THE OPS SESSION

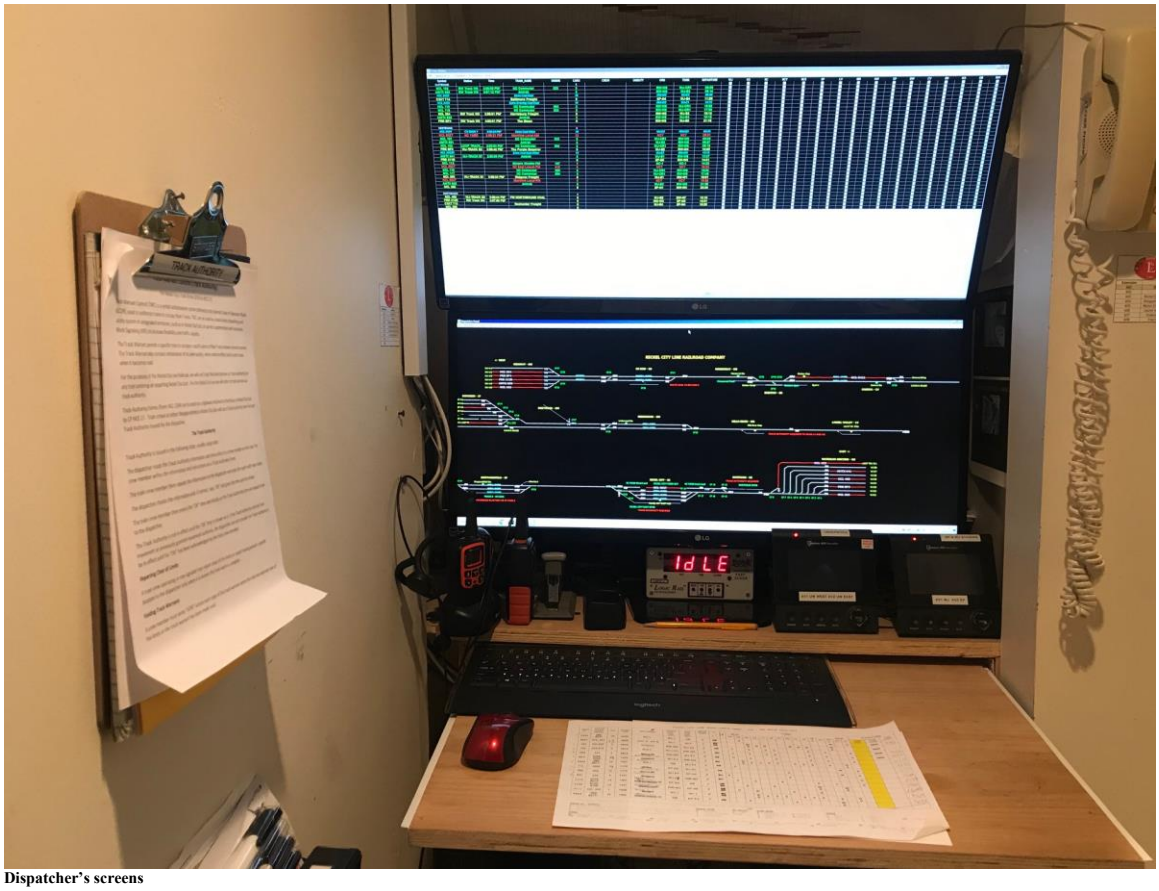
Each ops session covers an 8 hour period on a fast clock set at a rate of 2:1 (8 hours in 4 hours). Three sessions are required for a 24 hours day. The first session starts at midnight and ends at 8am (Session A). The next session runs from 8am to 4pm (Session B). The final session runs from 4pm to midnight (Session C). The following paragraphs describe the roles and responsibilities of operators during each session.

Dispatcher

The dispatcher is responsible for routing all trains and scheduling train meets during each ops session. Dispatchers work 8 hour shifts (4 real hours). There is one shift per session.

