

Train Simulator and Computer Aided Dispatcher

Version 2.0.7

User Manual

Form B Studios LLC

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REV 4

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Chapter 1 – Setup

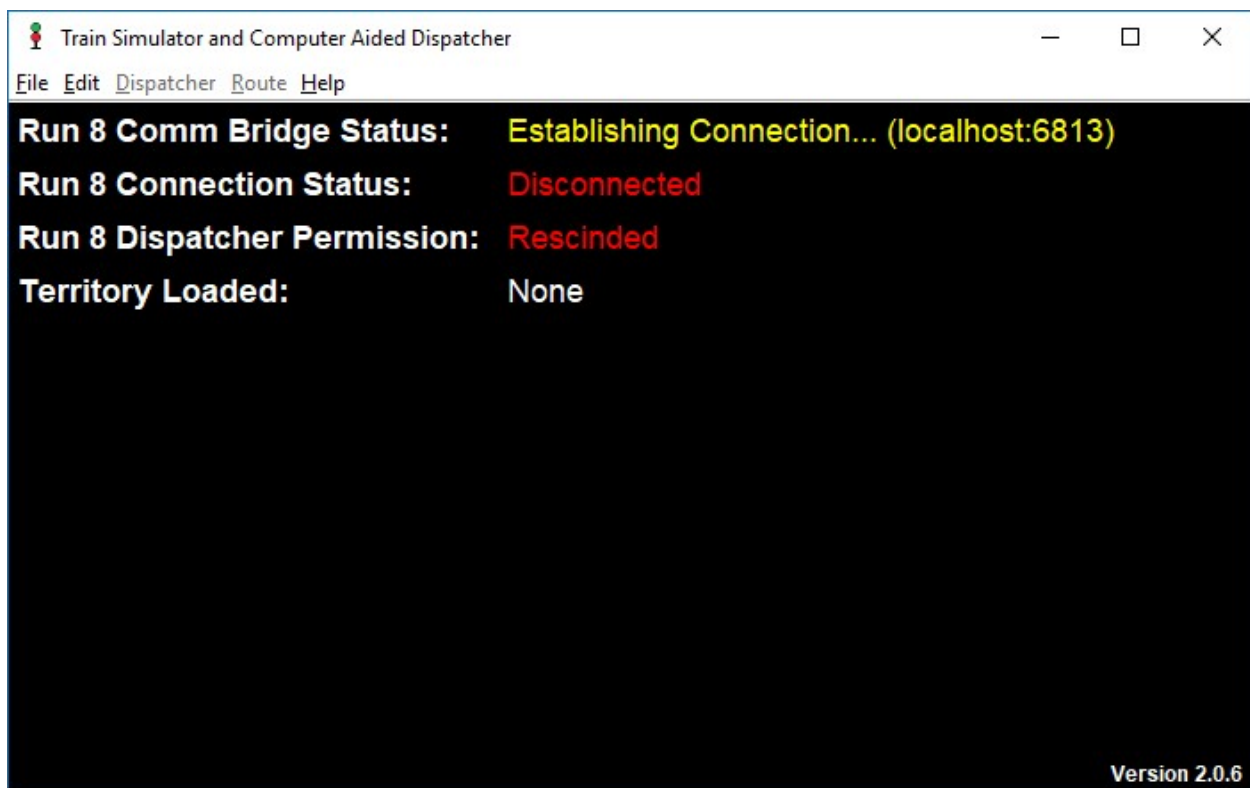
Installation and Connection

TSCAD For Run 8 does require that Java 8 be installed on your PC. If Java 8 is not currently installed on your PC, you can find it here:

<https://www.oracle.com/technetwork/java/javase/downloads/java-archive-javase8-2177648.html>

Search for “Java SE Runtime Environment 8u171” as the Java version to download and install.

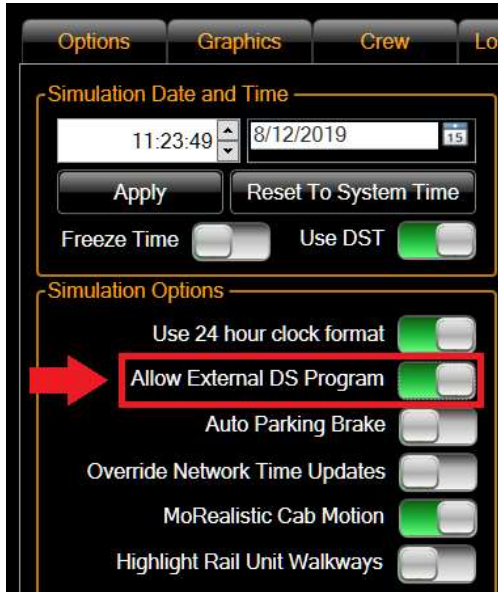
When first starting TSCAD, you should see the software attempting to connect to Run 8 Train Simulator:



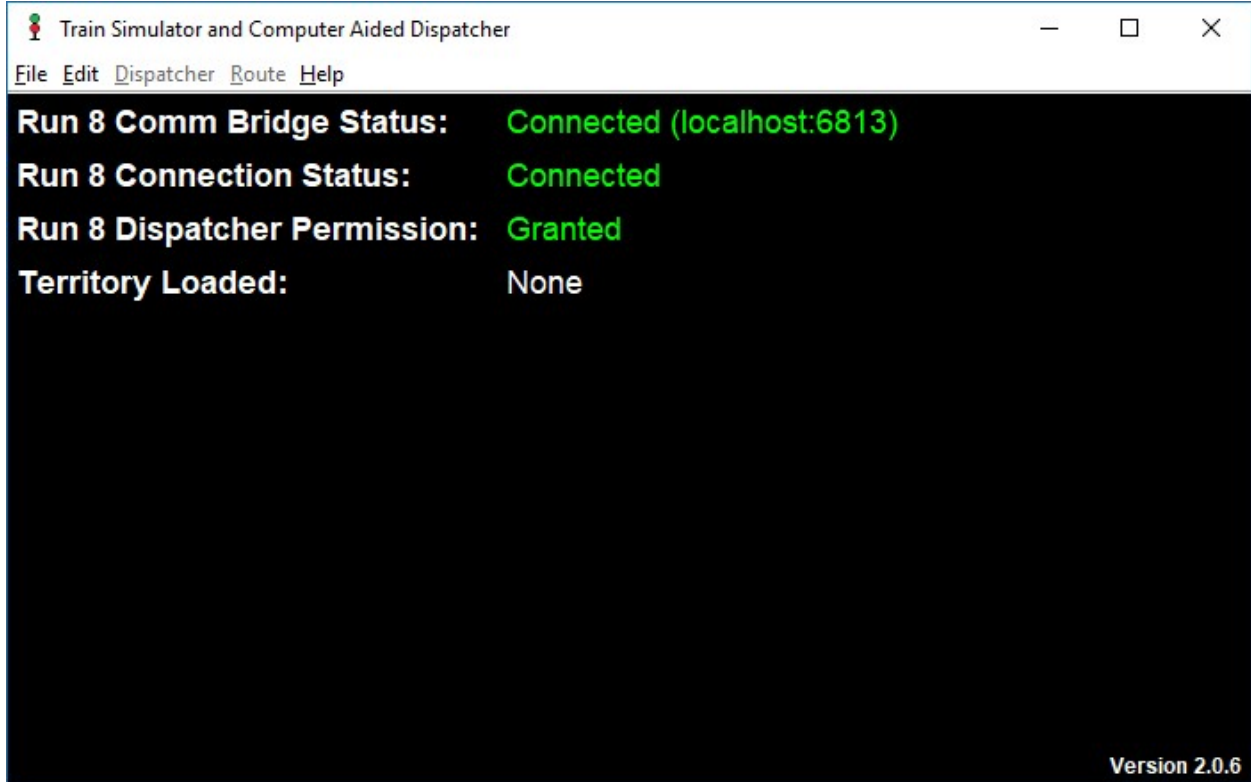
The Run 8 Comm Bridge program will automatically start and TSCAD will attempt to connect on port 6813¹.

¹ Note: If there is an issue with this connection, check to see if port 6813 is being blocked in Windows.

Once connected to the Run 8 Comm Bridge, TSCAD 4 Run 8 will attempt to connect to Run 8 Train Simulator. This can be determined by the “Run 8 Connection Status”. Run 8 Train Simulator must be running on the same PC and external dispatching permissions should be granted:



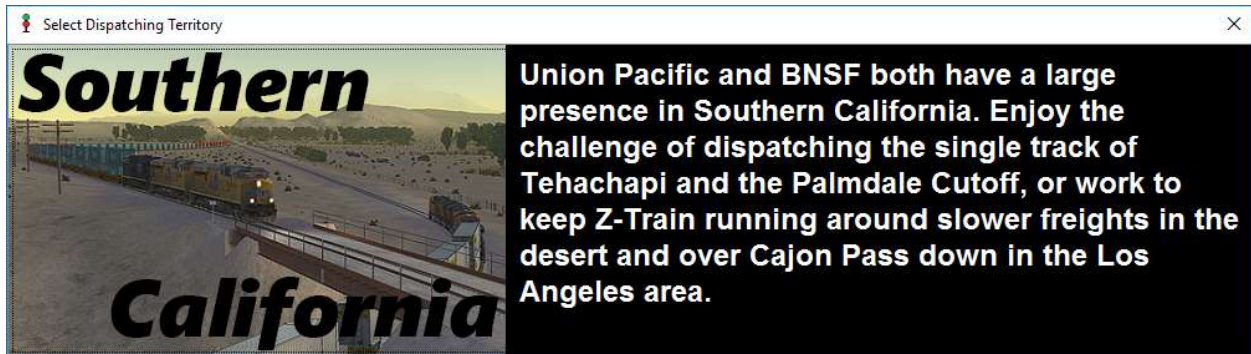
Once connected, the main screen should appear as follows:



At this point, you are set to load a territory and begin dispatching.

