

Handout: Planning for Operations

Style of your RR & some basic ideas regarding operations

Start with a plan, then make a preliminary design. Run copies of right and left turnouts and tape them together on the floor for a full size track plan. Modify the design on paper before cutting any lumber. Create a track plan that fits your needs. Build basic benchwork without scenery lay track and begin basic operations. Test the plan and get feedback from others.

Types of train orders & or train movements:

Through train - Easiest to operate going only from point A to point B. Examples are unit coal/ore, container, auto racks and grain trains. Downside is that they are boring to run. They are good jobs for new or visiting crews because they allow the crews to get a feel for the railroad.

Out & back freight - Takes a string of cars from one location then sets them out and picks up an identical number of cars and returns to the starting point. Only trailing point operations. Good jobs for the operator with average skills.

Way freight or peddler freight - Leaves a yard or siding and makes stops at every point possible dropping and picking up cars as it progresses along the railroad. Some jobs require facing point operations. Good job for the experienced operator or someone who takes the time to read and comprehend the train orders.

Job with a combination of several additional tasks - Some examples would be a WYE move, a power swap.

Passenger train - Many possibilities if your layout has been designed with this type of operation in mind.

Consider excursion trains or a dinner train.

Benchwork

Design Considerations:

A. Height: Normal bench height is 48" this can vary, but a standard 8 foot piece of lumber cut in two yields 2 legs.

B. Reach length: An average person standing at the edge of the layout can reach in 30" to access rolling stock for coupling & uncoupling.

C. Access: Aisle width goal is 36" or more. Active work areas such as yards & industrial switching areas should not be placed back to back on aisles.

D. Grades: For HO scale a grade of 2% coming out of staging is a good point to start.

As an example: If you want to cross over a track lower track on a helix - 3" of separation is required. A 2% grade requires 13 feet of track to rise 3".

E. Construction: Construction techniques vary greatly. The main goal is to have sturdy bench work with adequate support for road bed and scenery.

F. Wiring: One of the most critical parts of building a reliable model railroad is the electrical/electronic connections. If this is done correctly and well documented, it will result in pleasant operations with few if any glitches. If you are not comfortable doing this, then get a qualified person to take this on.

G. Multi deck designs: Be careful with the spacing between the decks 12 inches is a minimum.

H. Staging, hidden trackage & helices : These require careful planning to avoid operational problems with derailments and access. Plan for as much staging track as possible.

I. Floor covering: Carpet is a good method, but those foam interlocking squares are less expensive and easier to clean.

J. Storage for paperwork and uncoupling tools: Provide these or suffer from operators setting things on the scenery.

Trackwork

A. Scale : HO scale is most common and has the largest selection of equipment.

B. Main Line: On Cork or Homasote roadbed with 36" minimum radius for best overall performance.

C. Selective compression: One Mile of track in HO scale = 60.69 FEET

D. Siding lengths :

One length of flex track [36"] will hold : 7 Cement hoppers 34 feet long, 6 Box cars 40 feet long, 4 Box cars 50 feet long, 4 Grain hoppers 55 feet long

E. Transition from main to sidings & yards should be done using tapered strips of cork roadbed or soft wood.

F. Yard designs: Stub end provides longest sidings. Pull through yards are more prototypical, but take more room. Distance between tracks cannot follow prototype because your fingers are too large.

Tail tracks for yards are required. Using the main line for a tail is acceptable to save space.

Train orders & session schedule

Use a standard format for all similar documents. Identify all locations where activities take place. Add directional arrows where required. Paperwork should fit into apron pockets or be small so it does not interfere with operations.

Continue to edit and improve paperwork as you begin regular operation sessions.

The goal is to provide clear and correct information.

Minimize abbreviations . Color coding is a good way to help in creating clear written communication. Provide plenty of pencils.

Setting up your schedule for monthly operations

Length of operation session: Shoot for 3 hours. Don't try to cram too much in a session at first. Select a time and day and try to run once a month. A common time frame is 6:30 PM to 9:30 PM.

Start slowly and make changes as you and your crew gain experience. Try to get at least 2 other people who are your "regulars". A dispatcher is responsible for handing out the jobs and tracking trains as they move across the railroad. Try to get someone who likes this job and encourage that person to do it every month.

Crew Size

Crew size depends on the size of the layout, number of yards & industrial areas where an operator can be kept busy during most of a session.

A typical crew would consist of these jobs: dispatcher, yardmaster , switching jobs , road crews (freight or passenger) of 1 or 2 persons.

Once you have begun regular operations, assign new or inexperienced crew to work with experienced operators for at least one session.

Hosting Operations

Some tips for setting up operation sessions.

Provide cup holders, uncoupling devices and clipboards or car card holders at all work stations. Provide fully charged batteries for throttles and radios. Provide plenty of sharp pencils at all work stations .Check all paperwork to make sure car cards/train orders are correctly placed. Check all sidings and staging to make certain that car cards/train orders are in place.

and all cars are blocked for the session. Correct any maintenance issues from the previous session. Have a short meeting before starting. Topics are usually the crew assignments, special conditions on the railroad this month, changes in motive power or in the paperwork. Remind operators to reset turnouts to the main after moves. Don't expect to run any jobs on your railroad. You will be very busy giving advice, explaining where things are & doing the inevitable troubleshooting.

Development of operations to suit conditions

As your crew becomes more experienced, they will start to make suggestions & requests regarding changes to the operation of your railroad.

If you remain flexible and are receptive to these changes, you will have a happy loyal crew.

If you do nothing, or argue that these changes cannot be made, then you will soon find that you are running the layout with a different crew each time.

After we were operating for some time, I realized that we could have more "work" if I got rid of some non railroad scenery and added a small 25 car capacity yard. This not only created more work, but also one more crew position.

If you are doing a lot of industrial switching; additional car spots are of great benefit.

I have added tail tracks and car spots at the request of regulars who see things I never envisioned when first designing the layout. Run around tracks are also a good idea.