Dispatcher Screens

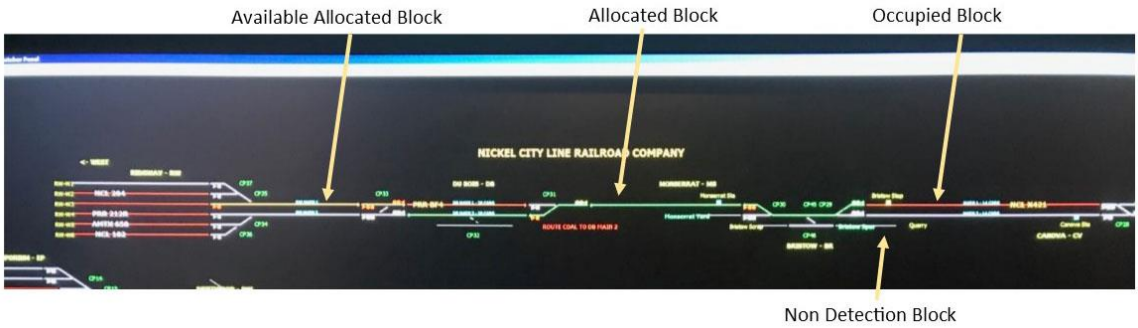
The Dispatcher's screen displays a schematic of the layout. The screen is laid out with the East to the right and West to the left (this is reverse orientation from the Yardmaster's screen).



Dispatcher's screens

Red track segments show occupied blocks on the railroad. White track segments are unoccuppied blocks. Green track segments with arrows indicate allocated sections for a train. Yellow track segments with arrows indicate an allocated block is now available,

but cannot be used until the dispatcher releases, and reallocates the block to another train. Blue segments are allocated for Track Authority by the dispatcher. Gray track segments are blocks without block detection.



CATS Dispatch Screen Explained

The dispatcher uses the Computer Automated Traffic System (**CATS**) by Rodney Black. The dispatcher's screen is set up for Dispatcher Train Control (DTC) which means that the dispatcher must allocate a block(s) to a train in order for signals to indicate 'proceed'. Once the train clears the block(s), the dispatcher must release the block and then may reallocate it for another train. All signals will display the most restrictive setting (stop) until a block(s) is allocated for a train by the dispatcher. When the dispatcher reserves a route, all signals in one direction of travel may show "movement allowed" indications. All signals facing the opposing direction of travel remain in their most restrictive aspect.

Reserving a route also locks the route. This means that until the existing reservation is cleared, a reservation cannot be made in the opposing direction or a turnout on the route cannot be changed by the dispatcher. The computer will not allow the dispatcher to set an unsafe route. An unsafe route is one which conflicts with an existing route, one in which the dispatcher has granted local switching to a block, one in which the dispatcher has taken a block out of service, one which has one or more turnouts aligned to a different route, or one in which a block is shown as occupied.

The signals for the reserved route will obey the "Signal Aspects and Indications" of the employee handbook. The symbols representing the signals on the dispatcher panel will be "empty" (white or grey) if not involved in a reserved route; red, if in the opposing direction; yellow, if the next signal is red; or green, if the next signal is not red. Thus, the symbols mirror the signals the engineer sees, to the extent that can be done with five colors. The colors of the signal icons are only loosely connected to the actual layout aspects.

The way the dispatcher reserves a route is to click the left mouse button when the mouse is positioned over an "empty" or "off" signal symbol. If the reservation is accepted, then the signal symbol changes color and the tracks composing the reserved route turn green with an arrow head pointing to the exit7 of each block. A subtle distinction exists between white "empty" icons and "grey" empty icons. White ones have a physical signal associated with them on the layout. Grey ones do not; thus, the color difference is a reminder to the dispatcher that the train engineer does not see a signal that the dispatcher does. Tip: you will

get more reliable response by clicking on the signal icon "head" (not the mast) because of the way **CATS** looks for "hot zones".