Loading A Territory

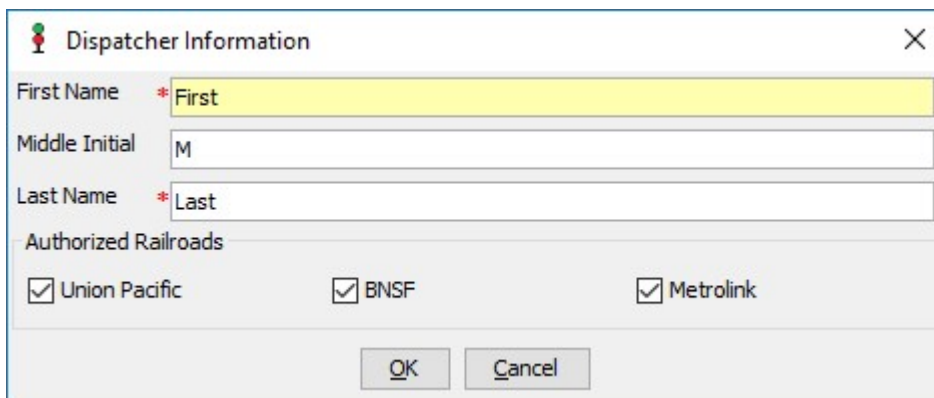
Once connected to Run 8 Train Simulator, open a territory under the **File** menu. For example, Southern California:



After selecting a territory, TSCAD will load all aspects of the territory. This includes turnouts, signals, trains, occupancies, etc, and may take several seconds to load.

Setting Up Your Dispatcher Profile

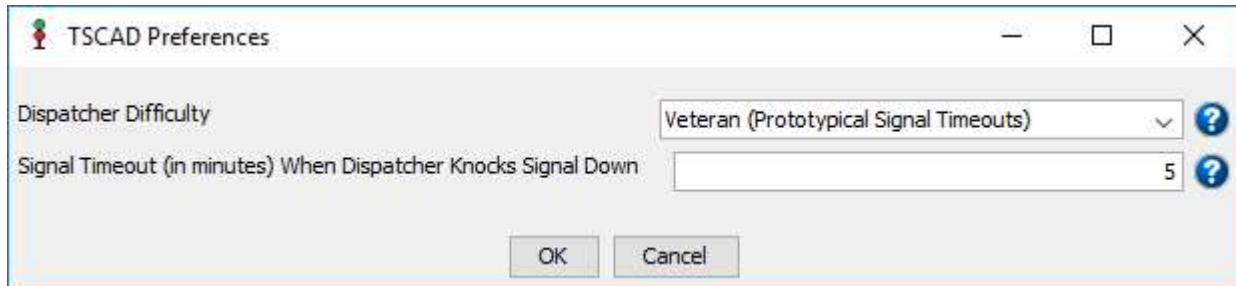
In order to dispatch, your name is required. This is necessary when issuing things such as track and time to maintenance². In order to include a level of realism, particularly in multi-player games, you can choose which railroads you can dispatch.

The image shows a dialog box titled "Dispatcher Information" with a close button in the top right corner. It contains three text input fields: "First Name" with the text "First", "Middle Initial" with the text "M", and "Last Name" with the text "Last". Below these fields is a section titled "Authorized Railroads" with three checkboxes: "Union Pacific", "BNSF", and "Metrolink", all of which are checked. At the bottom of the dialog box are two buttons: "OK" and "Cancel".

² No personal information entered in to the Dispatcher Information screen will be sent to Form B Studios.

Setting Dispatcher Preferences

There are two dispatcher preferences that can be set from main window under the **File** menu. Select **Edit Preferences** to access preferences.



In the real world, a dispatcher cannot manually change a signal back to red without the signal running through a timeout period. When “running time”, the signal cannot be set back up (it remains red) and no other signals or turnouts along the route can be changed. Five minutes is the prototypical time used in the real world. This can be configured on this screen.

A signal will “run time” in the real world in the event a train approaching a signal that had been manually changed to red cannot stop before reaching the signal. If the train runs past the signal, it reduces the likelihood of a problem if the signal remains red and all turnouts remained aligned as they were.

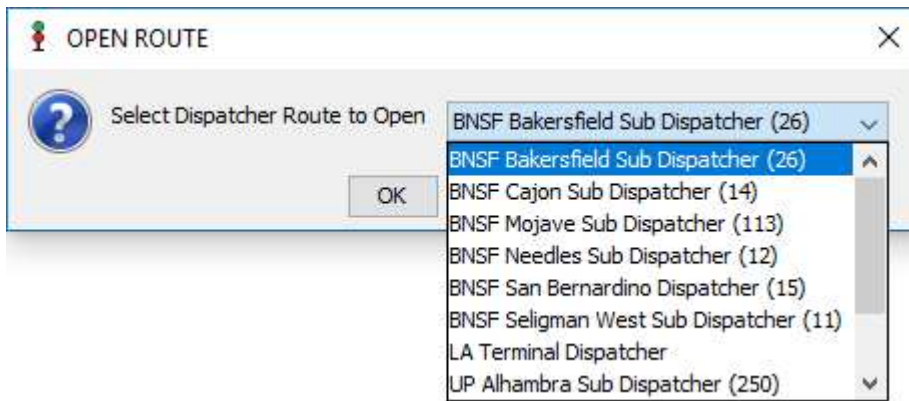
The “Dispatcher Difficulty” has three options:

1. Beginner (Fewer Signal Timeouts) - The only time a signal will timeout when a dispatcher manually drops it, is if there is a train approaching the signal within the block. All other signals dropped by the dispatcher will drop to red without running time.
2. Intermediate (More Signal Timeouts) - In addition to signals with trains approaching, any signal that is *not* in fleet mode when manually knocked down by the dispatcher will run time. Fleeted signals will drop to red without running time.
3. Veteran (Prototypical Signal Timeouts) - This is like the real deal! When a dispatcher in real world manually drops any signal to red (fleeted or not, train approaching or not), the signal will run time. That is what will happen in TSCAD if you run in Veteran mode. Any signal manually dropped by the dispatcher will run time.

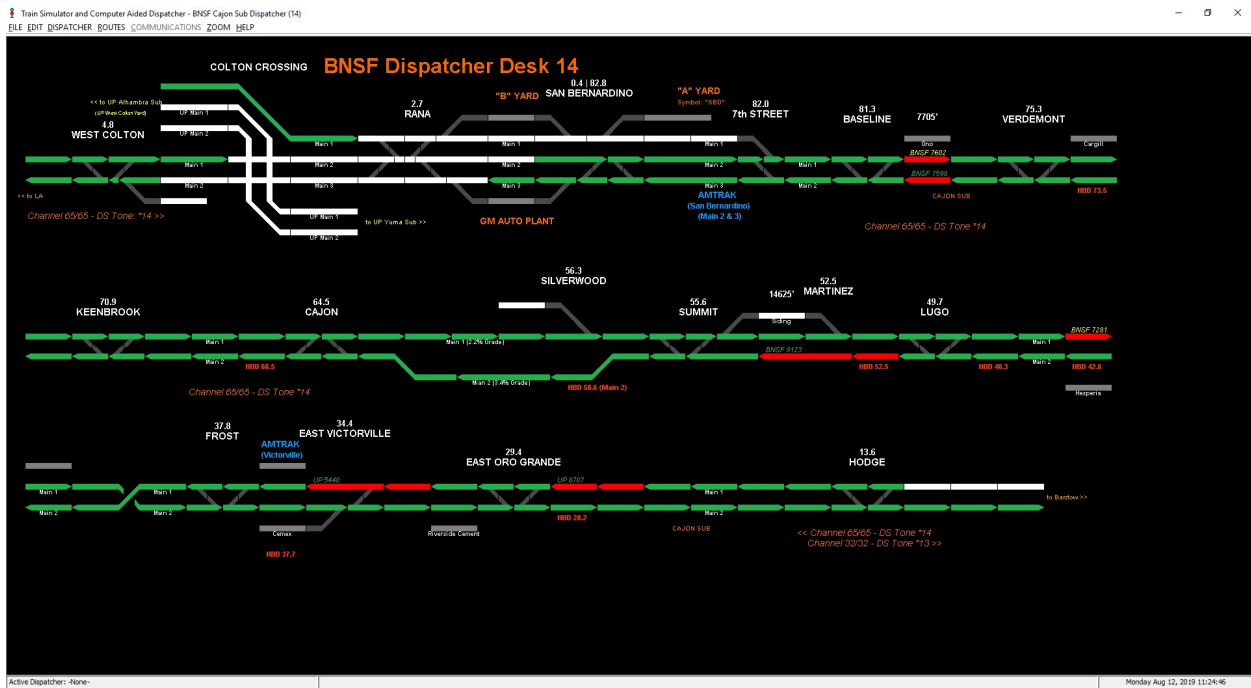
Chapter 2 – Getting Started

Selecting a Route

From the main window, select **Open Route** from under the **Route** menu. The list of available routes will be based on the routes you have installed for the territory and the railroads you are authorized to dispatch.



