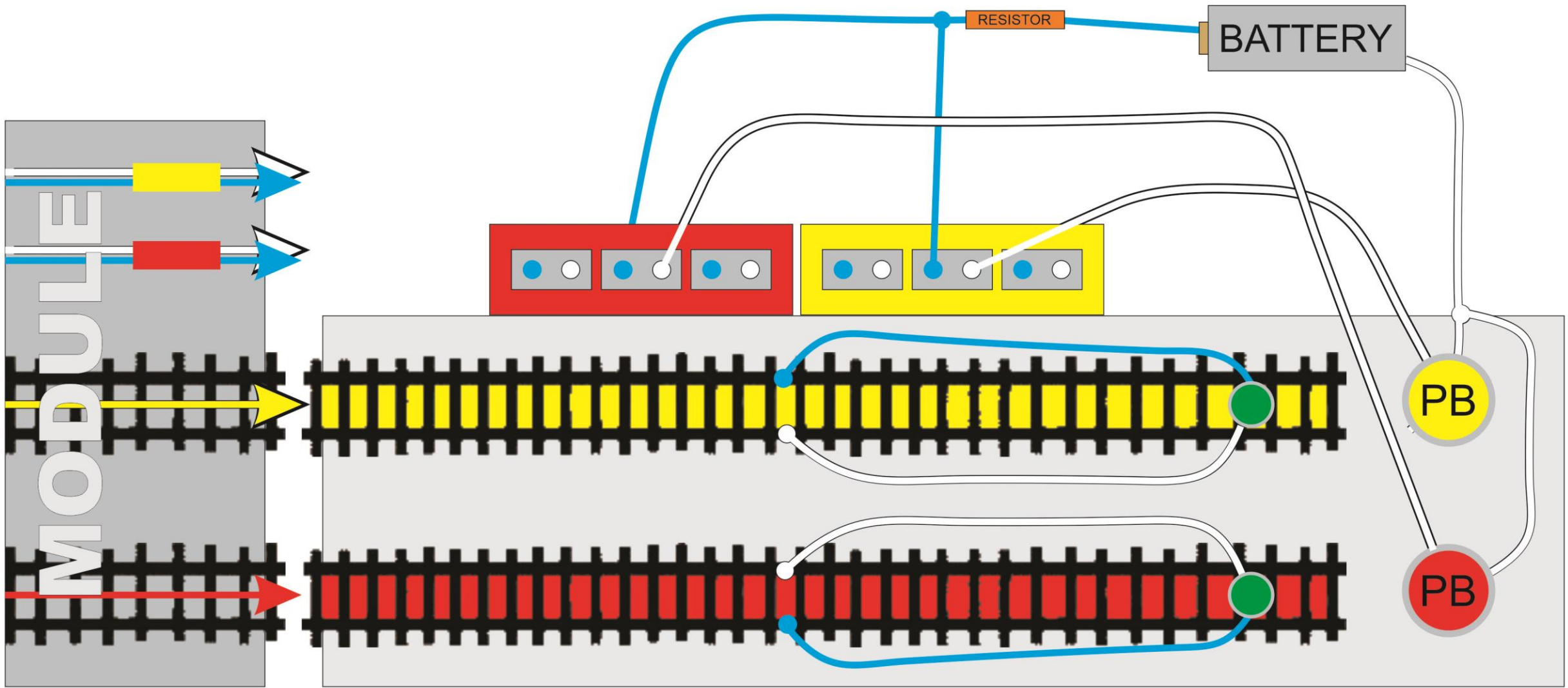
PARTS LIST?

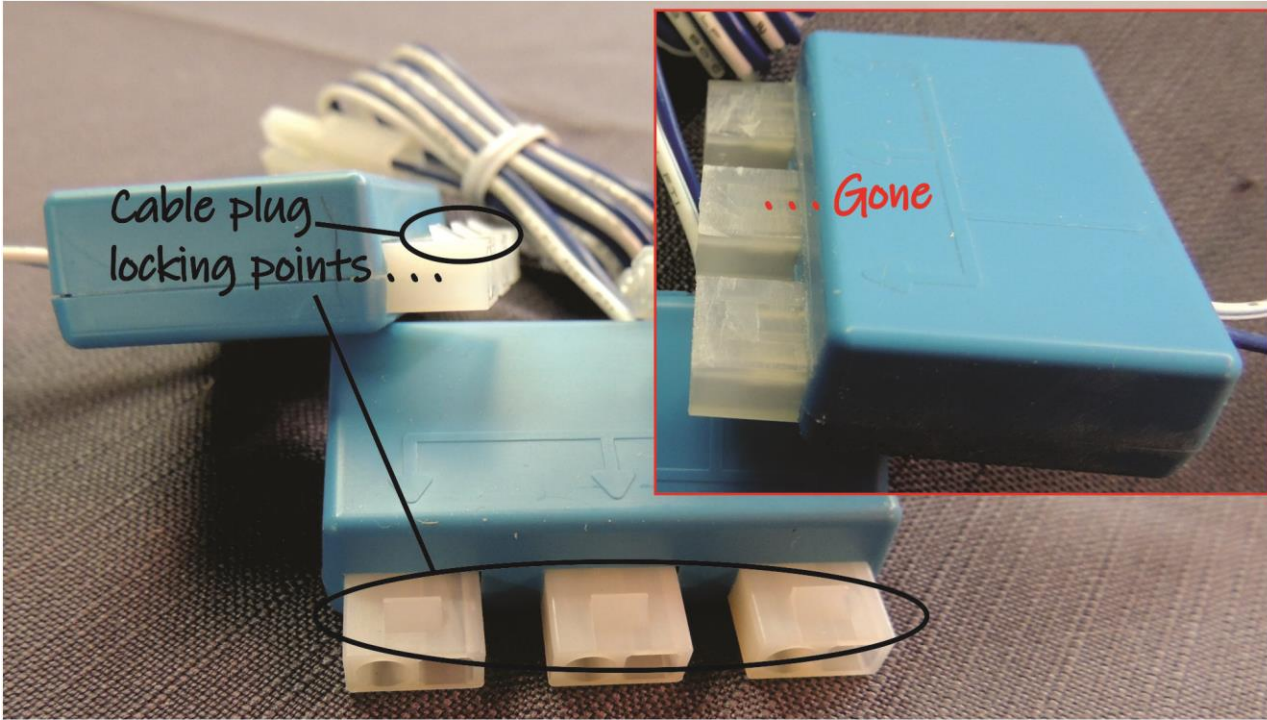
This Stuff...

- Battery box & leads & AA batteries
- 2 momentary push button switches (push - on / release - off)
- 124 MM KATO double track (also checks module track spacing) (length optional)
- 2 KATO Terminal Unijoiners
- 2 KATO 3-way Extension Cords
- 1 270 k ohm resistor (dependent on voltage and LEDs)
- 2 LED diffuser lenses
- 2 bipolar red/green LEDs
- 2 KATO track bumpers (optional)

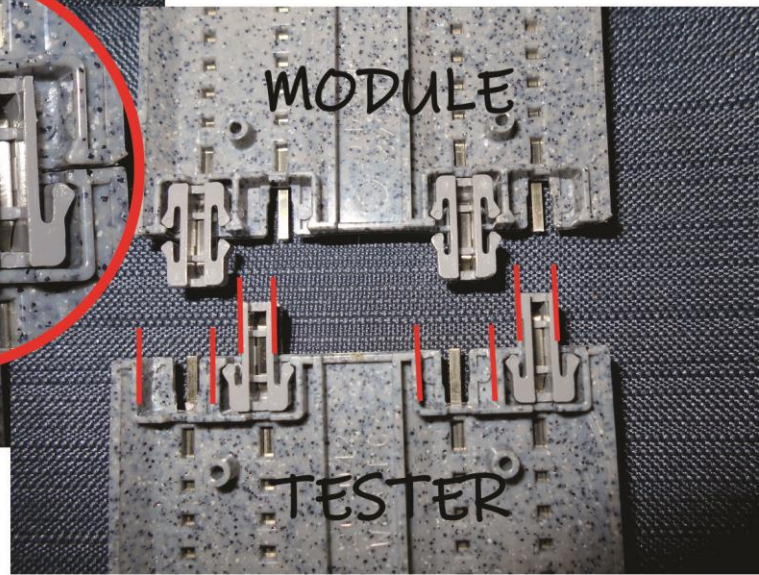
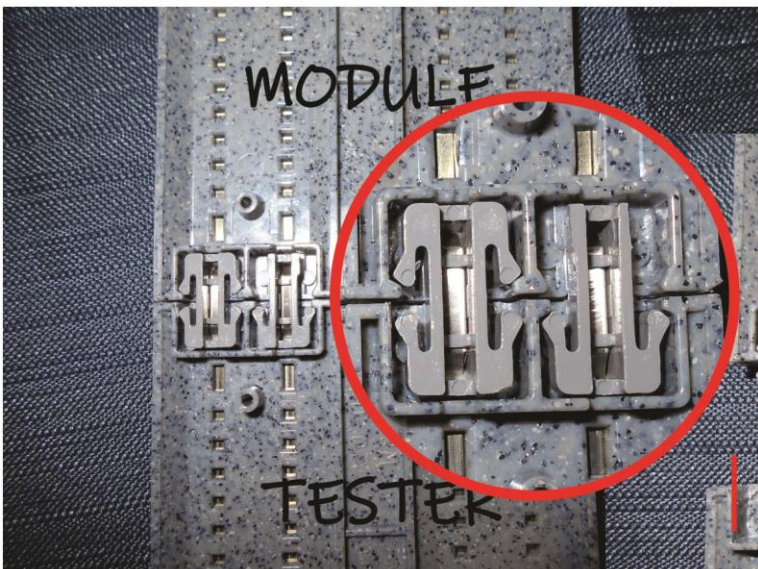
AND

an enclosure of your choice





The pointy things on the 3-way extension cord sockets that hold attached cables in place were removed to make connection and disconnection of the module cords to the tester easier. The 3-way extension cords were chosen for ease of mounting to the tester. This way the only cables used are the ones supplied by and used by the module under test to connect to the layout power bus.