There are two ways to clear a reservation. The dispatcher can cancel a reservation by clicking the left mouse button when positioned over a signal icon that is green or yellow. Alternatively, when a block within the reserved route is occupied, the reservation is cleared, but the block still shows occupied. This means that the signals again show their most restrictive aspect.

Throwing Turnouts

If a section of track contains a turnout, that turnout is under dispatcher control, and the block is not occupied, reserved, or given to local control, then the dispatcher can move the turnout by clicking the left mouse button when not over any signal symbols or train labels while the mouse cursor is near the switch points (preferably in the "vee" between the routes).

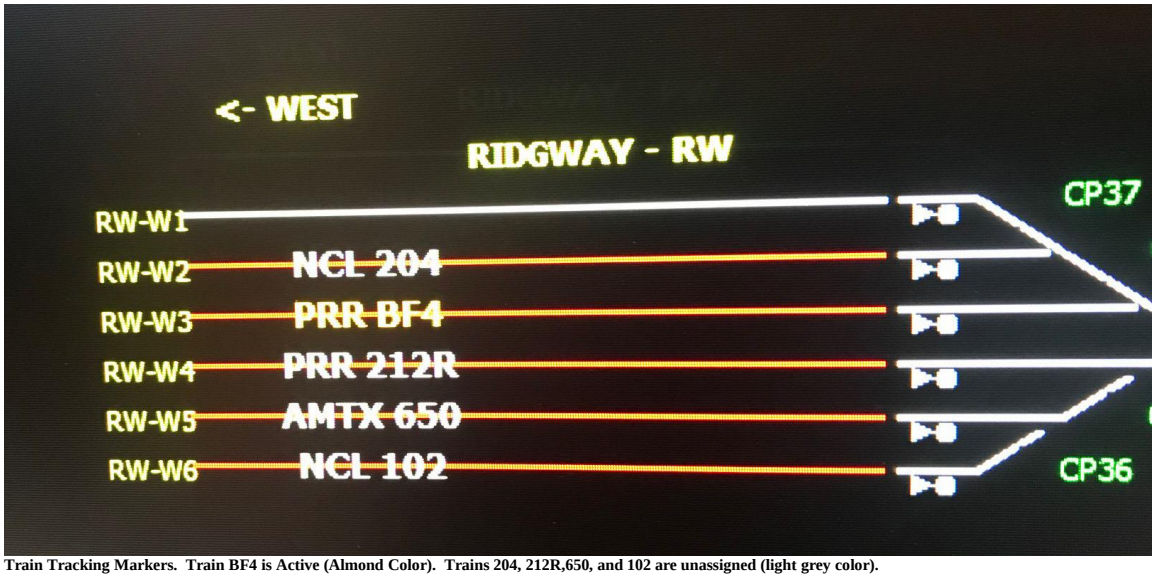
Train Detection

The tracks on the dispatcher panel will change to "occupied" (red) in response to detection messages from the layout. An occupied block in a reserved route will turn red, but the exit arrow will remain, showing the expected direction of travel of the train. When the detection clears, the reservation will be removed. Blocks can manually be marked as occupied or cleared by using the right mouse button when positioned over the desired track.

Tracks which do not have detectors associated with them are painted in a grey color, to distinguish them from detected tracks. This is a reminder to the dispatcher that reservations on those tracks will not clear automatically. However, positioning a train label on undetected track will tell **CATS** that the track is occupied and **CATS** will color the track accordingly.

Tracking Trains

Train labels have been placed on sections of tracks to record where trains are. Train tracking on the dispatcher's CATS screen is enabled, which allows the labels to follow detection reports automatically. Otherwise, the dispatcher can move them manually.



