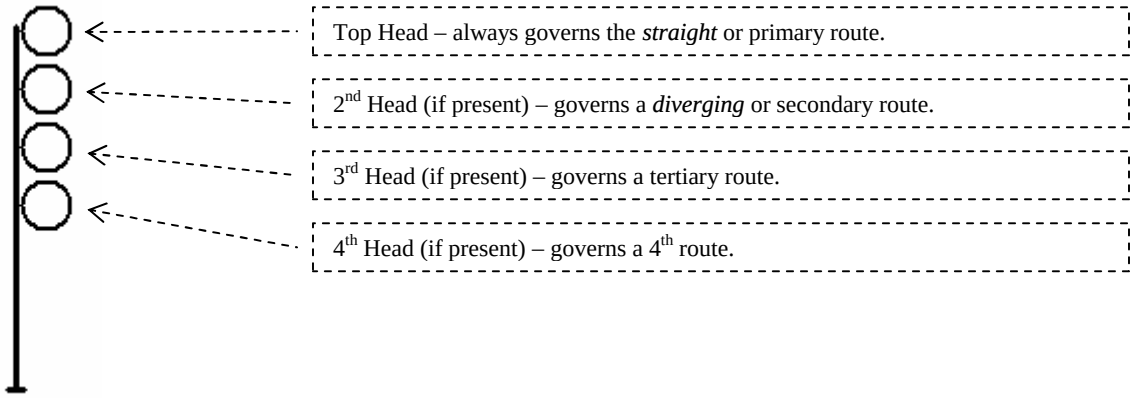
TMRR Signals:

Solid Red = Stop; Otherwise Go.

Train Mountain signals use multiple heads to indicate which route ahead is selected. The signal has one head for each possible route. Only one head will be active at any given moment, all other heads will display red. If no route is permitted, all heads will be red.

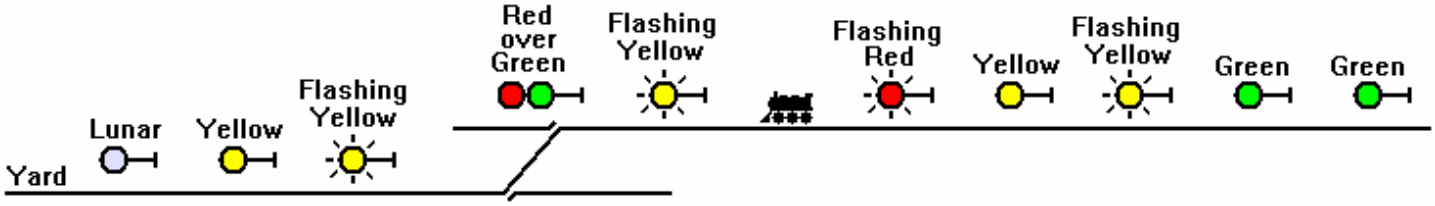


Colors are used to indicate the presence of trains ahead on the selected route. These colors can be displayed on any of a signal's heads, thus forming a matrix of possibilities.

Head Color	Summary	Meaning
Green	GO	Proceed. The track ahead is clear
Flashing Yellow	GO	Proceed, slowing down by the time you reach the next signal
Yellow	GO	Proceed, preparing to stop at the next signal
Lunar White	GO	Proceed "on-your-own". Used for entering a yard.
Flashing Red	GO	Proceed "on-your-own". There is a train immediately ahead.
Red	STOP	Do not pass the signal.

This system of combining color with head position is typical of railroads in the western US. These rules most closely resemble the Burlington Northern.

The following illustration shows a progression of signals. Displaying them in this context helps clarify their usage. Behind a train is a flashing red - a following train may proceed cautiously, prepared to stop immediately. Behind the red is a yellow - a following train must be prepared to stop at the next signal. A flashing yellow behind the solid yellow is becoming customary on real railroads. It gives additional distance in which to slow down. Ahead of the train is a crossover. For this diverging/secondary route, a green is displayed in the second head. Real trains would need to go slow over diverging switches and the preceding flashing yellow provides the warning to get slowed down. The train enters the yard on a lunar with yellows preceding.