MAKING THINGS EASIER

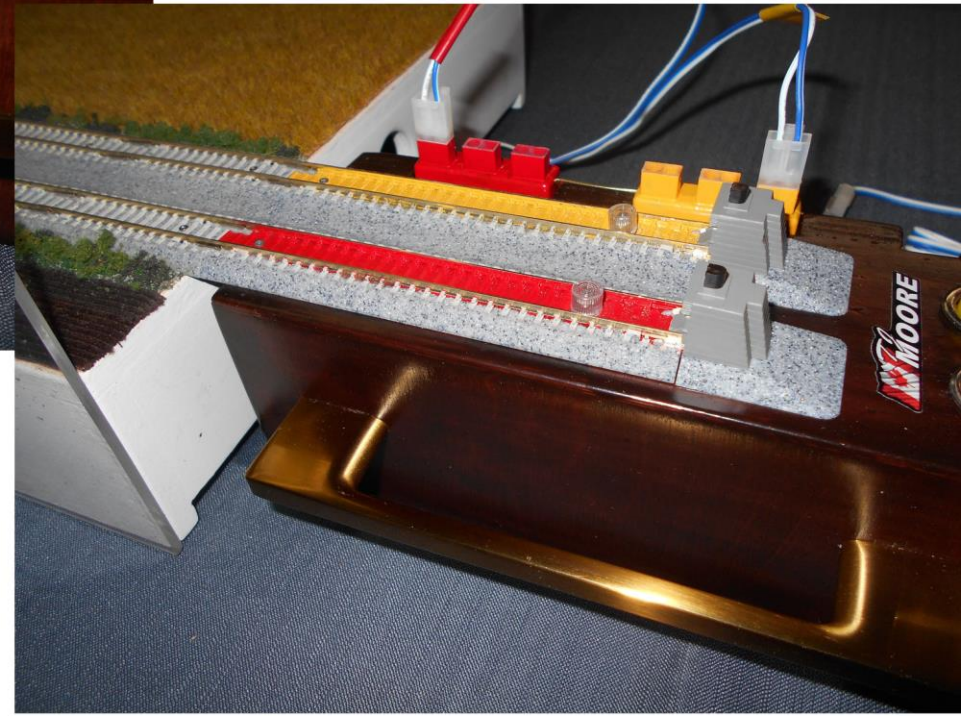
To ease tester track attachment and removal the locking horns on the unijoiners were removed as shown and the nubs on the unijoiner sockets were trimmed to keep the module unijoiners from locking in.



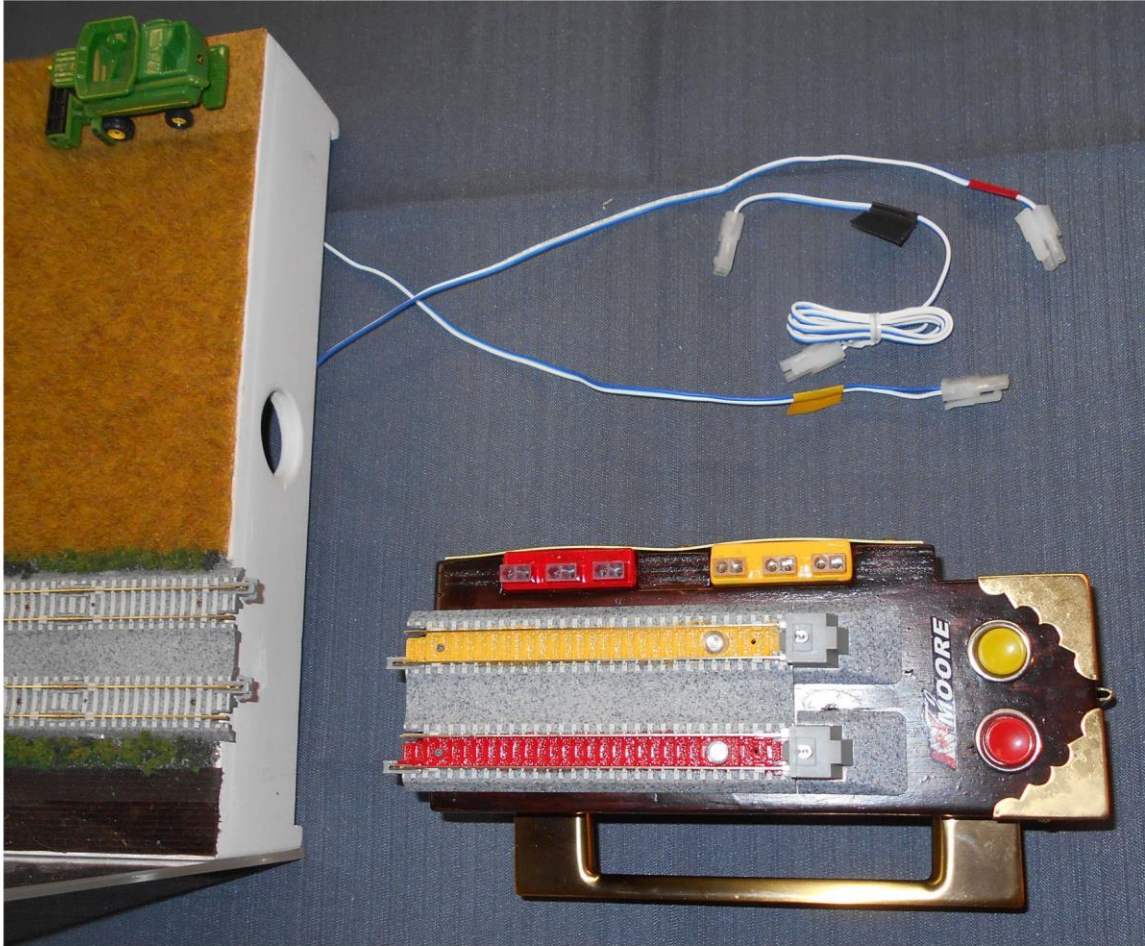
The best way to relate to a module is with a module, so the Tester was based on a "mini module". The Tester sits on the table with an unraised module for testing and slides right up to it and connects to the track just like another module! The power cables from the module being tested connect to the plugs on the Tester.

Let the testing begin!

The handle is simply an easy way to carry the Tester - like a mini lunch pail. Any of the 3 plugs per track can be used. The track buffers are for appearance and to protect the Terminal Unjoiners under them. The little wooden box "mini module" enclosure was a natural with lots of module materials left over after building almost two dozen modules of various sizes.