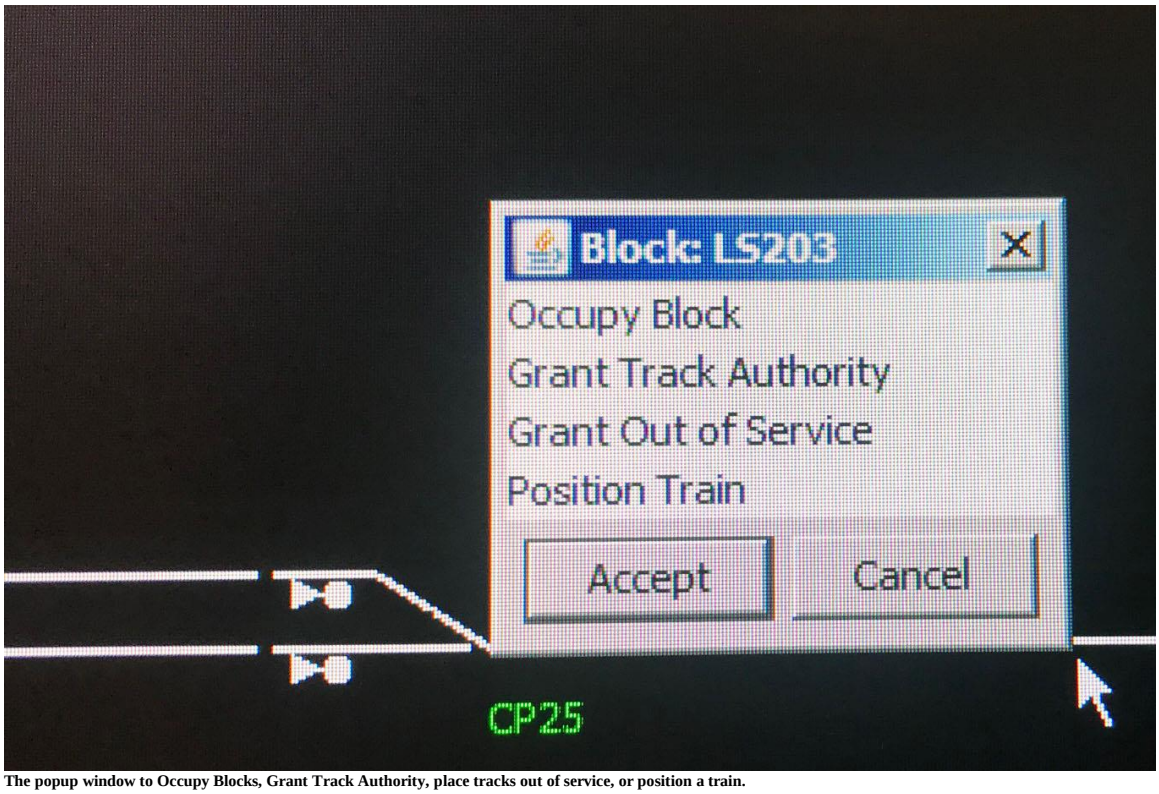
Train Tracking Markers. Train BF4 is Active (Almond Color). Trains 204, 212R,650, and 102 are unassigned (light grey color).

The simplest way to move a train label is to place the mouse cursor over the label and "drag" the label to another block by moving the mouse while holding down the left mouse button. The cursor changes from its default symbol to a cross inside a circle when the program recognizes the left button has been pushed when over a train label.

The other way of moving a train is to use the four arrow keys on the keyboard. The problem is knowing which train will move. The normal life cycle of a train is something like the following: it is created; it is positioned on the layout; crew is assigned to it; it does its work; it is tied down; it may be removed. The color of the train's label indicates which state it is in. A train that is positioned without a crew is "empty" (default light grey). A train with a crew is almond. A train that has completed its chores is a rose color.