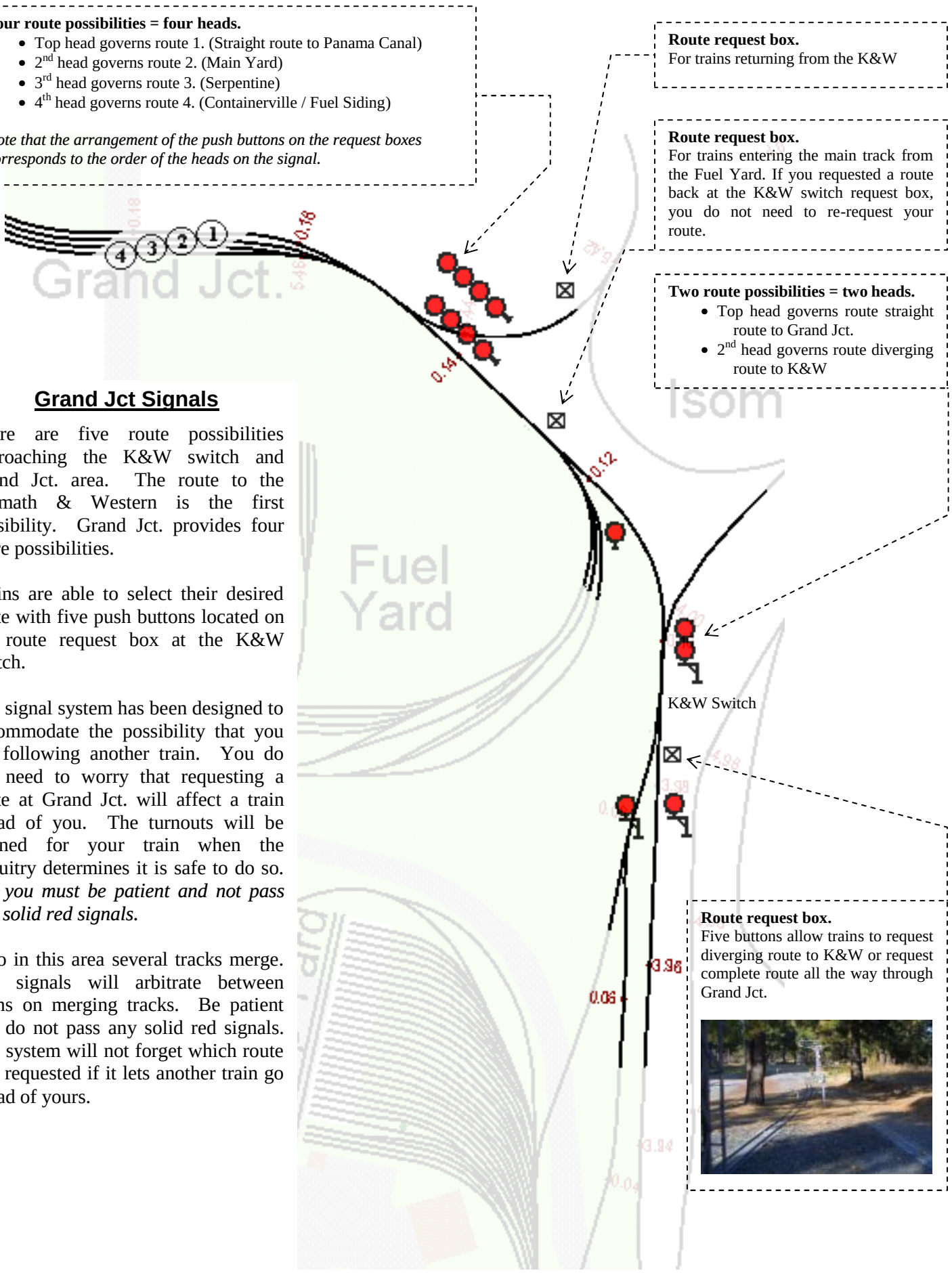
Grand Jct Signals

There are five route possibilities approaching the K&W switch and Grand Jct. area. The route to the Klamath & Western is the first possibility. Grand Jct. provides four more possibilities.

Trains are able to select their desired route with five push buttons located on the route request box at the K&W switch.

The signal system has been designed to accommodate the possibility that you are following another train. You do not need to worry that requesting a route at Grand Jct. will affect a train ahead of you. The turnouts will be aligned for your train when the circuitry determines it is safe to do so. *But you must be patient and not pass any solid red signals.*

Also in this area several tracks merge. The signals will arbitrate between trains on merging tracks. Be patient and do not pass any solid red signals. The system will not forget which route you requested if it lets another train go ahead of yours.



Three route possibilities = three heads:

- Top head governs Central Bypass (straight) route.
- Middle head governs route to Central Station.
- Bottom head governs route to Backshop / Main Yard.

Push button box mounted on wall just inside tunnel portal provides an alternate method of selecting route.