When you select a route, a window will open for that route. For example, if the Cajon Sub is selected, the following dispatching window will be displayed:

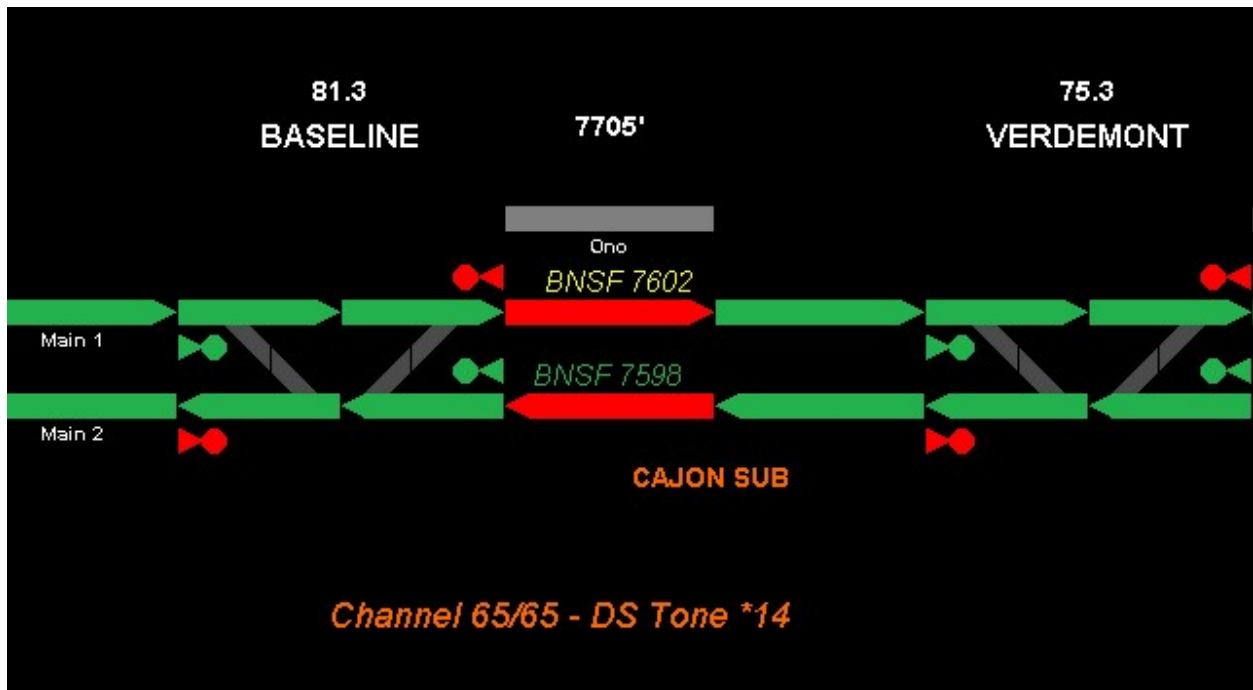


Note at this point that the display is showing signal alignments and occupancies, but that you (the dispatcher) cannot set any signals or throw any turnouts. This is because you are currently viewing the route, but not actively dispatching it. This can be extremely useful when working with other dispatchers. You can view neighboring territories to see what trains are approaching your territory.

You can open additional routes directly from a current route under the ROUTES menu. You can open additional routes in new windows (and even spread them across multiple monitors), or you can open additional route as tabs on a single window.

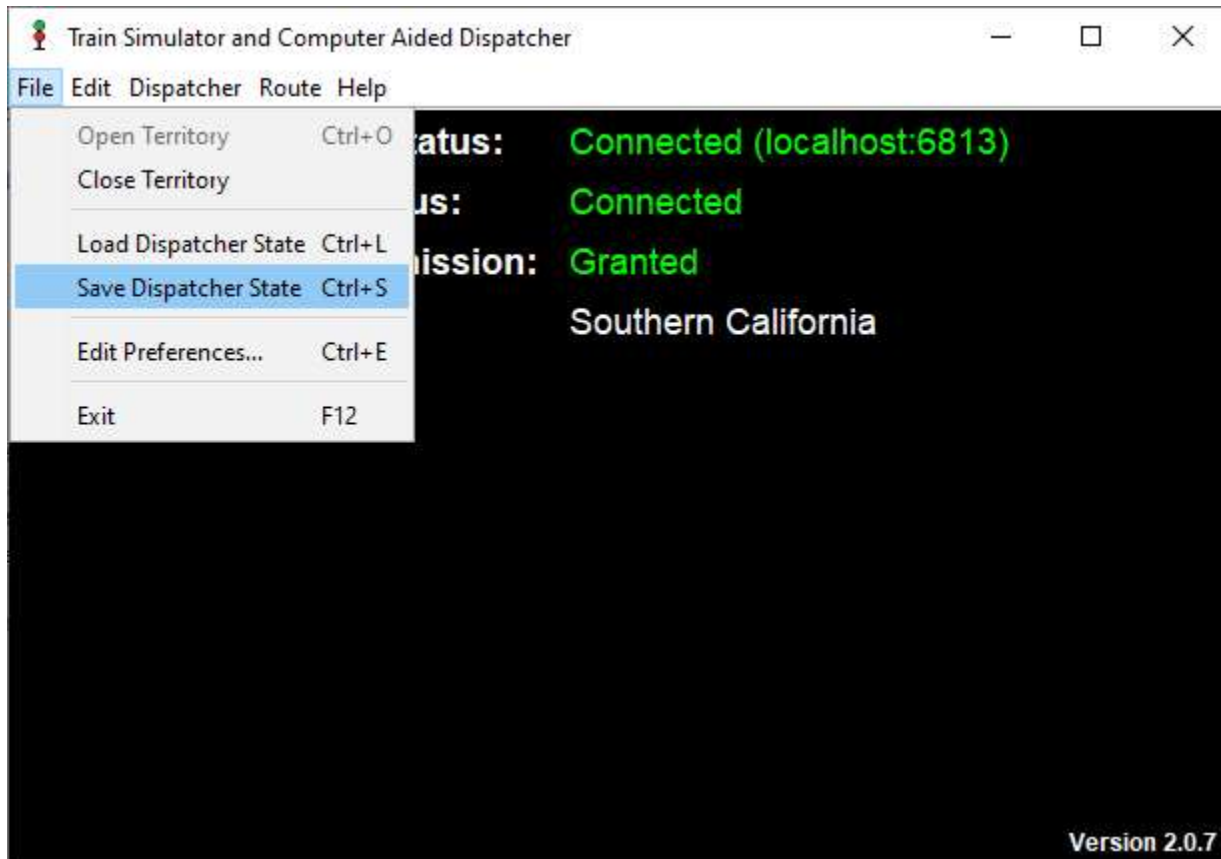
Logging in to a Territory

Under the DISPATCHER menu, select LOGIN TO CONSOLE. When doing this, you will now be actively dispatching the route. You will see signals appear and you can click on turnouts:



Dispatcher State

Once you finally have TSCAD up and running, you may have opened multiple tabs and/or placed TSCAD windows across multiple monitors. If this arrangement of territories, screens, and tabs is one you want to use again, you can save the current dispatcher states from the main TSCAD window:











When choosing “Save Dispatcher State”, you will be shown a standard save dialog and you can name and save the file wherever you would like. Likewise, when you first start TSCAD and open a territory, you can choose “Load Dispatcher State” from this same menu. When doing so, all the windows you had open when you saved, including their tabs, the monitors they were loaded on, and whether or not you were logged in as the dispatcher will all be restored for you.

You can save as many dispatcher states as you would like (space permitting on your hard drive).












Note: If you move dispatcher state files to a new computer, locations of windows may not be correct as the state is specific to the PC they were saved on.

Chapter 3 – Dispatching

Signal Colors and Meanings

	Indicates the signal is red in the field.
	Indicates the signal has a “flag by” set on it. This is used when the dispatcher gives verbal authority to a train to pass a red signal.
	Indicates the signal has been aligned for movement by the dispatcher. This does <i>not</i> indicate the condition of the signal (other than it is not red).
	Indicates the signal has been aligned for movement by the dispatcher and has a stack request waiting.
	Indicates the signal is red in the field and has a stack request waiting.
	Indicates the signal has been aligned for movement by the dispatcher and that it has been set to fleet mode.
	Indicates the signal is currently running time and cannot be changed until running time completes.
	Indicates there is a manual block (created by the dispatcher) on the signal and it cannot be set up for a route.

Track Colors and Meanings

	Indicates the track is unoccupied and is in CTC limits.
	Indicates the track has a route aligned by the dispatcher.
	Indicates the track is occupied. It may be by a train, or maintenance of way.
	Indicates the track has a route stacked.
	Indicates the track has a blocking track tag on it.
	Indicates the track has a blocking track tag on it and has a route aligned over it.
	Indicates track and time (maintenance) has been issued over this stretch of track.
	Indicates the track is occupied within the track and time (maintenance) limits.
	Indicates there is a block on this stretch of track and now alignment can be made over the track.
	Indicates the track is currently running time and no changes can be made to the track until running time completes.
	Indicates the track is outside of CTC limits and will not show occupancies, etc.

Basic Dispatching

Setting Up A Route

To set up a route for a train, first throw any turnouts (switches) so they are properly aligned for the route. To throw a turnout, left click on the turnout. A red box will appear around the turnout when you place your mouse over it. To throw the turnouts of a crossover, click on one of the two turnouts. This will cause both sides of the crossover to throw. It will take a turnout 5-10 seconds to completely throw and lock up in the other position.

Once all turnouts are properly aligned, left click on a block signal to initiate the aligning of the route. It will take a signal 5-10 seconds to verify the route is clear and set up.

Fast Routes

Another method for setting up a route is to press "Control+Q". This will change the mouse icon to show the word FAST. At this point, you can click on the starting block and the ending block for the route. If the route is clear and free of conflict, TSCAD will automatically throw all turnouts along the route and align all signals. Press Escape to return to start dispatching mode and exit Fast Mode.