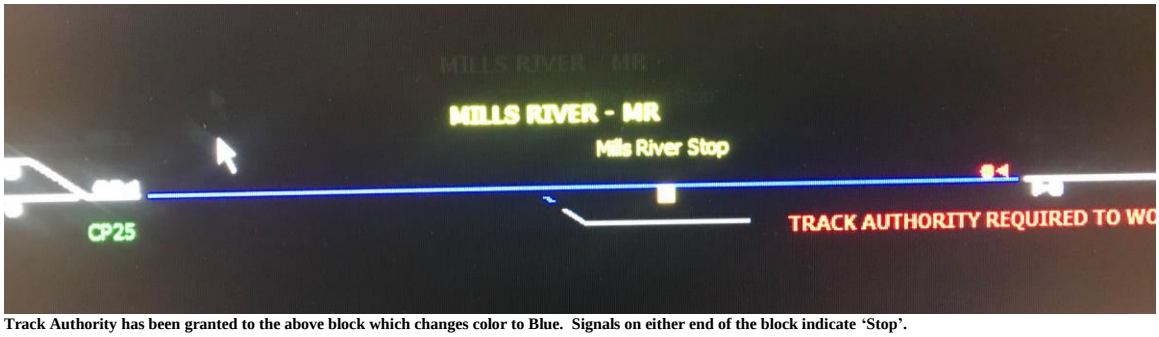
Track Authority

Track Authority is granted to a train to perform local switching. This means the turnouts in the block are unlocked and the signals protecting the block are set to their most restrictive aspect, protecting the block from other trains.



The popup window to Occupy Blocks, Grant Track Authority, place tracks out of service, or position a train.

Track Authority is placed on a block by positioning the mouse cursor over a block, clicking the right mouse button, selecting "Track Authority", and pushing the "Accept" button. Track Authority is removed by a similar operation. When Track Authority is placed on a block, the block is painted blue.

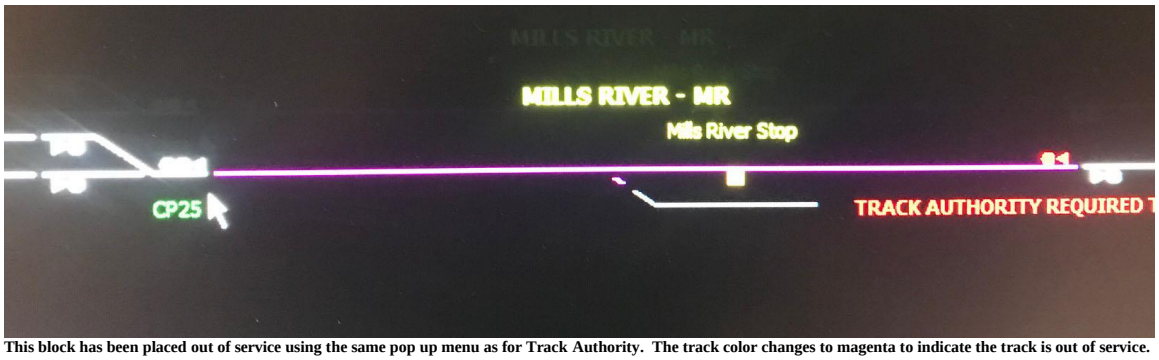


Track Authority has been granted to the above block which changes color to Blue. Signals on either end of the block indicate 'Stop'.

On the NCL, giving Track Authority on a block is reflected on the layout by presenting a "Stop" (red) aspect on signals protecting the block.

Out of Service

If a block is having maintenance performed on it, then the dispatcher should place Out Of Service on the block. This is accomplished like "Track Authority" – placing the mouse cursor over the track, clicking the right mouse button, and selecting "Out of Service". OOS is removed by the same process.

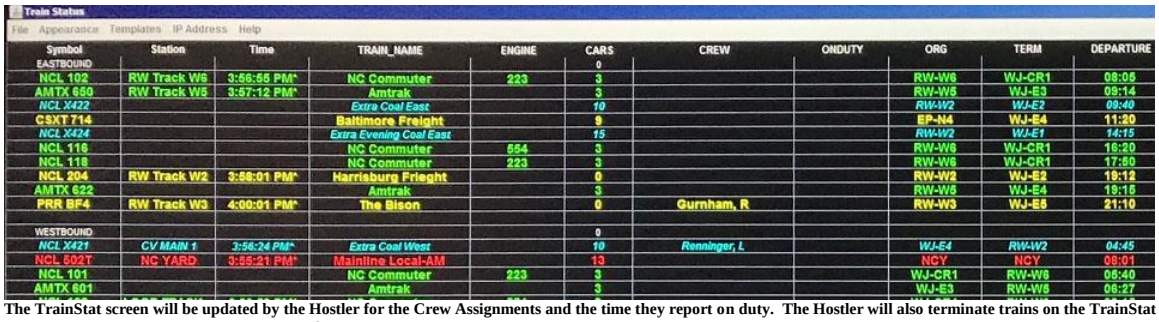


This block has been placed out of service using the same pop up menu as for Track Authority. The track color changes to magenta to indicate the track is out of service.