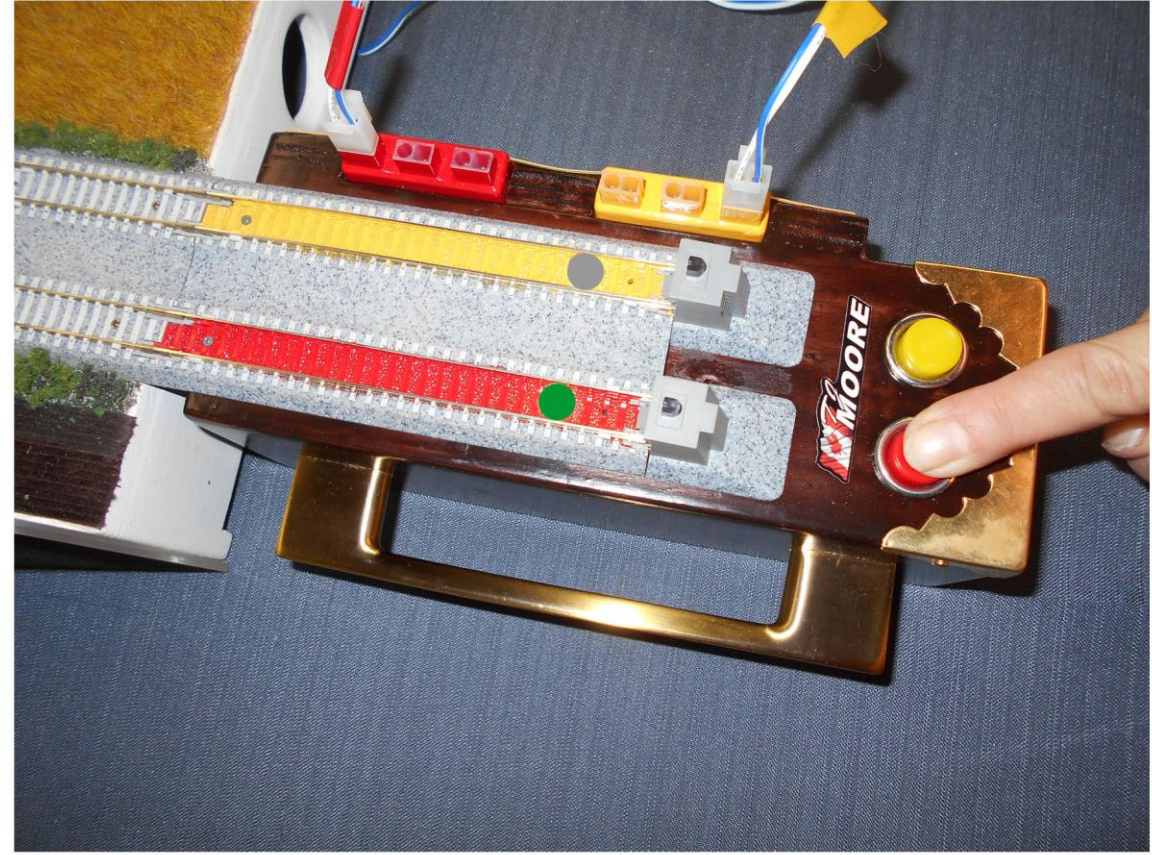
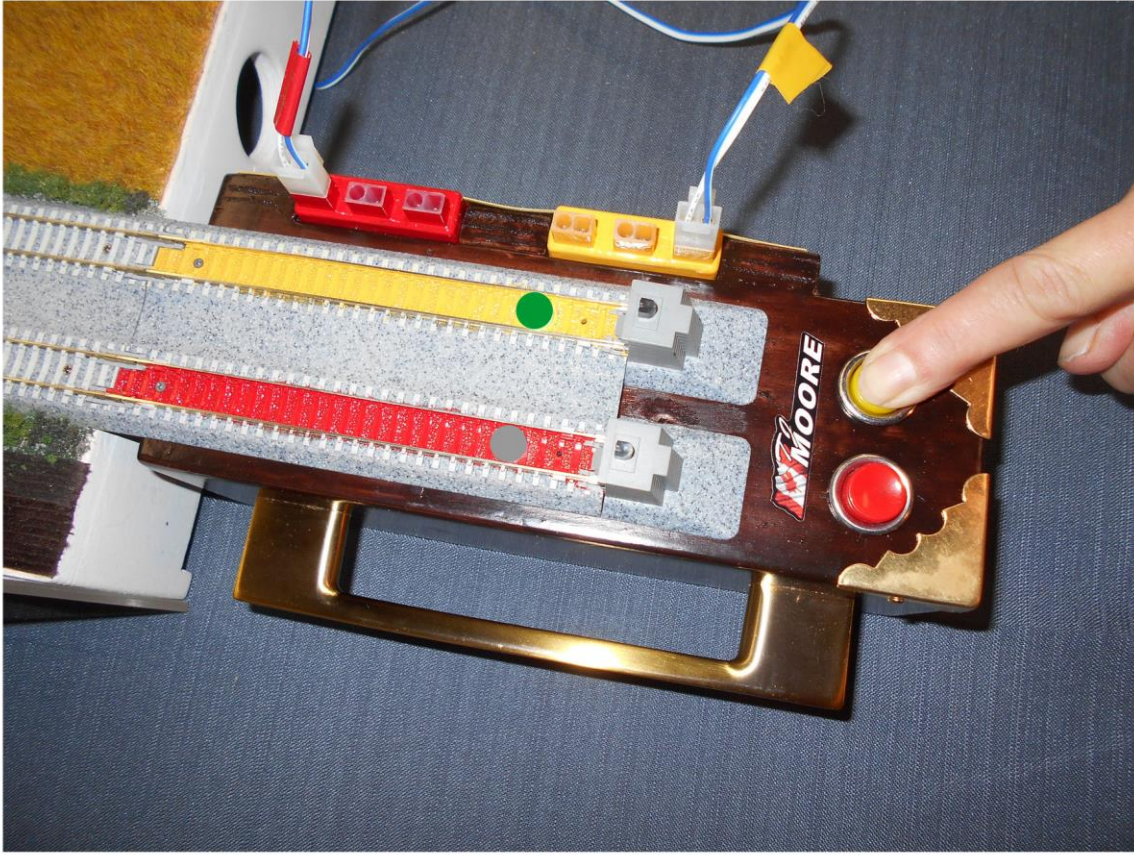
MATERIALS FOR TESTING DEMONSTRATION



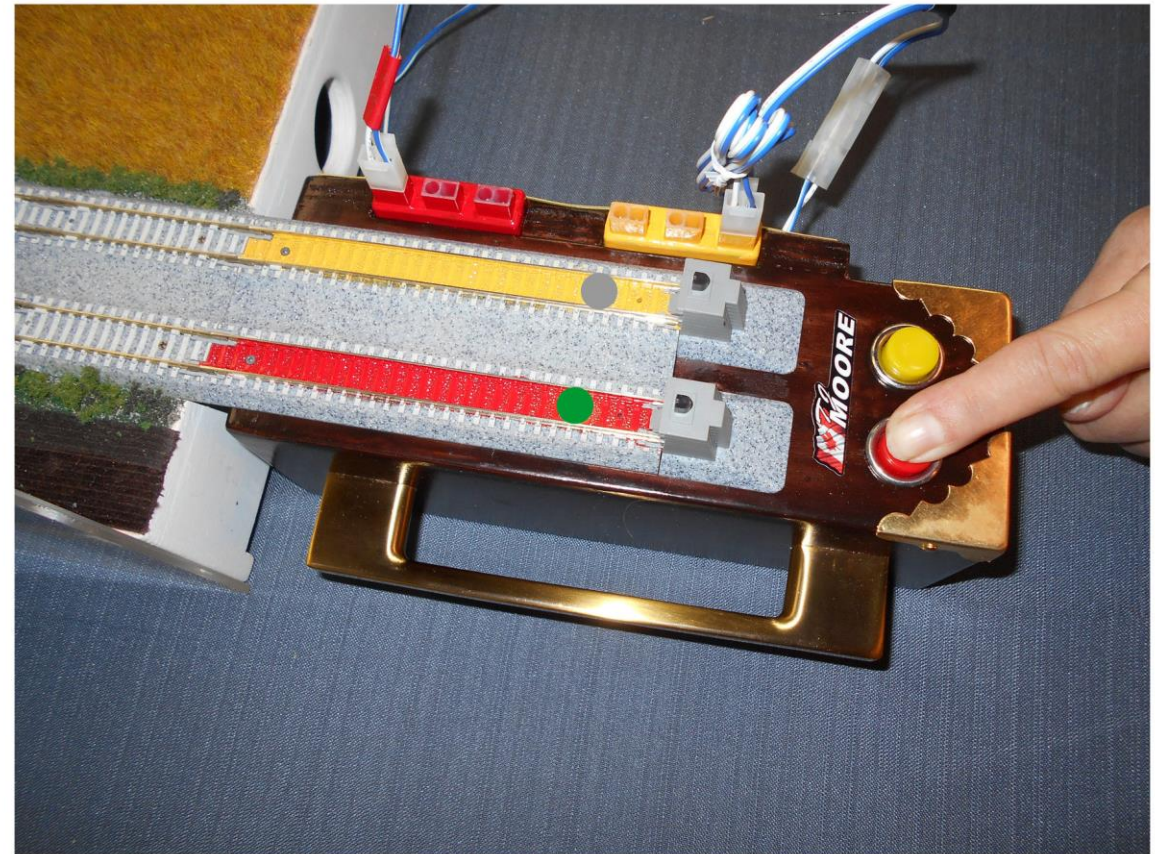
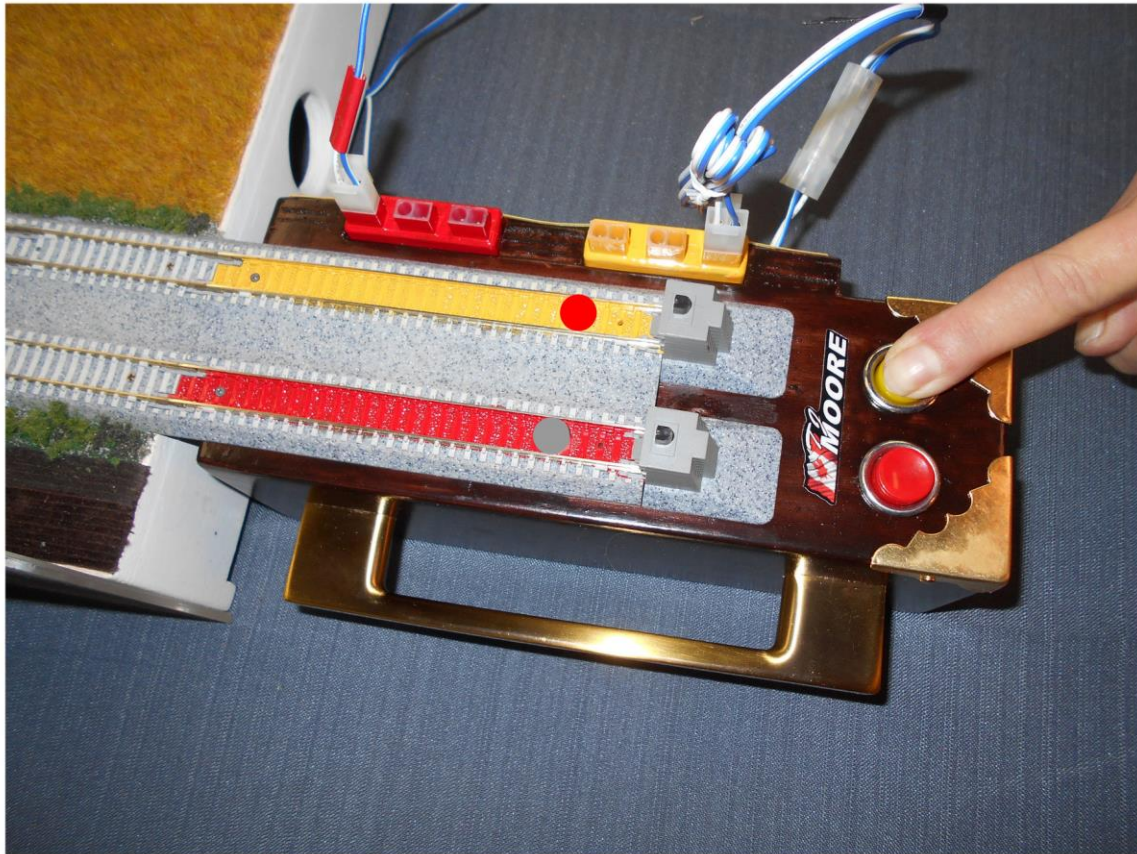
A module (one of my favorite Saskatchewan wheat field modules) with access to the module's power feeders.