Train Information

When looking at the display, you can see information about trains above an occupied block. By default, the lead unit number of the train is displayed. Use F11 to scroll through other pieces of information displayed. These include:

- Lead Unit Number
- Train Symbol
- Train Length
- Train Weight
- Horsepower Per Ton (HPT)
- Train Crew
- Time In Block³

Zooming

You can press and hold the Control key and use your mouse wheel to zoom in or out. You can also use a few pre-defined views by pressing Control+1, Control+2, Control+3, or Control+4.

³ Note that train speeds are not displayed in TSCAD as this would not be prototypical. In the real world, dispatchers cannot see the speed of trains in their territories

Scrolling

If you are zoomed in on the dispatcher display, you can left click the mouse (and hold) and move your mouse to scroll the screen. Click on a clear (black) section of screen when doing so.

Knocking Down a Signal

If you, as the dispatcher, wish to manually change a signal to red (“knock down a signal”), right click on an aligned signal and select CONTROL SIGNAL TO STOP. You will be asked to verify doing this. If you choose to do so, the signal will run time⁴.

Setting a Signal to Restricting

When the block beyond a signal is occupied, you cannot setup a standard route into the block. However, you can set up a restricting signal. To do so, right click on the signal and select SET SIGNAL TO RESTRICTING. If no other conflicts exist beyond the occupied block, the route will set up.

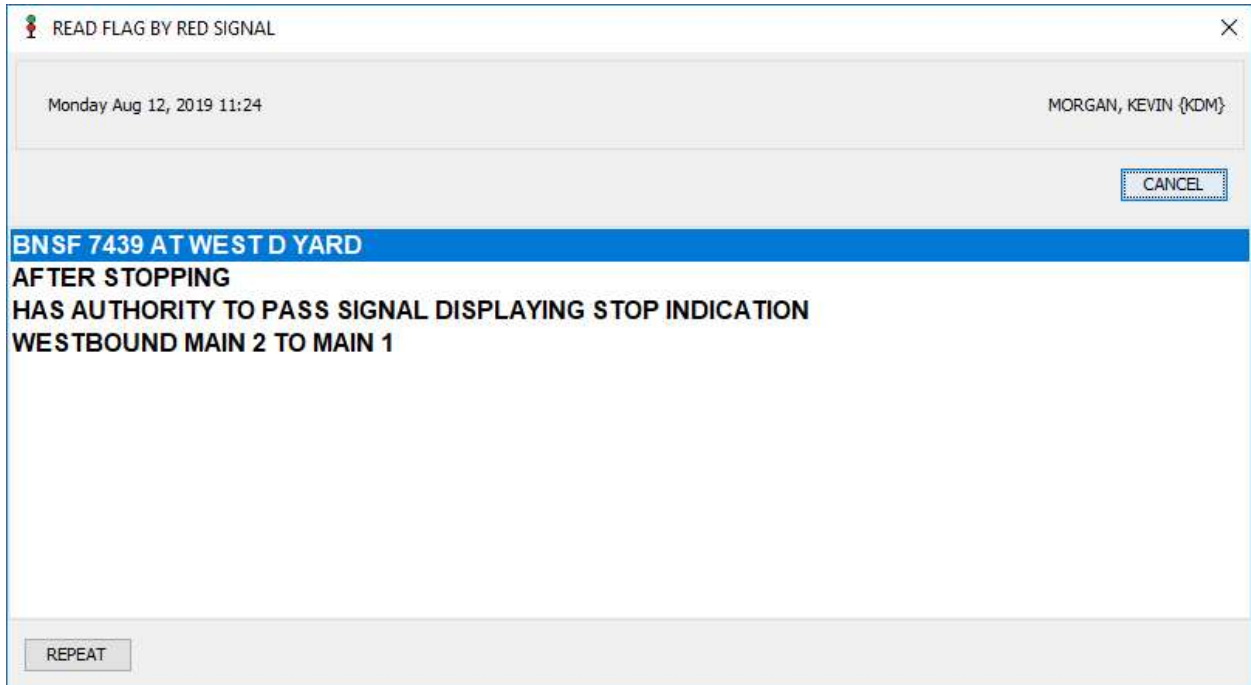
Mouse Over Information

Throughout TSCAD, you can move your mouse over train occupancies to get information about the train. You can always mouse over track, turnouts, or signals to get additional information.

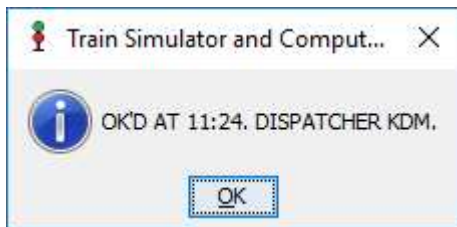
⁴ See “Setting Dispatcher Preferences” to show when a signal will or will not run time.

Flagging a Train Beyond a Red Signal

If a train is stopped at a red signal and the dispatcher wishes to give verbal authority to the train to pass by the red signal, right click on the signal and select FLAG BY RED SIGNAL. TSCAD will show a dialog indicating the verbiage to read to the train being flagged. Without doing this, a train passing by a red signal will generate a red signal violation in TSCAD.



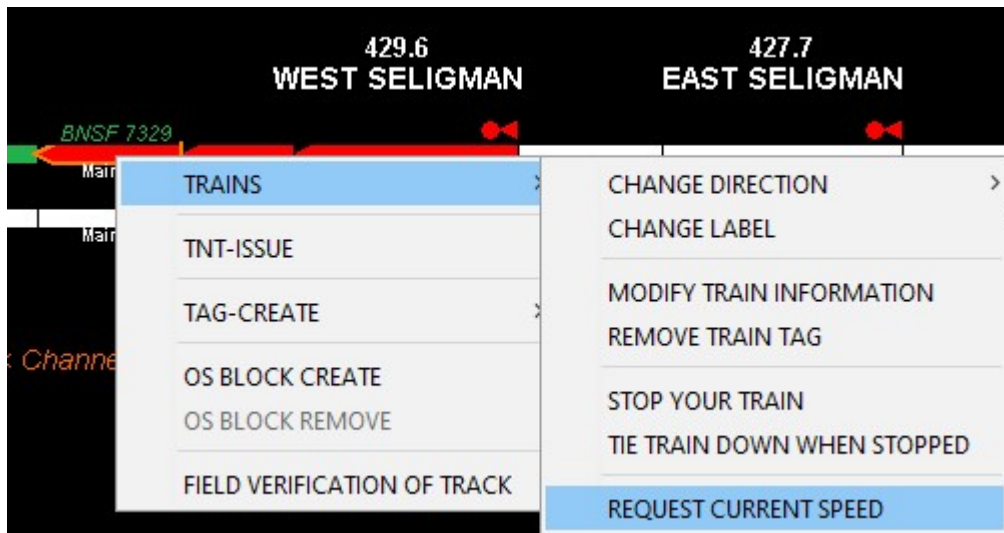
Note that the dialog allows for you (the dispatcher) to read information to the train being flagged. After reading this, click on REPEAT to listen to the engineer repeat the instructions back. Click on each line read back and click OK when the read back is completed. This will result in an "OK Time" for the train.



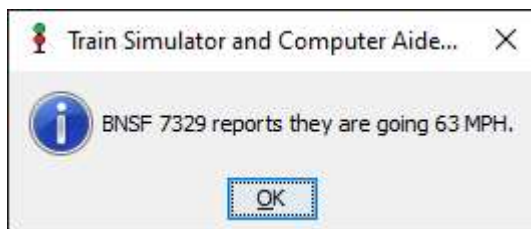
Requesting a Train's Speed New in 2.0.7!

TSCAD was designed to not show the speed of trains. That is not prototypical and not information that a real-world dispatcher can see on his or her display. However, real-world dispatchers can ask a train crew how fast they are currently traveling.

To simulate this capability with AI train, the dispatcher can right-click on the train, select TRAINS, and then REQUEST CURRENT SPEED:

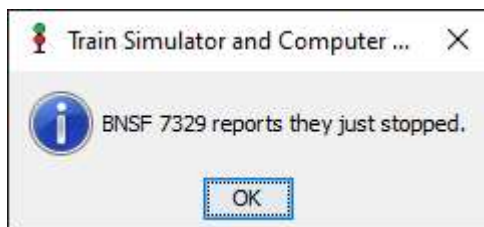


When doing this, a dialog will appear showing the current speed of the train in question:



Note: This feature will not work for human-controlled trains. Only AI trains. For human-controlled trains, simply ask the human crew what their speed is.

If the train is currently stopped, it will report as such, as well as a rough estimate for how long it has been stopped. It is unlike a human crew would know exactly how long they have been stopped but would have an estimate. This is simulated with a response such as this:



Other examples of estimates might include “about 5 minutes” or “well over an hour”.

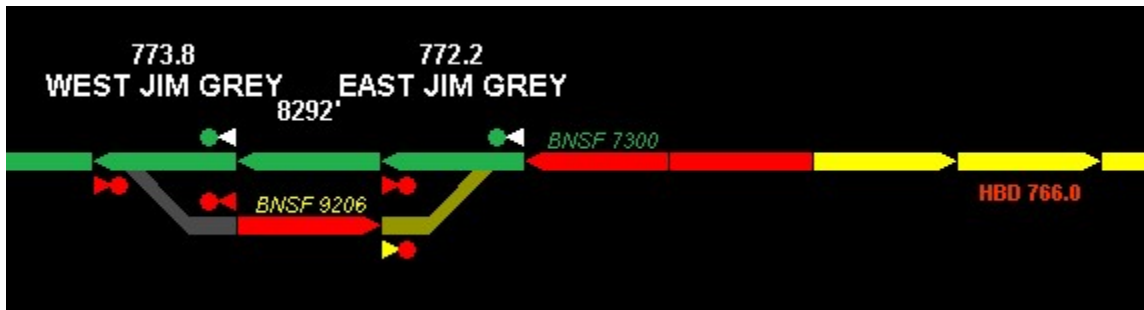
Advanced Dispatching

Route Stacking

Use Route Stacking to set up a route in advance of the conditions being clear for the route to be aligned. For example, when there is a meet between two trains, you can set up a route stack at both ends of the siding. Once all conflicts for a route stack are resolved (meaning all trains are in the clear), TSCAD will automatically set up the stacked route.

