

MARRS

Layout Set-up SOP & Tool List

Initial posting: November 11, 2018
Last update: March 31, 2022

Prior to Show

1. All members should ensure that their module(s) are in good repair (i.e. show worthy)
 - a. Make sure that the module(s) have the requisite legs, feet, nuts, bolts, washers, connector track, four 2" or 3" C-clamps, & skirting
 - b. Make sure that the requisite tools for set-up, take down, and minor repair are available - refer to appended [Tool List](#).
 - c. Make sure engines, rolling stock, and scenery materials are available
 - d. Module(s), tools, trains and scenery should be staged in a central location ready for loading and transporting to show.
2. If a member cannot be at a particular phase of the show, it is their responsibility to find a maintainer—in case repairs are needed. Each member is responsible for their own module(s) - this is especially important if it is raining or precipitation is forecast (think: leaky roof).
3. Pre-Show Checklist - Modular Superintendent
 - a. Get participating module list from members
 - i. Set setup time
 - ii. Arrange transportation (as required)
 - b. Design module layout and track plan
 - i. Designate Command Station and Booster locations
 - ii. Designate UTP location
 - iii. Establish back-up plan (as required)
 - c. Establish module and DCC/electrical set-up crews
 - d. Assign functional responsibilities for module and DCC/electrical set-up crews
4. Pre-Show Checklist - DCC/Electrical Lead
5. Pre-Show Checklist - Secretary or designate

Set-up Day

Each step outlined below must be completed **BEFORE** moving on to the next step.

1. Transportation and unloading
 - a. Unload module(s) tools, trains and scenery in the general location of the layout
 - b. Check with the Modular Superintendent or the track plan for the location of each module
2. Module set-up - Other than your OWN set of modules, do **NOT/NOT** connect modules (either track or electrical) until they are checked by the Modular Superintendent or his designated representative.
 - a. Assemble and set-up all modules according to the track plan
 - b. Level all modules - refer to leveling procedures
 - c. Check alignment of modules
3. Module clamping - Do **NOT/NOT** connect the modules (either track or electrical) at this stage
 - a. Starting with the lift bridge, begin clamping the modules together with C-clamps
 - b. Ensure smooth transition between modules
 - c. After all modules are clamped together, check lift bridge for alignment and proper operation
4. DCC/electrical connection
 - a. Place Command Station, Boosters and power supplies per track plan
 - b. run extension cords to power supplies
 - c. Place district flags and insulated rail joiners for district separations
 - d. Starting at the Command Station district, connect wires to mainline and power to booster and test operation
 - e. Working **counter-clockwise (anti-clockwise)** from the Command Station, connect the next booster, and test operation. Repeat until all boosters are connected and tested.
 - f. After all boosters are connected and tested, install the UTPs according to the track plan and test operation
5. Track Connection
 - a. Mainline ONLY: place and connect connector track
 - i. Ensure mainline is double insulated
 - ii. Fix any mismatches in connector track
 - b. Connect power poles within districts - Do **NOT/NOT** cross district boundaries
 - c. Test run a train on the mainline tracks (both inner and outer loops)
 - d. Clean mainline
 - e. Non-mainline tracks: place and connect connector track
 - f. Clean non-mainline tracks

Set-up Day *(continued)*

6. Attach backdrops (if applicable)
7. Attach safety guards (if applicable)
8. Attach skirting
9. Add scenery to module(s)
10. Add trains
11. Smile - even if you encounter problems (which you will). Solving problems is an integral part of the fun we're all having!

Show Days

1. Test run layout prior to show opening
2. Resolve any track, power, or control issues
3. run trains
4. have fun
5. rotate operators
6. have more fun

Tear Down

1. Remove trains
2. Remove scenery
3. Remove skirting
4. Remove safety guards
5. Remove backdrops
6. Load your vehicle(s)
7. Go home (please drive safely!)
8. Relax...

Recuperate...

& Remember:

“...a bad day running trains is still better than a good at work!”

Tool List

Module assembly, disassembly, & repair

- cordless power tool with sockets and driver bits
-and- / -or-
- socket set with ratchet, & wrenches
- pliers - slip joint & long nose
- screwdrivers
 - large & small Philips screwdrivers
 - large & small slotted screwdrivers
- tape measure (minimum 4')
- level (torpedo, 2', 4', or 8')

Additional SUGGESTED tools for module care & repair, just in case

- drill & bits
-and- / -or-
- rotary hand tool (a.k.a. Dremel Tool) with drill bits & other accessories
- work knife, or box cutter knife, or multi-hand tool with knife blade
- hammer
- wood saw
- hack saw
- rasp
- spring clamps
- scissors
- plastic drop cloth (2 mil or heavier - in case the roof leaks)

Electrical stuff

- extension cord (25' minimum, 50' or 100' preferred)
- power strip - multi-outlet
- wire stripper/cutter
- soldering tool, solder, flux
- electrical tape
- 14 or 16 gauge wire
- 20 or 22 gauge wire

Stuff to stick things together

- Duct tape or Gorilla tape (a.k.a. 100mph tape)
- Super Glue - gel preferred (a.k.a. Cyanoacrylate adhesive, CA)
- Elmer's white glue, or wood glue (**BOTH a.k.a.** Polyvinyl acetate, PVA, PVAc,)

Tool List (continued)

Cleaning up

- Brush or broom & dust pan
- Clean rag(s)
- Hand sanitizer

Track installation, maintenance, & repair

- curved long nose pliers
- track nails
- track cleaner(s) - Brite Boy, pink gum eraser

Rolling stock and locomotive repair

- NMRA HO Standards Gauge
- precision screwdrivers, slotted & Phillips
- needle nose pliers
- hobby knife (a.k.a X-acto knife) with #11 blade (& other blades as required)
- small (needle) files
- Kadee coupler pliers (J-pin pliers)
- Coupler gauge
 - Replacement Kadee couplers
 - Replacement wheelsets (metal with non-conducting axle preferred)

Please REMEMBER and PRACTICE these IMPORTANT RULES if you need to borrow another member's tools:

- ***ASK first***
- ***RETURN tools promptly after you finish using them***
- ***SAY, "Thank You!"***

Change History:

March 31, 2022:

4. DCC/electrical connection, e. change to: **counter-clockwise (anti-clockwise)**