The Tester.

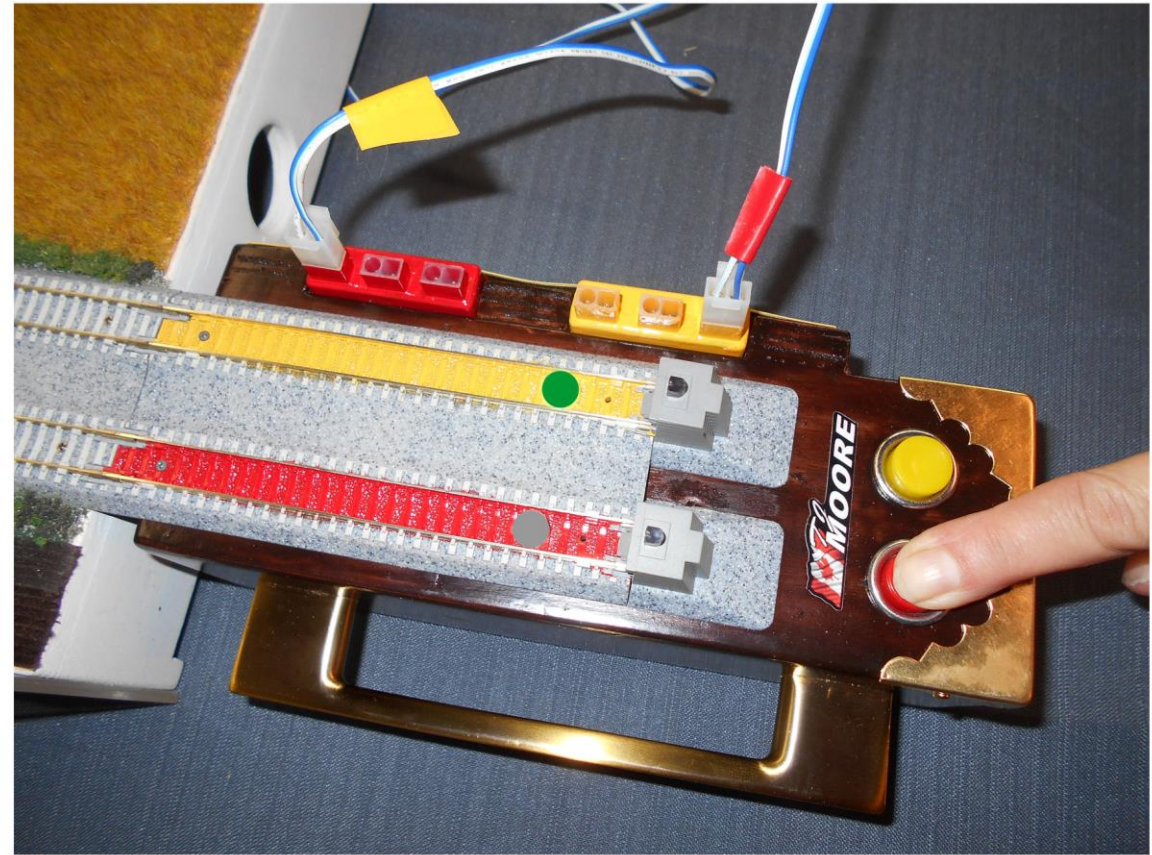
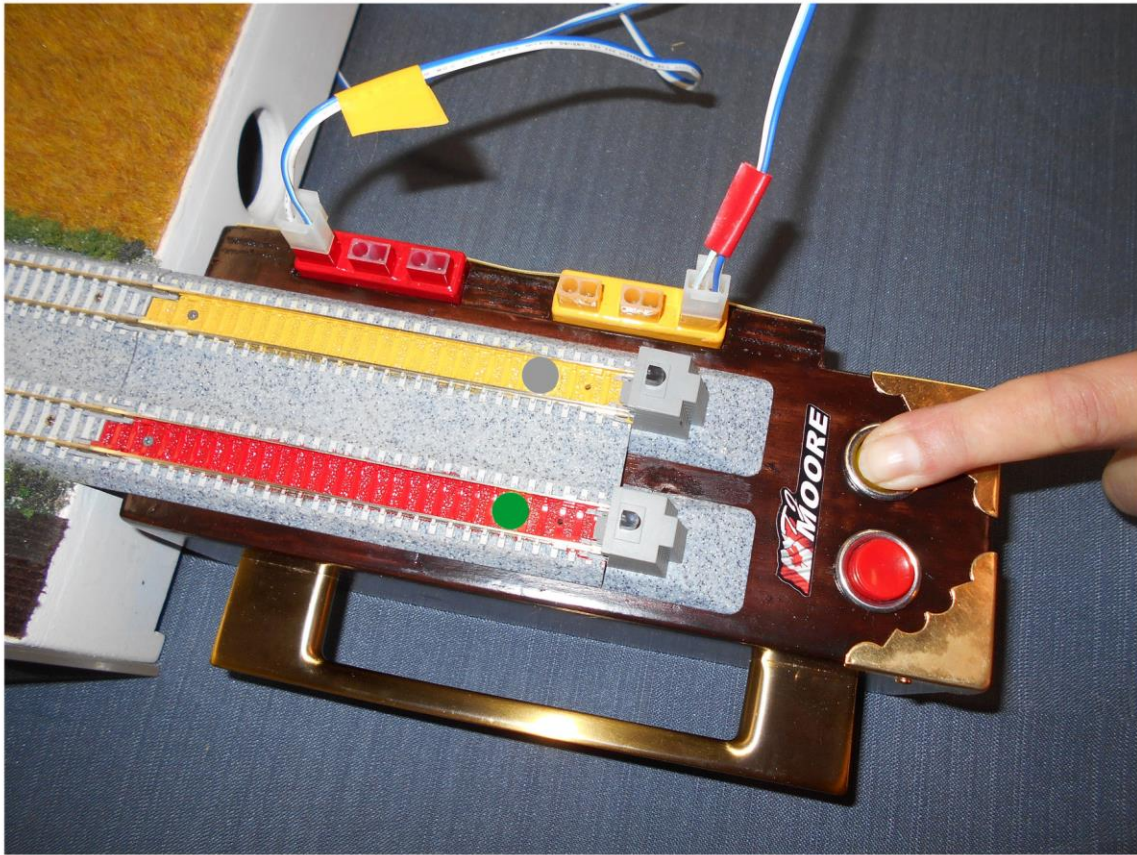
The modified KATO DC Extension Cord with the Black tape marker is one of my Reverser Cables used in series with the module's Yellow track power feeder to create a Blue White Blue White electrical connection.



For this test the module is connected to the tester properly red to red and yellow to yellow. On the left the Yellow test shows a green light and on the right the Red test also shows a green light indicating that this module is properly wired and ready for inclusion in the layout.



In this demonstration I have inserted one of my adapter cables into the Yellow track wiring creating a BWBW situation. On the left the Yellow test shows a red light indicating incorrect wiring. On the right the Red test shows a green light indicating correct wiring. If the module was mistakenly wired WBBW (due to a misunderstanding of the BWB standard) the Red test would show a red light also.



For this demonstration you can see that the module under test has had it's cables incorrectly connected to the tester. The module is connected red to yellow and yellow to red to simulate a module which has it's cables incorrectly colour coded. (OH YA! It happens!) On the left a Yellow test shows a green light on the red side. On the right a Red test shows a green light on the yellow side indicating the incorrectly connected cables. Change the colour coding on the cables, connect them properly according to the corrected colour coding and all will be well.