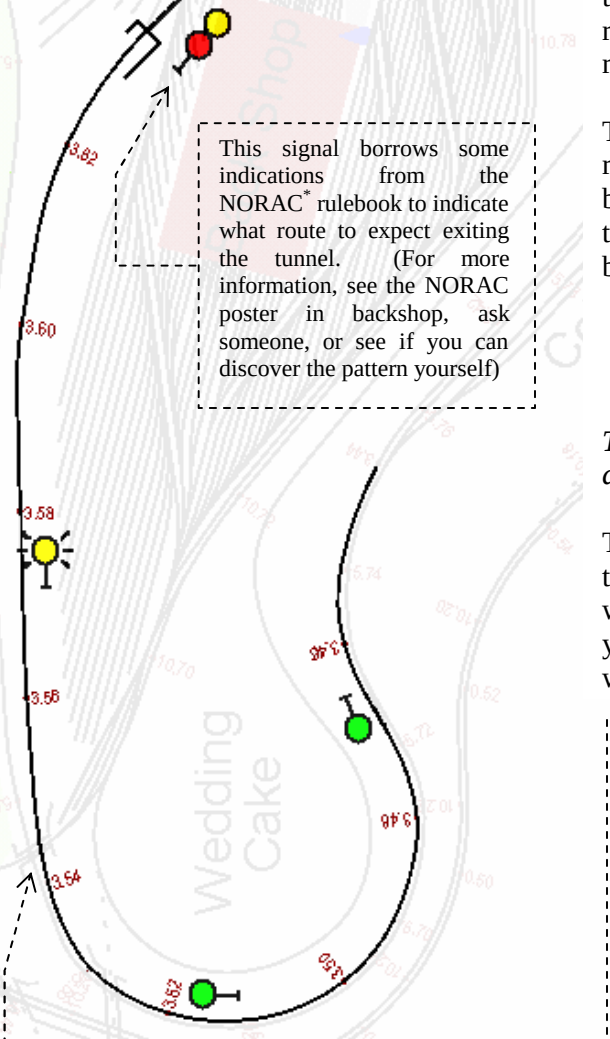
NOTE: Buttons will not work if the front of your train is past the signal.

Warning:

The light beam request circuitry may throw the turnouts at any moment, but only when:

- The signal is solid red, and
- No train is on the turnouts.

Therefore, never pass this signal when it is displaying a solid red. Always make sure the signal is displaying a "proceed" indication to ensure that the turnout will not throw in front of your train.



This signal borrows some indications from the NORAC* rulebook to indicate what route to expect exiting the tunnel. (For more information, see the NORAC poster in backshop, ask someone, or see if you can discover the pattern yourself)

Long Tunnel Signals

There are three route possibilities upon exiting the long tunnel. The leftward route leads to Central Station. The rightward route leads to the Main Yard. The center (straight) route leads to the Central Bypass.

Trains are able to select their desired route using an in-motion route selector. Mounted on the Cox bridge are two light-beam detectors that shine down on reflectors on either side of the track. Requesting a route is done by extending an arm to break the light-beam as follows:

- Left arm extended requests left route to Central station.
- Right arm extended requests right route to Main Yard.
- Neither arm extended requests straight route to Central Bypass.

Trains must maintain at least 10 seconds of separation for the detectors to properly distinguish separate trains.

The system has been designed to accommodate the possibility that you are following another train. You do not need to worry that breaking a light-beam will affect a train in front of you. The switches will be properly aligned for your train when you exit the tunnel.

Engineer extends left arm to request route to Central Station.