Press Control+W to enable route stack mode. You will see the cursor change to include the word STACK. Click on the starting block and ending block of the route you wish to stack.

Note: When in Route Stacking mode or Fast Routes mode, do not click on specific turnouts or signals, just on starting and ending blocks. You will see the route change yellow for a stack, as well as the base of signals along the route to yellow.



In the above example, the turnout at East Jim Grey and the signal out of the siding for BNSF 9206 will automatically set up as soon as BNSF 7300 is clear of the east switch.

Press Escape to exit out of route stack mode.

Canceling A Stacked Route

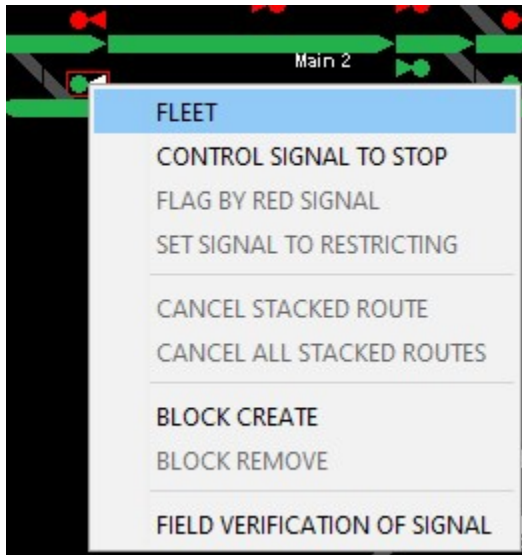
To cancel a stacked route, right click on a signal that has a route stacked and select either CLEAR STACKED ROUTE or CLEAR ALL STACKED ROUTES. Then proceed with the on-screen instructions for clearing the stacked route(s).

Fleeting

Fleeting signals is frequently done in territories with multiple main tracks. When a signal is set to fleet, it indicates to TSCAD that the signal should set back up for the same route after a train has passed and clears the next block. This prevents the dispatcher from having to constantly (manually) set up routes for consecutive trains.

To set a signal in fleet mode, right-click on the signal and select FLEET⁵:

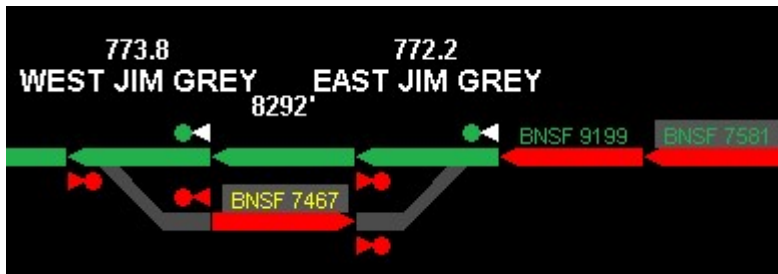
⁵ Note that the signal must already be setup with a route in order for fleet mode to be enabled.



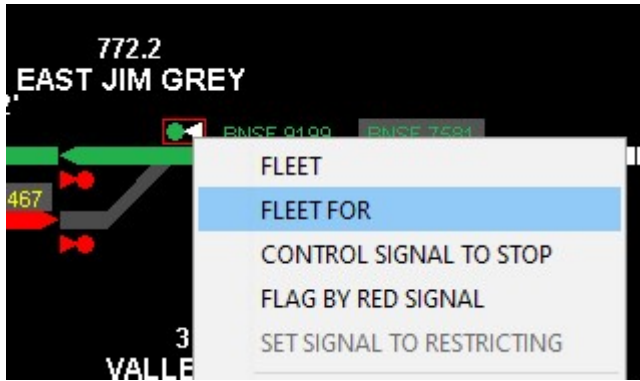
To remove a signal from fleet mode, do the same process in reverse, remove the check mark next to FLEET. A fleeted signal will have a green base (triangle). A non-fleet signal set up for a route will have a white base (triangle).

Fleet For New in 2.0.7!

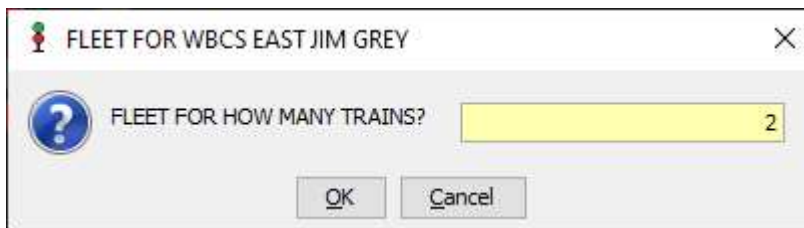
Related to fleeting, “Fleet For” allows the dispatcher to indicate how many trains should pass a fleeted signal before it will drop back to red. This can be useful in a situation when you have multiple trains coming through a stretch of single track. For example, take this scenario:



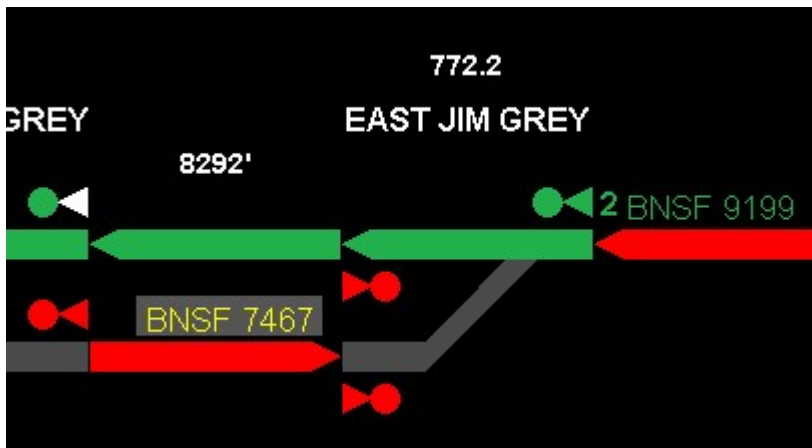
BNSF 7581 is right behind BNSF 9199 as they both head west on the approach to East Jim Grey. One option would be to add a stack command at east and west Jim Grey for BNSF 7581. You can still do that if you would like. Alternatively, you can indicate that the signals at east and west Jim Grey are to “fleet for” two trains:



By right-clicking on the signal, we can select “FLEET FOR”. TSCAD will ask how many trains you wish to fleet by this signal:



In this case, we will select “2” as we have two trains we would like to get west by the signal. Once doing this, a green number will appear by the base of the signal indicating the number of trains that will pass the signal before it drops to red:



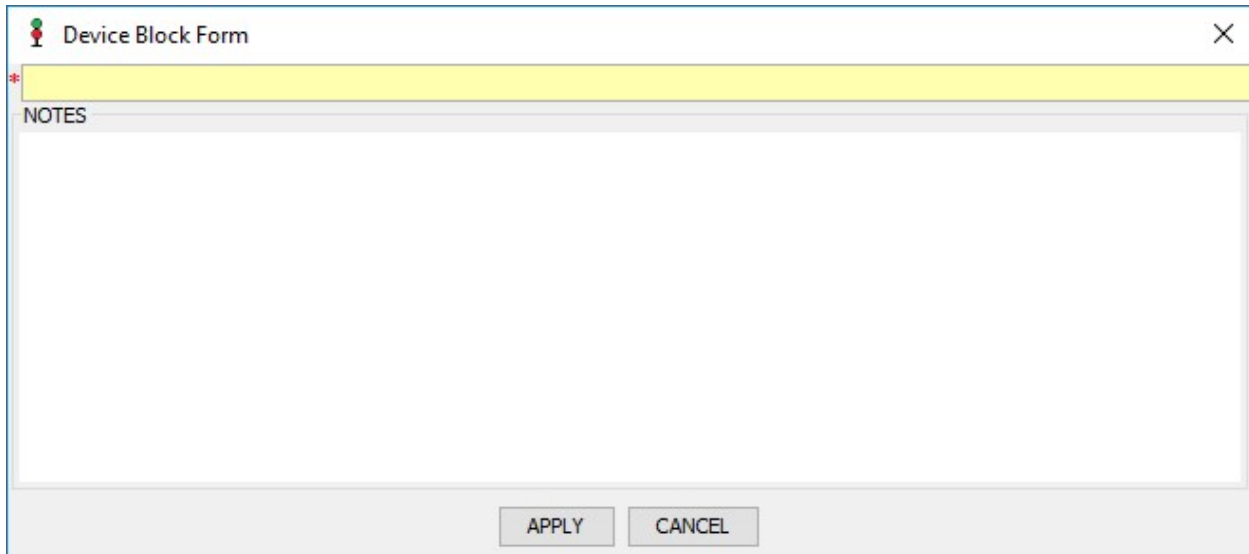
As each train passes the signal, the number will decrease by one. When the final train passes the signal, it will change from fleet mode and drop to red. In the example above, we could add a route stack for BNSF 7467, which would execute after the second westbound passes.