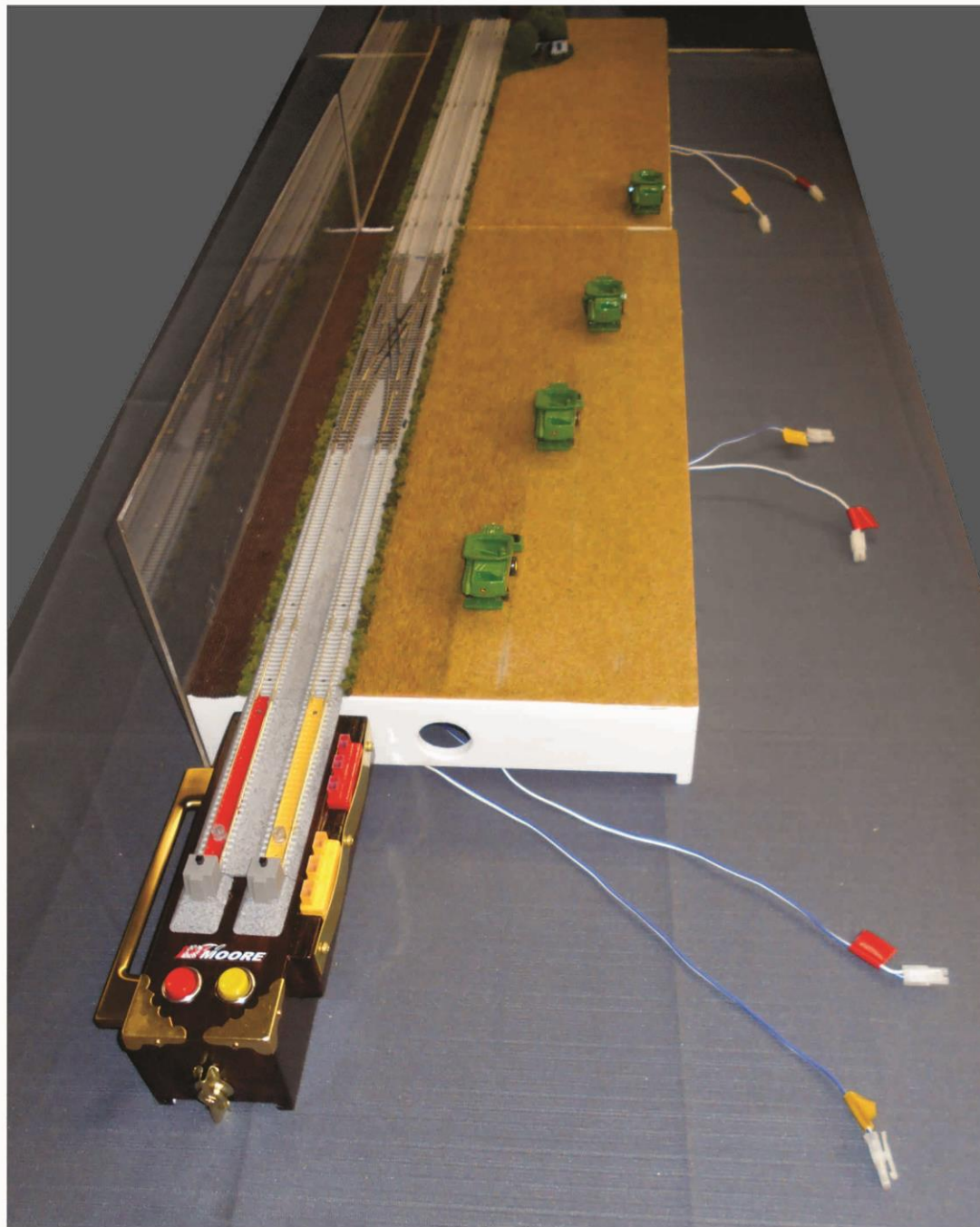
Designed for the right end only? NO!

Well, maybe, but only because of the painted colour markings. Thanks to the BWWB wiring standard it doesn't matter which end the Tester is connected to, except that the colour coding will be wrong. So, if the Tester must be connected to the module's left end red is yellow and yellow is red. Plug the module's red cable into the Tester's yellow socket and the yellow cable into the red. Pressing the yellow button will give a light for the red track and the red button for the yellow track.



But, why the left end??

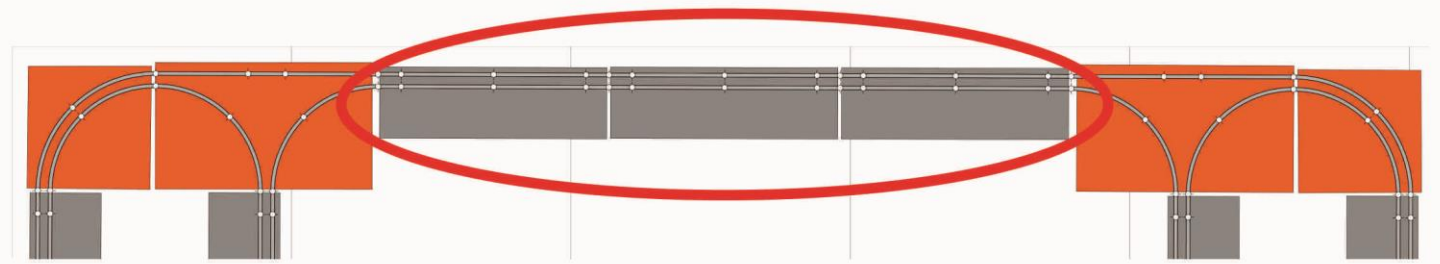
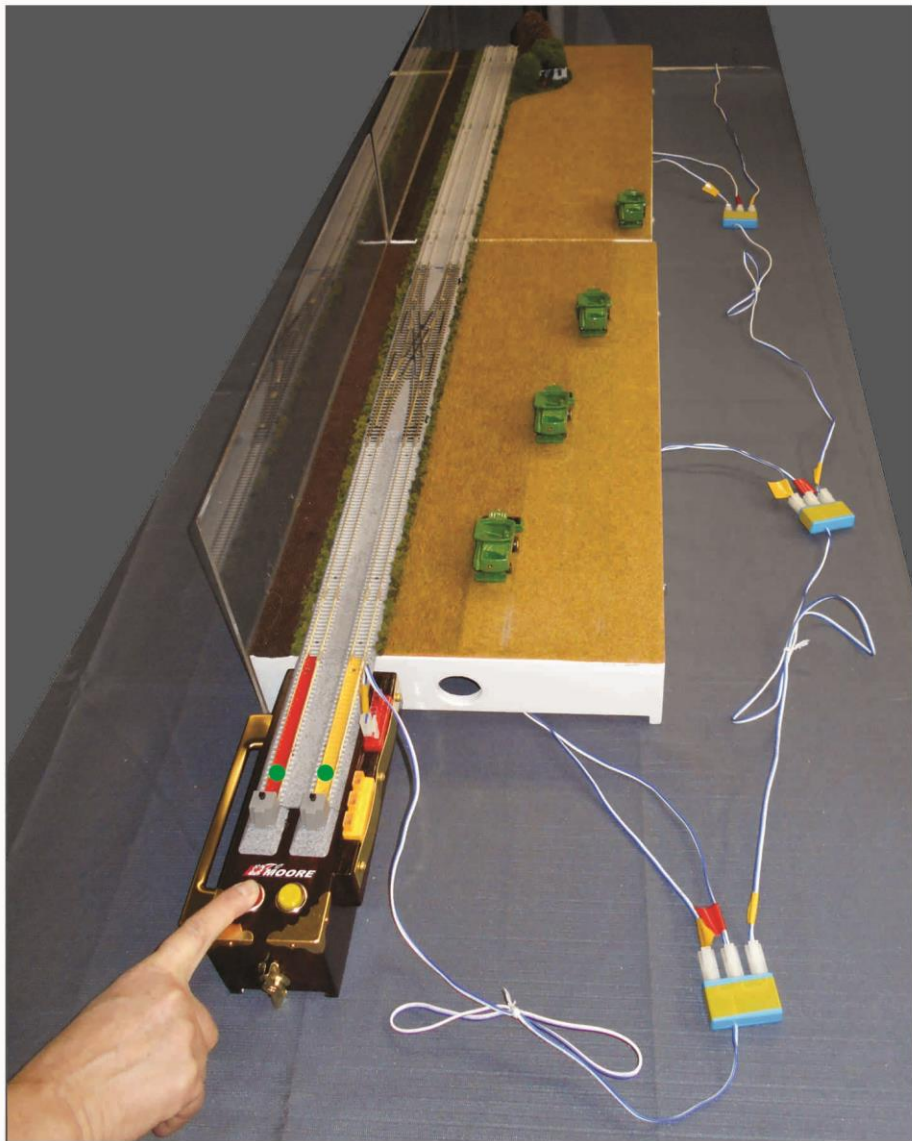
If a module has a double crossover it effectively cuts the module in half requiring a power source from each end. So, it's best to have power connections at each end. Or, if a junction has power connections to each of the three tracks. Or, depending on the module build.



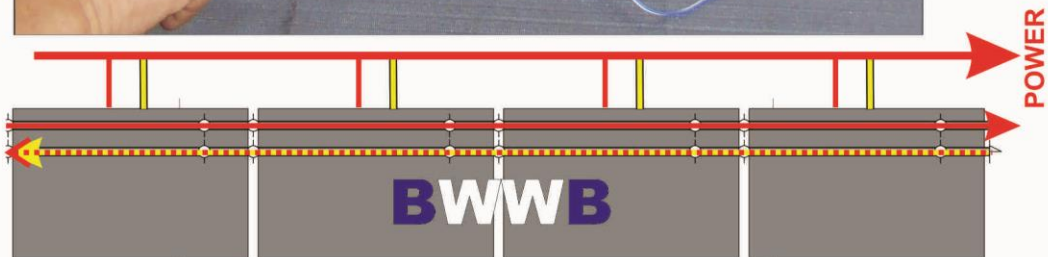
In a Layout?

Several modules connected together can also be tested together. Here two modules (again my Saskatchewan wheat field) are connected together with their power cables accessible. Why three sets of cables? Remember what I said about modules with double crossovers? The module closest has power feeders at both ends due to the crossover.