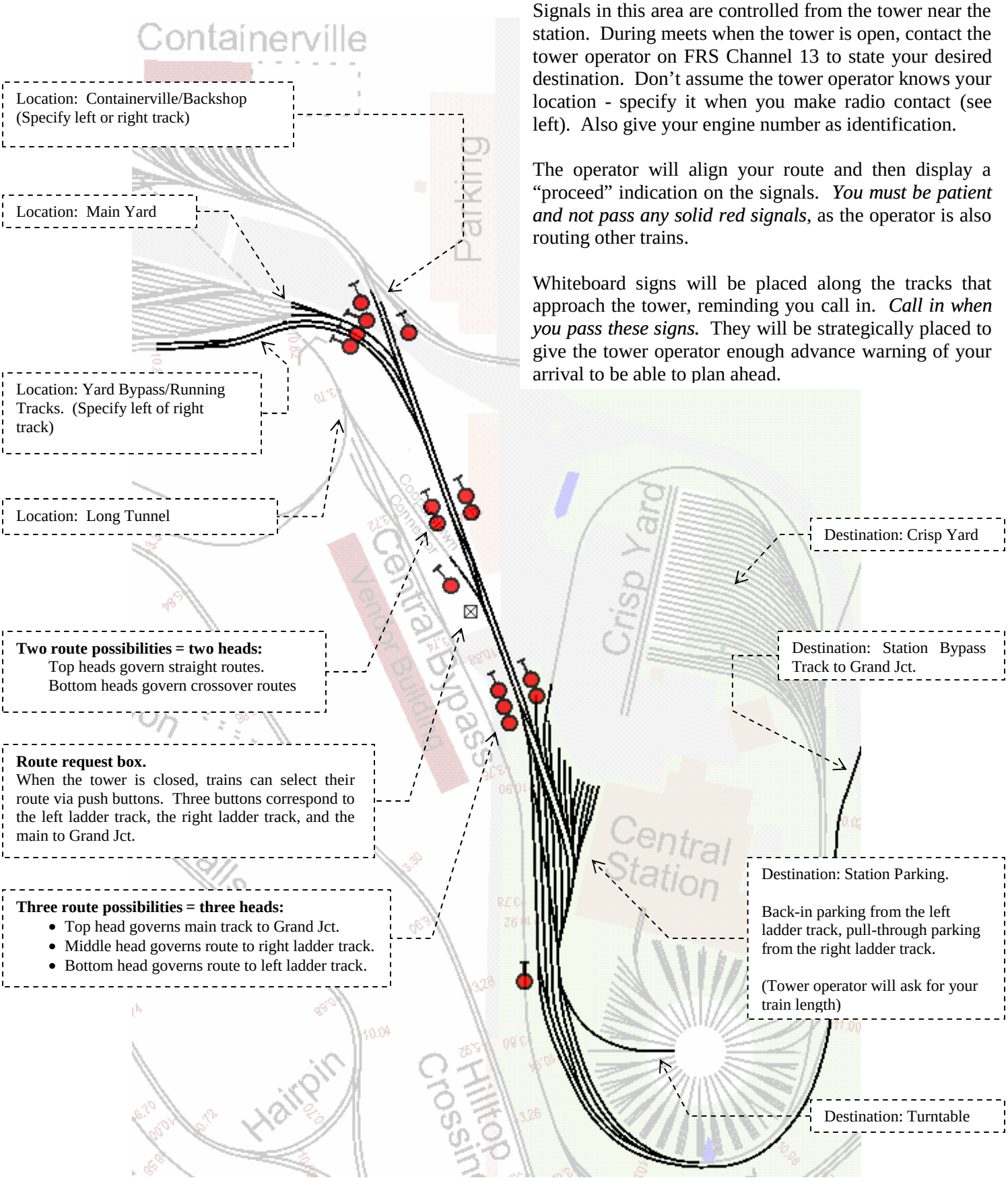
*NORAC (Northeast Operating Rules Advisory Committee) is the rulebook adopted by Amtrak, CSX, NS, and other eastern railroads. It is based on their predecessors' rulebooks

Central Station Tower – Channel 13

Signals in this area are controlled from the tower near the station. During meets when the tower is open, contact the tower operator on FRS Channel 13 to state your desired destination. Don't assume the tower operator knows your location - specify it when you make radio contact (see left). Also give your engine number as identification.

The operator will align your route and then display a "proceed" indication on the signals. *You must be patient and not pass any solid red signals*, as the operator is also routing other trains.

Whiteboard signs will be placed along the tracks that approach the tower, reminding you call in. *Call in when you pass these signs.* They will be strategically placed to give the tower operator enough advance warning of your arrival to be able to plan ahead.



Location: Containerville/Backshop (Specify left or right track)

Location: Main Yard

Location: Yard Bypass/Running Tracks. (Specify left of right track)

Location: Long Tunnel

Two route possibilities = two heads:
Top heads govern straight routes.
Bottom heads govern crossover routes

Route request box.
When the tower is closed, trains can select their route via push buttons. Three buttons correspond to the left ladder track, the right ladder track, and the main to Grand Jct.

Three route possibilities = three heads:

- Top head governs main track to Grand Jct.
- Middle head governs route to right ladder track.
- Bottom head governs route to left ladder track.

Destination: Crisp Yard

Destination: Station Bypass Track to Grand Jct.

Destination: Station Parking.

Back-in parking from the left ladder track, pull-through parking from the right ladder track.

(Tower operator will ask for your train length)

Destination: Turntable