You can easily modify the “fleet for” count by right clicking the signal and selecting “FLEET FOR” again. *Note: If you right-click the signal and remove the fleet by clicking on “FLEET”, the fleet for count will be removed and the signal will return to a normal proceed signal.*

Additional Note: If a signal has both “fleet for” set as well as multiple route stacks, the number next to the signal will show the fleet for count until the fleet for count runs out. At that point, the number will turn yellow and show the number of stack requests (if there are 2 or more).

Route Blocks

If you want to prevent any routes from being aligned over certain stretches of track (such as to protect crews that may be working on the ground), you can issue a route block. Press F8 and click on the block you want to block.



TSCAD will ask for you to put in a title for the block. You can optionally add notes about the block as well.

Track (Block) Tags

There are three types of tags that can be added to a section of track. Two of these tags are “restrictive” tags, and one is not.

- Speed – Used by the dispatcher to indicate a temporary speed restriction. Before a train can be aligned over this stretch of track, the dispatcher must issue the speed restriction to the train.
- Crossing – Used by the dispatcher to indicate a crossing malfunction. Before a train can be aligned over this stretch of track, the dispatcher must issue the speed restriction to the train.
- Information – Used by the dispatcher to indicate information about the block. This tag is non-restrictive and is *not* required to be issued to any trains aligned over the block.

To issue a tag, right-click on a stretch of track and mouse over TAG-CREATE and select either SPEED, CROSSING, or INFORMATION.

Speed Tag

When issuing a speed tag, the following dialog will appear:

The screenshot shows a dialog box titled "TRACK TAGS" with a close button (X) in the top right corner. The main title is "TRACK TAG ON MAIN BETWEEN MP 792.0 AND 794.0". There are three tabs: "SPEED" (selected), "HIGHWAY XING", and "INFORMATIONAL".

Under the "SPEED" tab, there is a "RESTRICTION" section with the following options:

- DO NOT EXCEED** **PASSENGER** **FREIGHT** **MPH**
- BETWEEN MP** **AND MP**
- CHECK IF NO TRACK FLAGS ARE DISPLAYED**

On the right side of the dialog, there are two sections:

- RESTRICTIVE**: **CHECK IF RESTRICTIVE TAG**
- DIRECTION**:
 - BOTH DIRECTIONS**
 - WEST OR NORTH BOUND ONLY**
 - EAST OR SOUTH BOUND ONLY**

At the bottom of the dialog are two buttons: **DONE** and **CANCEL**.

Fill in the maximum speed for passenger and freight trains, the mileposts for the restriction, and whether any track flags are displayed in the field.

Crossing Tag

When issuing a crossing tag, the following dialog will appear:

TRACK TAGS
✕

TRACK TAG ON MAIN BETWEEN MP 792.0 AND 794.0

SPEED
HIGHWAY XING
INFORMATIONAL

1. Crossing warning system at MP is not working properly

is not working properly

Rule 6.32.2, Procedure 2 Applies

2. Crossing warning system at MP

has an activation failure

Rule 6.32.2, Procedure 1 Applies

3. Crossing warning system at MP

is disabled

Rule 6.32.2, Procedure 1 Applies

4. Insufficient clearance at MP

(Do Not Exceed 15 MPH)

Rule 6.32.4 Applies

5. Damaged Crossbucks at MP

(Do Not Exceed 15 MPH)

Rule 6.32.4 Applies

DONE
CANCEL

RESTRICTIVE

CHECK IF RESTRICTIVE TAG

DIRECTION

BOTH DIRECTIONS

WEST OR NORTH BOUND ONLY



EAST OR SOUTH BOUND ONLY

Select the type of malfunction (this would be given to the dispatcher by maintenance of way crews). At that point, indicate the milepost of the crossing and the name of the road.

Information Tag

When issuing an information tag, the following dialog will appear:

Fill in the information desired.

Restrictive Tags	Non-Restrictive Tags
	
<p>A restrictive tag will appear with a blue number tag. The block itself will also appear in the same blue color. If more than one tag is on the same block, the number will increase accordingly.</p>	<p>A non-restrictive tag will appear with a lime green number tag. Because it is non-restrictive, the block will remain white. If more than one tag is on the same block, the number will increase accordingly.</p>

Modifying and Removing Tags

You can modify or remove tags by right-clicking on the block and selecting TAG-MODIFY or TAG-REMOVE.

Issuing Track and Time

Track and Time is used to protect tracks for maintenance of way. Click F5 to enter Track and Time mode. The cursor will change to show T&T displayed. Click on the starting and ending blocks for the limits of the Track and Time. When doing so, the following window will appear:

TRACK AND TIME 113-2

Monday Aug 12, 2019 11:24 LAST, FIRST {FML}

TRACK and TIME NO. 113-2

TO: [Yellow Highlighted Field]

UNTIL: 11:45 [Time Selection Buttons: +15, +30, -15, -30]

MAKE JOINT AUTHORITY

VEHICLE ASSOCIATION [Empty Box]

BEHIND TRAIN SELECTION [Empty Box]

READ CANCEL

ISSUED TO , TRACK AND TIME NO. 113-2
GRANTED ON MAIN TRACK
BETWEEN EAST SILT, SWITCH NO
AND EAST EDWARDS, SWITCH NO
JOINT
UNTIL 11:45

Specify the name of the worker requesting the track and time. When doing so, you can then click READ. Or, you can modify the time that the track and time is valid until.

TRACK AND TIME 113-2
✕

Monday Aug 12, 2019 11:24
LAST, FIRST {FML}

TRACK and TIME NO. 113-2

TO: FOREMAN SMITH

UNTIL: 11:45

MAKE JOINT AUTHORITY

VEHICLE ASSOCIATION

BEHIND TRAIN SELECTION

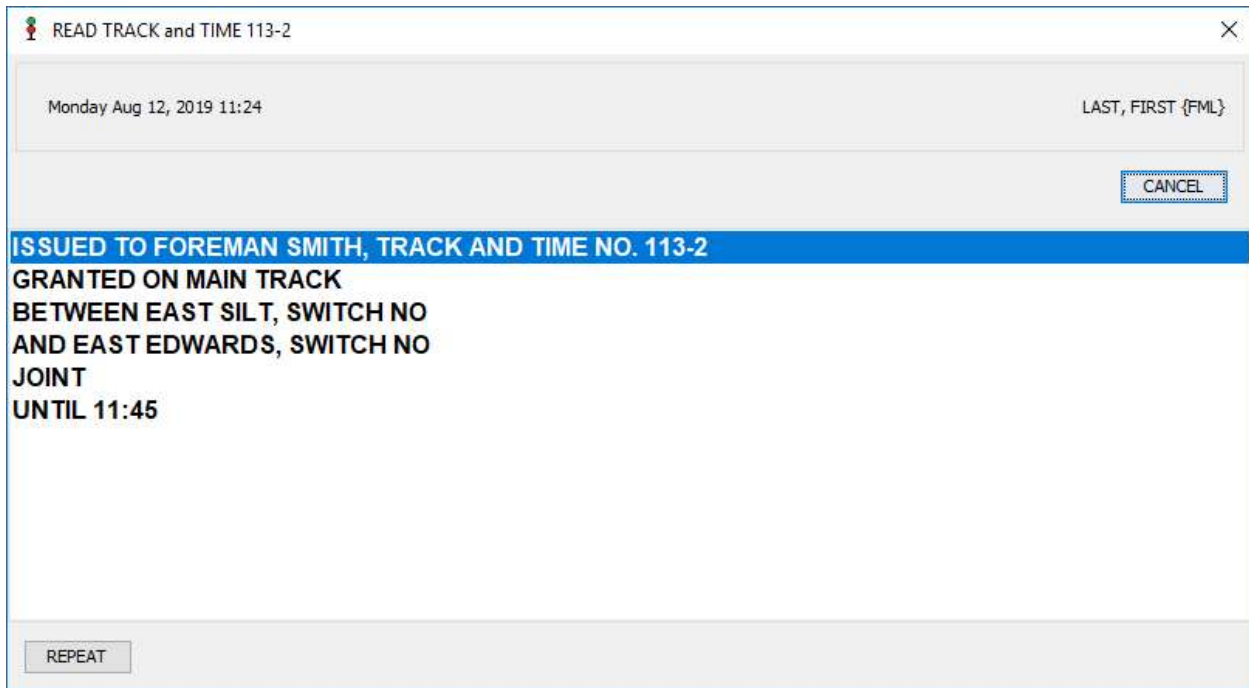
READ
CANCEL

ISSUED TO FOREMAN SMITH, TRACK AND TIME NO. 113-2
 GRANTED ON MAIN TRACK
 BETWEEN EAST SILT, SWITCH NO
 AND EAST EDWARDS, SWITCH NO
 JOINT
 UNTIL 11:45