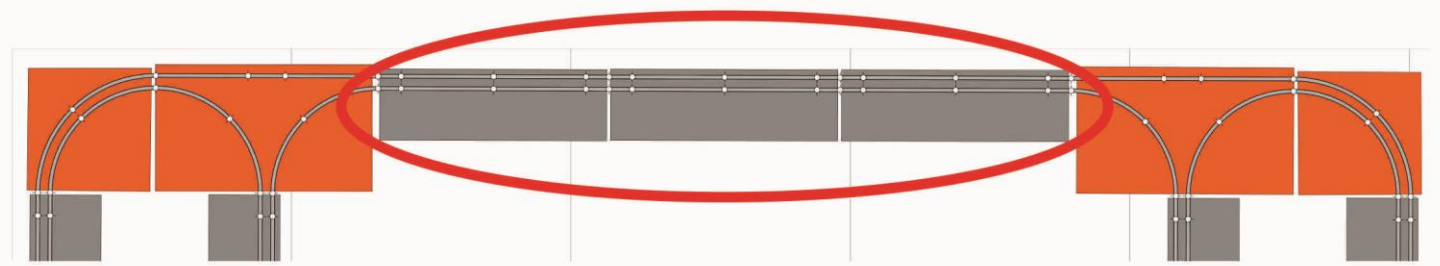
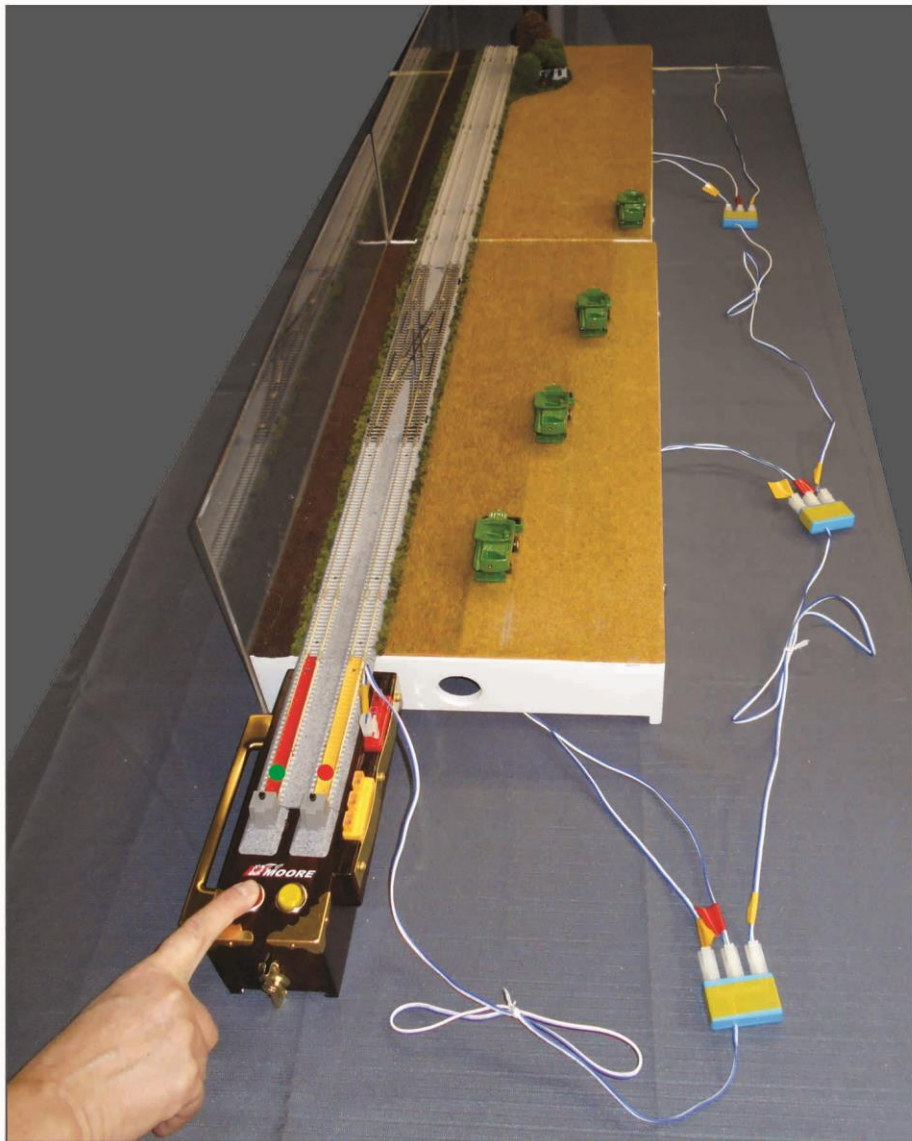
(Why didn't I splice the two feeders together? Because I don't mess with the wiring any more than I need to. Most times I wouldn't use the furthest feeder of the two because the feeders of the far wheatfield would be used)



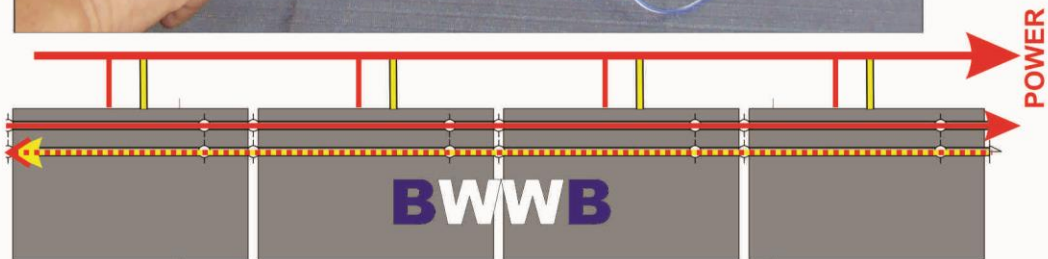
With both tracks wired to a single bus, such as a single row spine between two loops, normally part of the red line, the bus is connected to the Tester's red socket in this demonstration. Pressing the button results in an indication on both tracks. If the modules were wired BWBW the yellow indication would be red. If only one module was incorrectly wired one or both indications would be off indicating a short, depending on the nature of the problem.



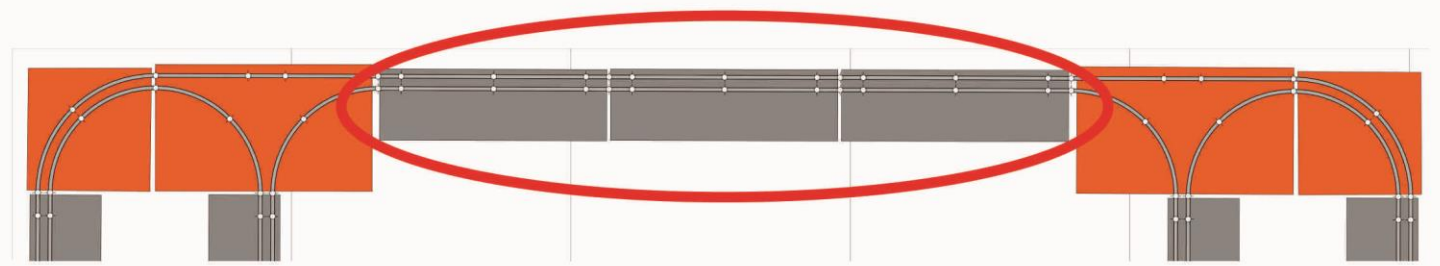
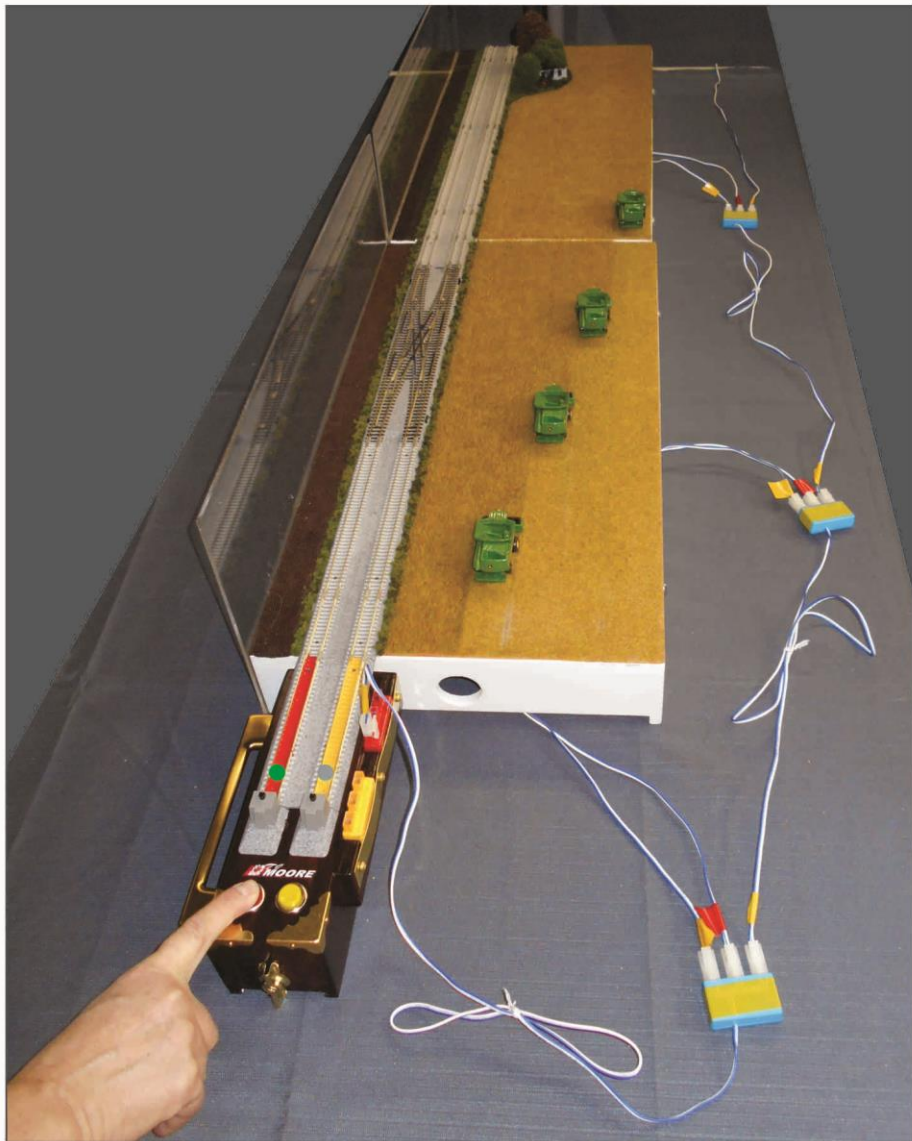
This would also hold true for a classic T-TRAK loop with only one power source supplying the loop with one train per track running in opposite directions. (for DC or DCC supply)