On the NCL, no special signal aspects are used on the layout to designate OOS, but the protecting signal drops to "Stop".

<u>Clearing Trains</u>

When a train is ready to depart, the Hostler will assign the train crew to the train via the TrainStat software. Then the Hostler will call the dispatcher and advise that the train crew is on duty and ready to depart. If the train is cleared, the dispatcher will issue a clearance time. Otherwise, the dispatcher will issue a HOLD time and he/she will need to call the Hostler back when the train can be cleared. The Hostler will enter either the clear or hold time on the Train Lineup Sheet.



The TrainStat screen will be updated by the Hostler for the Crew Assignments and the time they report on duty. The Hostler will also terminate trains on the TrainStat screen, which will remove the train and crew from the TrainStat and CATS screens.

When a train has been cleared by the dispatcher, the train crew will contact the dispatcher via two-way radio. The Dispatcher will set the assigned route on the mainline; allocate the blocks; and authorize the train to enter the mainline when it is clear. Dispatchers control the distance a train is authorized to travel before a mandatory stop. The Dispatcher issues a train order verbally to each engineer via two-way radio. The train order identifies the train number, that the train is clear to proceed or must hold, and if clear, how far the clearance to proceed is good for. Here is an example:

Engineer: "Train 200 to NCL Dispatch, Over"

Dispatcher: "Go Ahead Train 200, Over"

Engineer: "Train 200 is ready to depart Waterloo Junction Track E2. Over."

The Dispatcher aligns the turnouts and allocates the appropriate blocks so Train 200 can depart the staging yard and is properly routed on the mainline.

Dispatcher: "Roger Train 200. You are cleared to depart Waterloo Junction, Track E2 and proceed to Sheppardsfield. Hold short of CP 24 and advise dispatch, over."

Engineer: "Copy. Train 200 cleared to depart E2 through Sheppardsfield. Hold short of CP 24 and advise dispatch. Train 200 out."

When trains are scheduled to arrive in Nickel City Yard, the Dispatcher will hold the train at the CP15 or CP23. When the train arrives at either CP, the dispatcher will call the Yardmaster to get clearance for the train to enter the yard. Once the Yardmaster has granted permission, the dispatcher will set the appropriate route, allocate the corresponding blocks, and then advise the Engineer to contact the Yardmaster on the Yard Channel for further instruction.

Trains bound for Nickel City East, Karthaus, or are scheduled to work Main 1 between Sheppardsfield and Underwood require Track Authority. At Sheppardsfield, the dispatcher will issue Track Authority to the train requesting to go to Nickel City East or Main 1 between Sheppardsfield and Underwood. At Nickel City the dispatcher will issue Track Authority to go to Karthaus.

The train crew will record the Track Authority on a Track Authority Form and then read it back to the dispatcher. If the read back is correct, the train is cleared to proceed after the track route is aligned. See the supplement on Track Authority for more information. Once the train has entered the affected blocks authorized by the Track Authority, the dispatcher will change the track status of the affected block(s) to 'Grant Track Authority' as described in the Track Authority section above.

The Dispatcher should exercise the following priority when routing trains on the mainline:

Eastbound trains are superior to Westbound trains

1st Priority – Long distance passenger trains
2nd Priority – Commuter trains
3rd Priority – Through trains (freight, coal, ore, intermodal, etc)
4th Priority – All other trains (freight, coal, ore, intermodal, etc)
5th Priority – Local or Way Freight trains

Dispatchers communicate with train crews on the assigned Road radio channel.