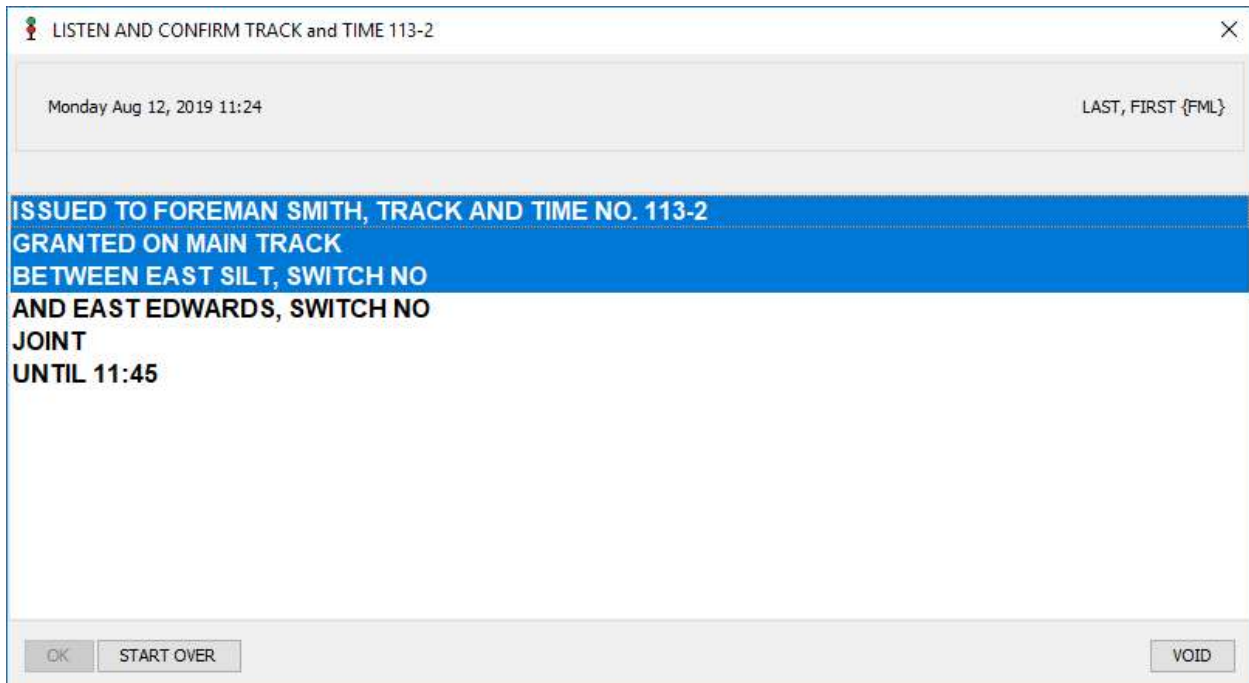
The time can be increased or decreased single minutes at a time or at 15- or 30-minute intervals.

If the MAKE JOINT AUTHORITY check box is selected, then additional track and time (for other workers) can be issued within the same limits. If this is not selected, it is considered “sole authority”, and no other track and time can be issued in the same limits.

Clicking on READ will show a dialog that allows the dispatcher to read the track and time limits to the worker:



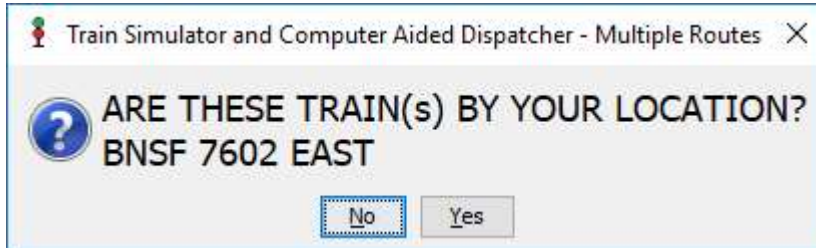
After reading the information to the worker, click on REPEAT and wait for the worker to repeat the information back. With each row read back correctly, click on the row to highlight it:



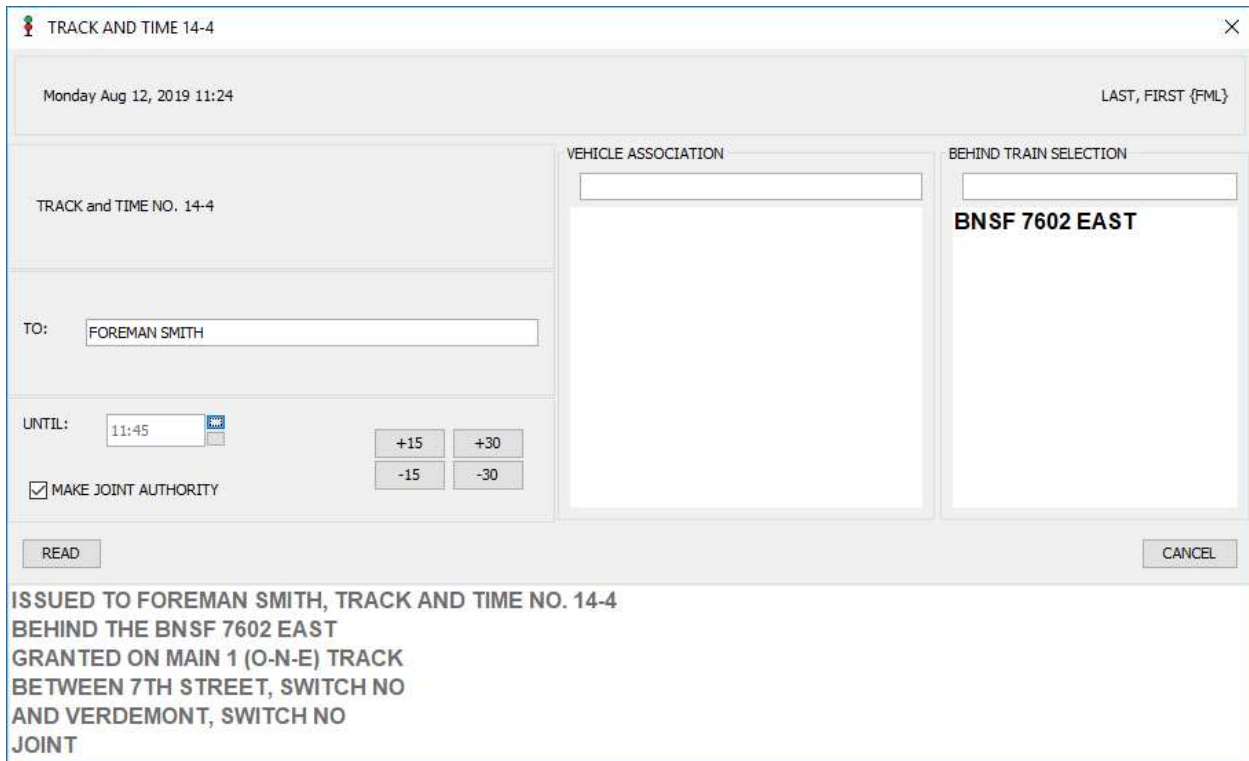
Once all rows have been read, you can click on OK.

At this point, the track and time has been issued and the track will appear blue. No signals can be aligned through the track and time limits.

You can issue track and time *behind* a train, even if signals are aligned within the limits. TSCAD will ask the dispatcher to ensure all trains are past the location of the worker requesting the track and time:

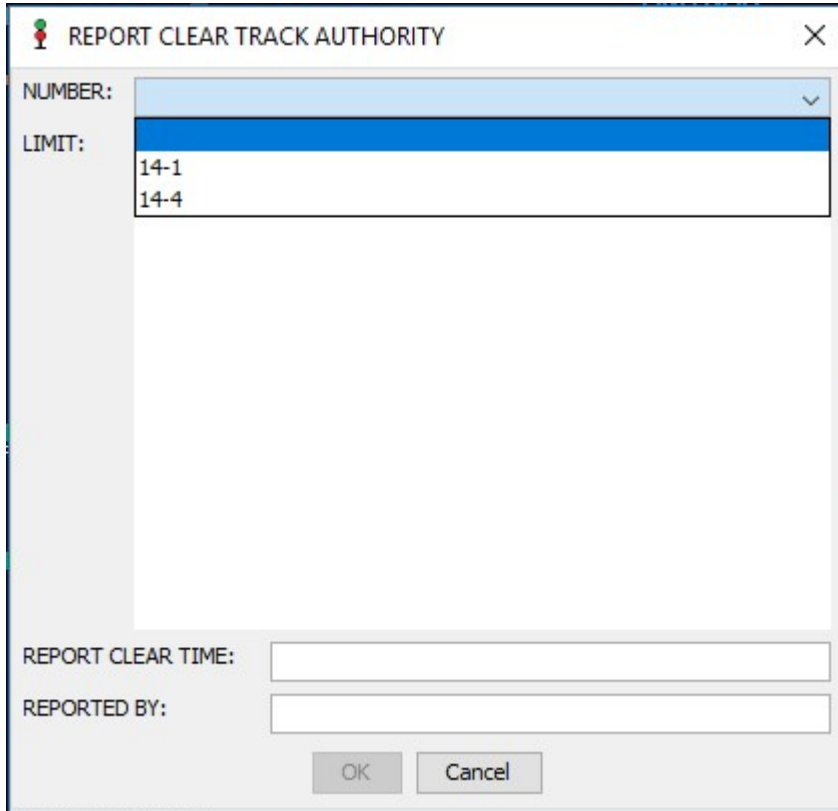


If the answer is yes, the track and time dialog will again appear. Note that the information about the train is included:



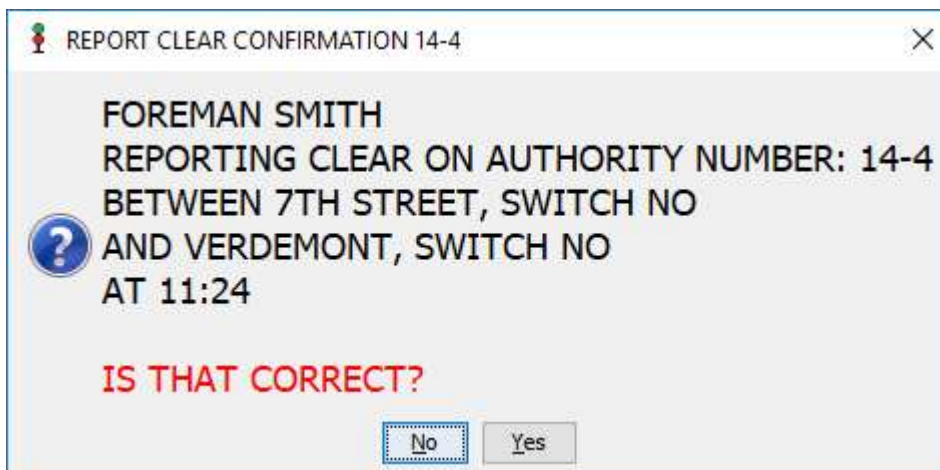
Clearing Track and Time

When issued, each track and time limit is given a unique number. When releasing track and time, the worker should call the dispatcher and indicate the number that is being released. Press F6 to bring up a list of active track and time limits:



The screenshot shows a dialog box titled "REPORT CLEAR TRACK AUTHORITY". It features a "NUMBER:" dropdown menu and a "LIMIT:" list box. The list box contains two entries: "14-1" and "14-4", with "14-4" selected. Below the list box are two text input fields: "REPORT CLEAR TIME:" and "REPORTED BY:". At the bottom of the dialog are "OK" and "Cancel" buttons.