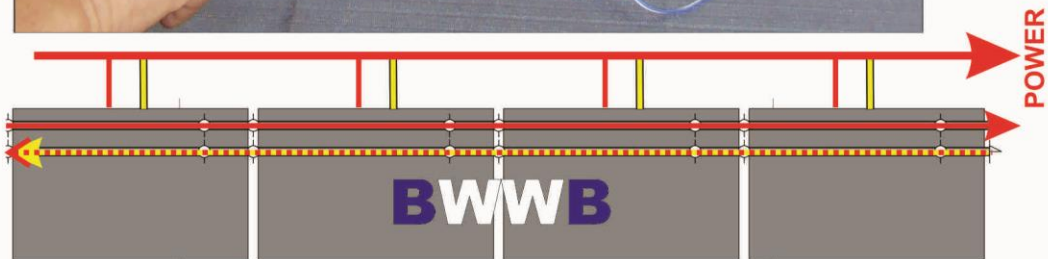
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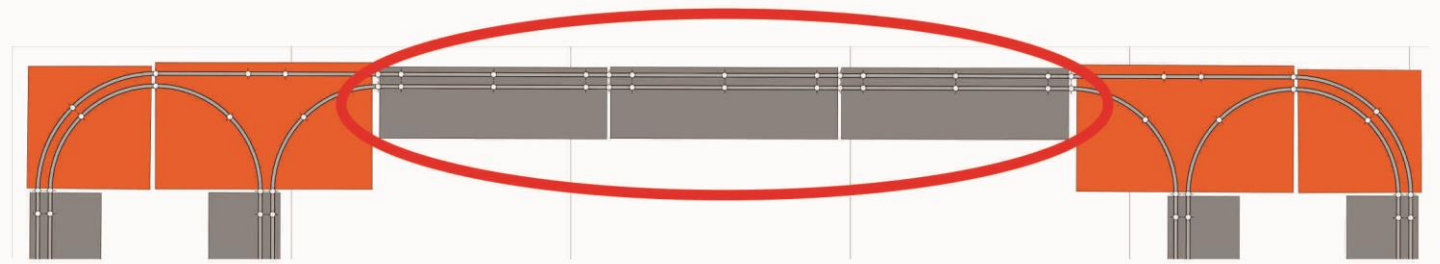
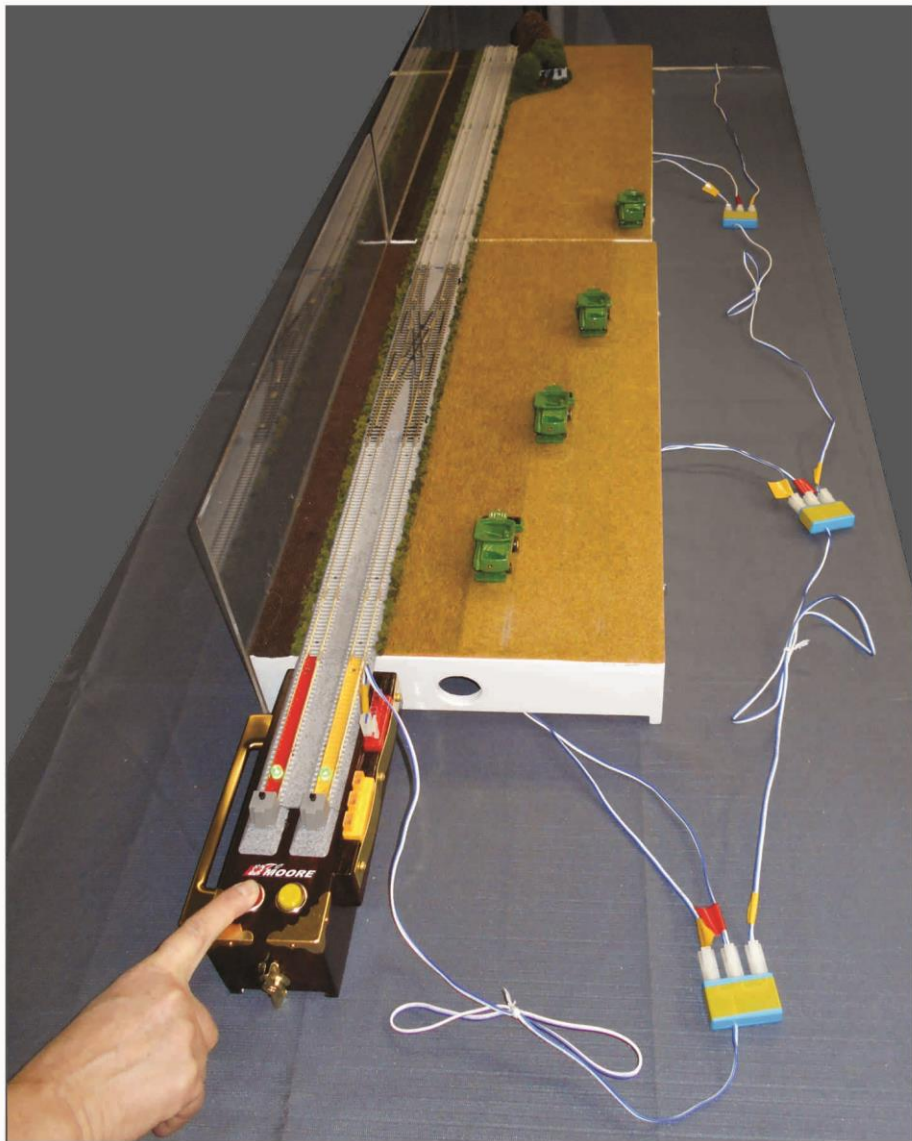
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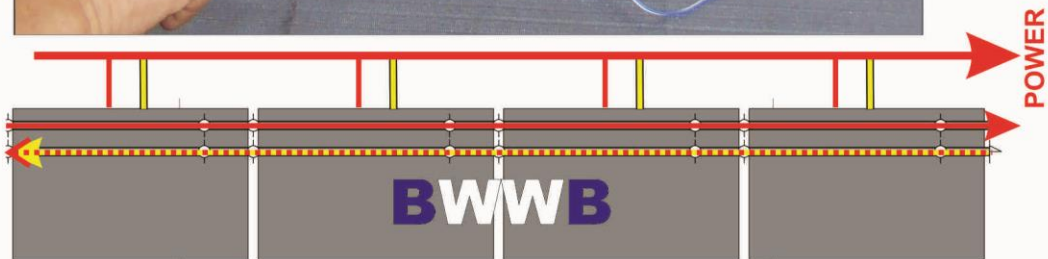
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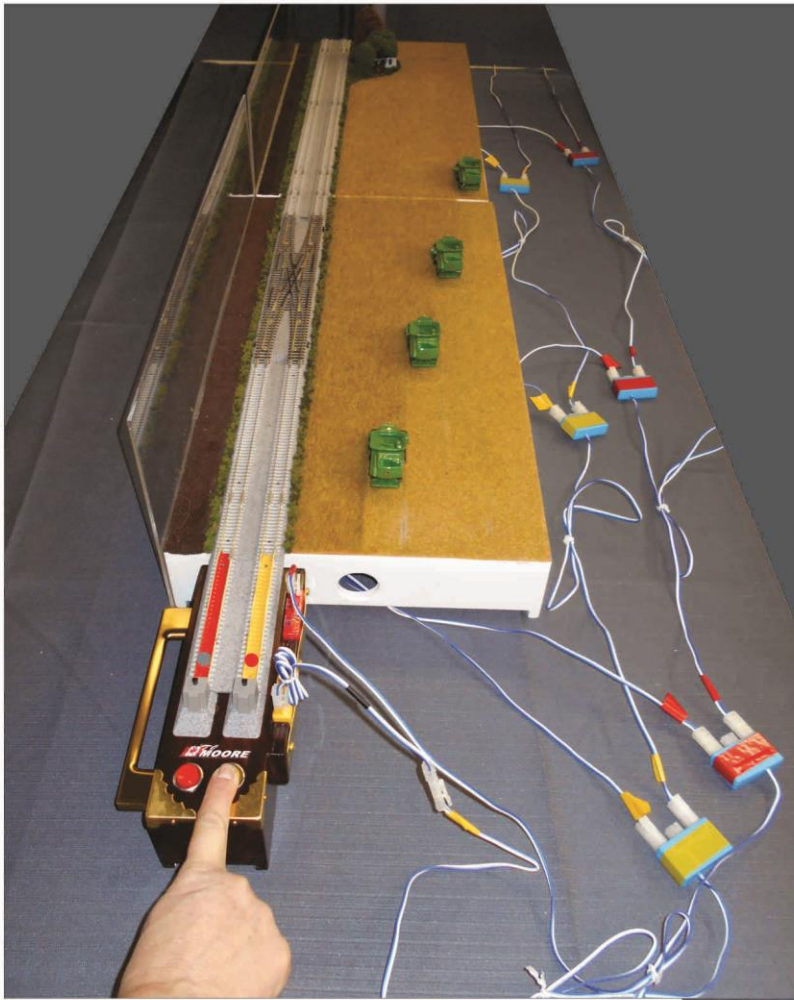
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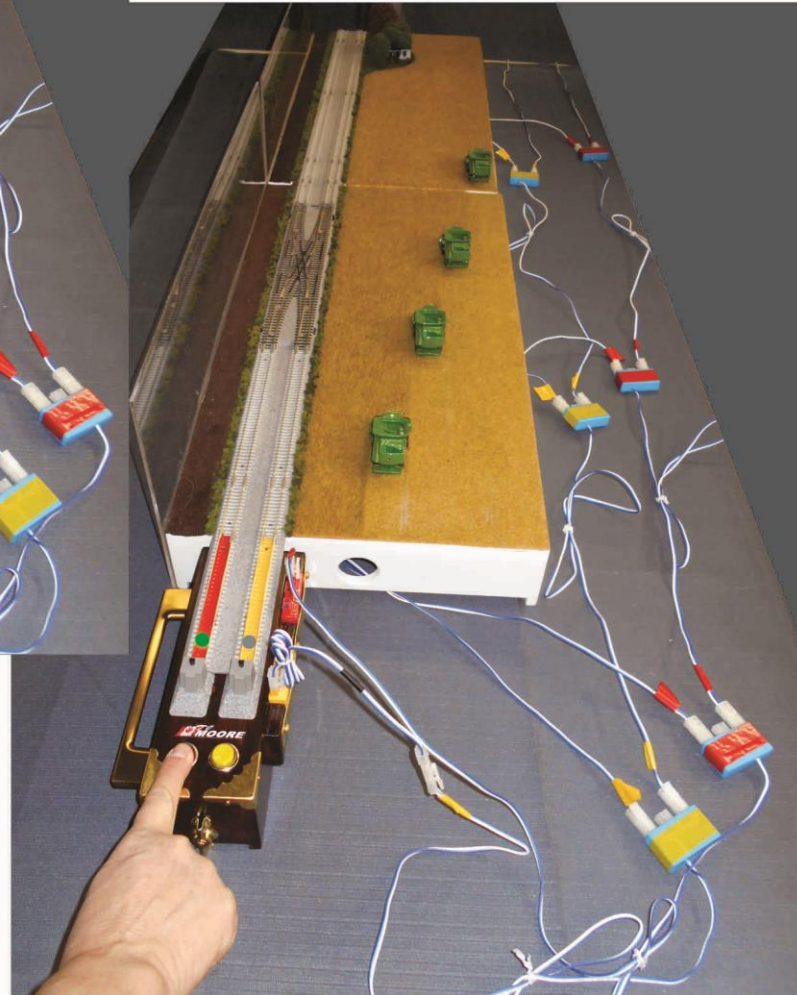
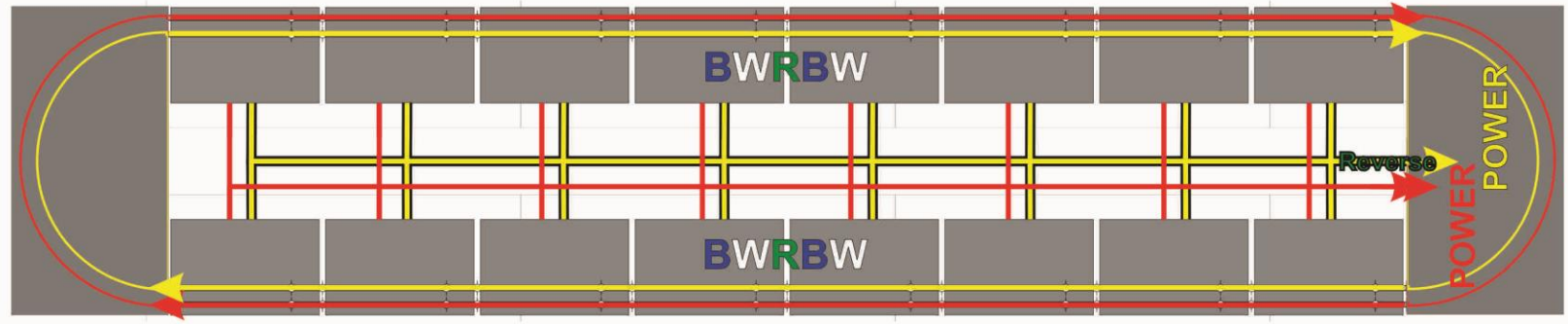
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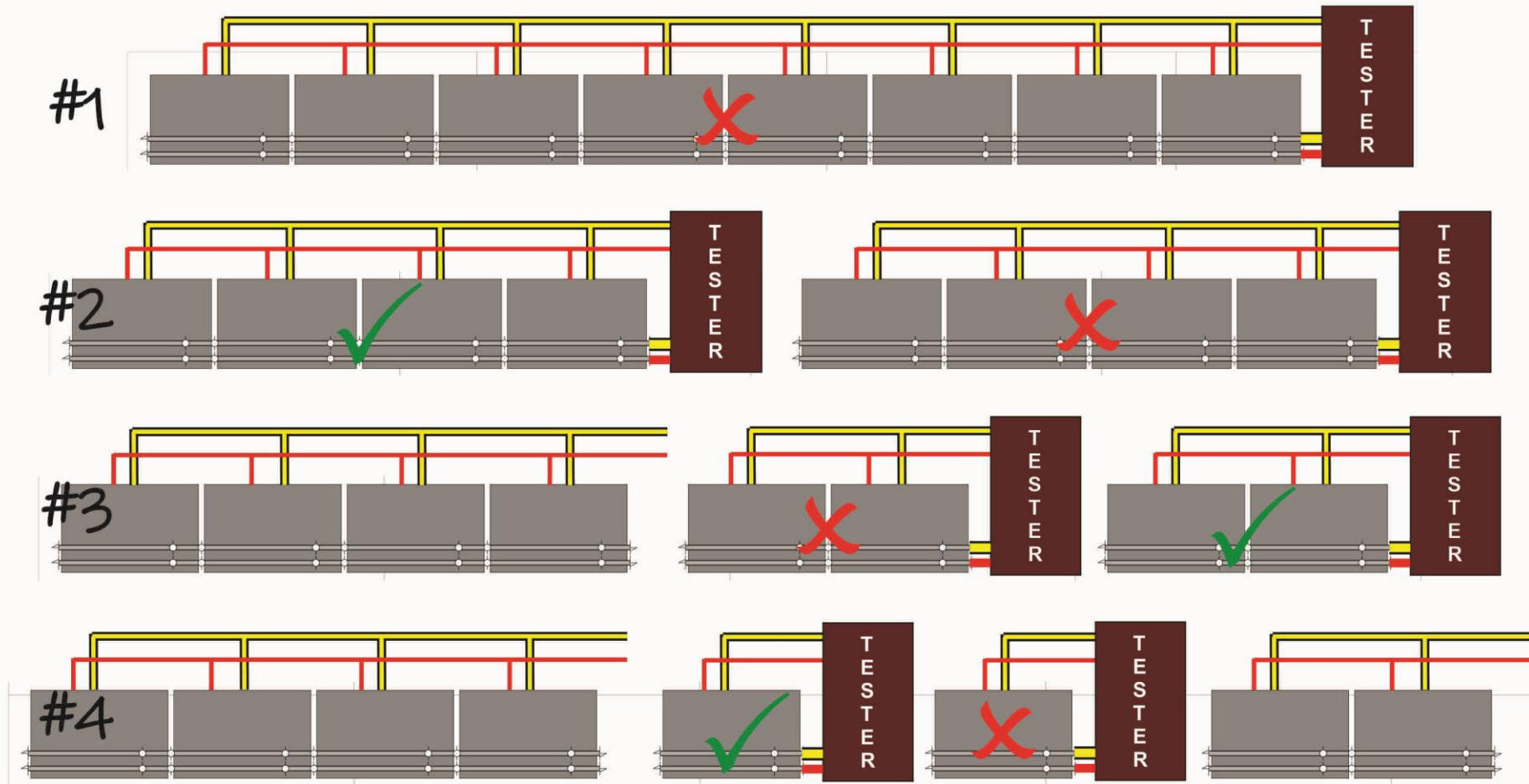


Same thing ...
only different!



Testing multiple modules connected together gives the same testing result indications as testing single modules EXCEPT that a single BWRBW module would create a short circuit in the yellow loop resulting in no light indication. In the examples here there is a Reverser Cable in series with the yellow bus at the Tester socket (note the black identifier) resulting in a red light test indication. Just what we wanted for a BWRBW loop layout!

Finding a Faulted Module By Sectionalizing



A simple "Sectionalizing" procedure of testing bad groups of modules one half of the group at a time will eventually identify the problematic module without totally dismantling the layout. Remember, if the problematic group of modules is found in the first group tested the second group must also be tested and proven to be good and not hiding a second problem.

A breadboard with electronic components including a grey integrated circuit, several resistors, and jumper wires. A yellow push-button switch is connected to the breadboard. The background is a dark blue textured surface.

REMEMBER

**If you DON'T get a light
DO NOT hold the button down!
YOU HAVE A DEAD SHORT!!**



THANKS

For Watching

A [ZoomTRAX](#) presentation by  True North Rail