Click on the NUMBER field to bring up the limit to be released. Once the proper limits have been recalled, click on OK to release the limits.

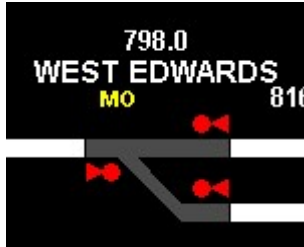


The screenshot shows a confirmation dialog box titled "REPORT CLEAR CONFIRMATION 14-4". The text inside reads: "FOREMAN SMITH REPORTING CLEAR ON AUTHORITY NUMBER: 14-4 BETWEEN 7TH STREET, SWITCH NO AND VERDEMONT, SWITCH NO AT 11:24". A question mark icon is positioned to the left of the text. Below the text, the question "IS THAT CORRECT?" is displayed in red. At the bottom of the dialog are "No" and "Yes" buttons.

Chapter 4 – Additional Features

Unlocking Turnouts

A powered turnout cannot be hand-thrown in the field unless it is first unlocked. In order to unlock a turnout, right-click on a turnout and select UNLOCK TURNOUT. Once unlocked, a yellow MO tag will appear above the turnout (indicating “Manual Operation”), and both legs of the turnout will appear gray (if unoccupied) or red (if occupied).

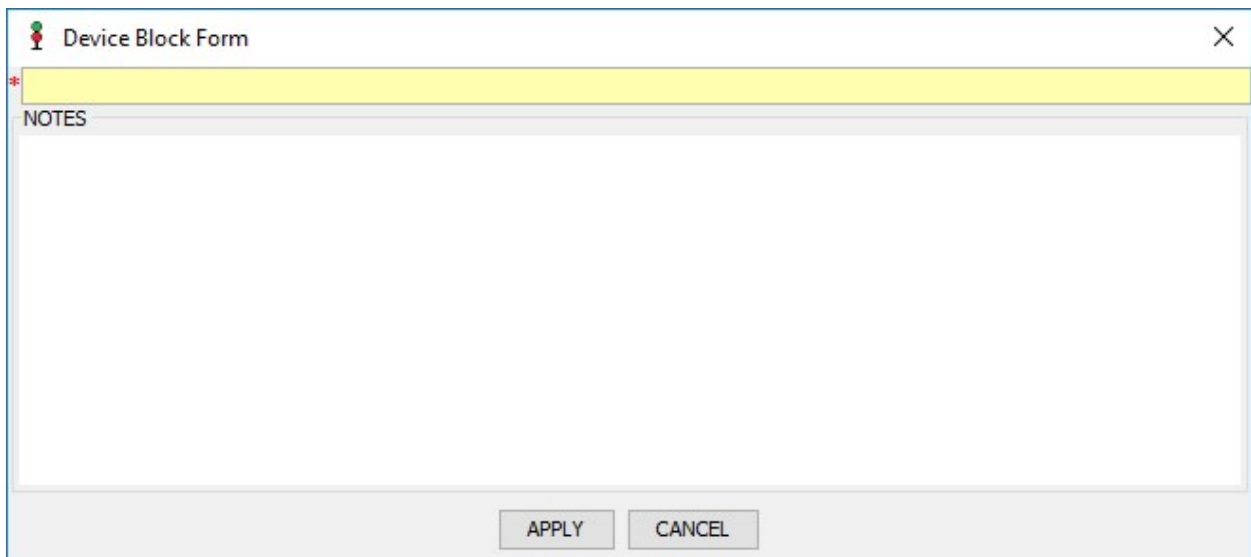


When a turnout is in manual operation, TSCAD does not know which way it is aligned. Therefore, both legs of the turnout appear as the same color.

Once the turnout is occupied by the train and crews are clear, you can right-click and select LOCK TURNOUT. TSCAD will place the turnout back in power and the display will update accordingly.

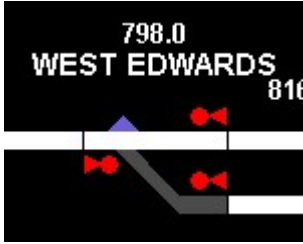
Blocking Turnouts

Like track blocks, a turnout can be blocked by the dispatcher. To block a turnout, right-click on the turnout and select BLOCK CREATE. The following dialog will appear:



A title is required and notes about the block are optional.

When a turnout is blocked, a purple triangle will appear above the turnout. When blocked, a turnout *cannot be thrown* by the dispatcher.



To remove a block, right-click on the turnout and select BLOCK REMOVE.

Blocking Signals

Like both track blocks and turnout blocks, a signal can be blocked by the dispatcher. To block a signal, right-click on the signal and select BLOCK CREATE. The following dialog will appear:

A screenshot of a software dialog box titled "Device Block Form". The dialog has a yellow header bar with a red asterisk on the left and a close button (X) on the right. Below the header is a text input field. Underneath is a section labeled "NOTES" with a large empty text area. At the bottom of the dialog are two buttons: "APPLY" and "CANCEL".

A title is required and notes about the block are optional. When a signal is blocked, no route can be aligned. Signal are often blocked for trains tied down (with no crew) as a reminder to the dispatcher to not set up that particular signal as the train cannot move.

To remove a block, right-click on the signal and select BLOCK REMOVE.

Chapter 5 – Trains

AI Trains in Run 8

Stopping an AI Train

You can instruct an AI crew to stop their train by right-clicking on the lead occupancy for an AI train. Mouse over TRAINS and then select STOP YOUR TRAIN. The AI crew will immediately begin the stopping process until the train is at a complete stop.

Tie an AI Train Down

If you wish the AI crew to leave the train, meaning the train will be unoccupied, right-click on the lead occupancy and mouse over TRAINS. Then select TIE TRAIN DOWN WHEN STOPPED. Once stopped, the AI crew will leave and the train will remain unoccupied.

Crew an Unoccupied Train

To instruct an AI crew to take over an unoccupied train, right-click on the lead occupancy and mouse over TRAINS. Then select CALL FOR RECREW. This will result in an AI crew taking over the train.

Additional Train Information

Changing Train Directions

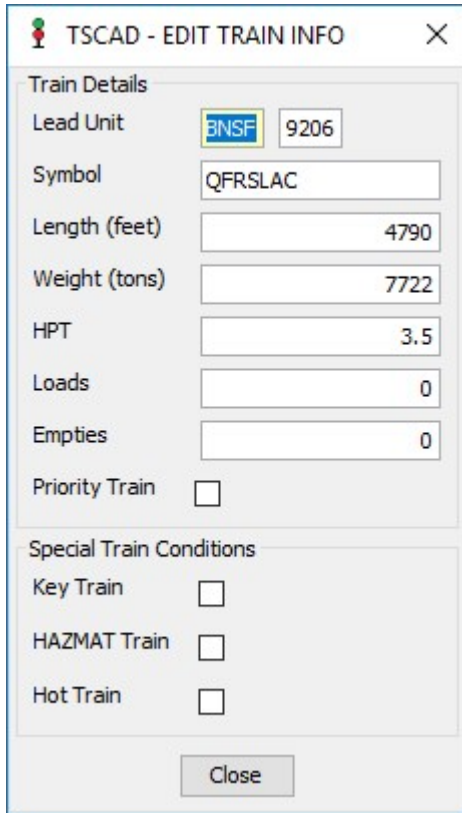
If a train is facing the wrong direction (or no direction), you can change the direction by right-clicking on the lead occupancy and mouse over TRAINS. Select CHANGE DIRECTION.

Changing Single Train Label

You can change the label displayed on the screen for a single train by right-clicking on the lead occupancy and selecting CHANGE LABEL.

Modifying Train Information

The information for all trains is, by default, provided by Run 8. However, the information for a train can be overridden in TSCAD. This does *not* modify information within Run 8, only what is displayed in TSCAD. Right-click on the lead occupancy and mouse over TRAINS and then select MODIFY TRAIN INFORMATION. The following dialog will appear:



Train Details	
Lead Unit	BNSF 9206
Symbol	QFRSLAC
Length (feet)	4790
Weight (tons)	7722
HPT	3.5
Loads	0
Empties	0
Priority Train	<input type="checkbox"/>

Special Train Conditions	
Key Train	<input type="checkbox"/>
HAZMAT Train	<input type="checkbox"/>
Hot Train	<input type="checkbox"/>

Close

Any field displayed can be overridden. Additionally, a train can be flagged as a “Priority Train” (such as an intermodal train), a “Key Train” (indicating it has a speed restriction), a “HAZMAT Train” (indicating the train contains hazardous materials), and/or a “Hot Train” (indicating the train contains hot materials).

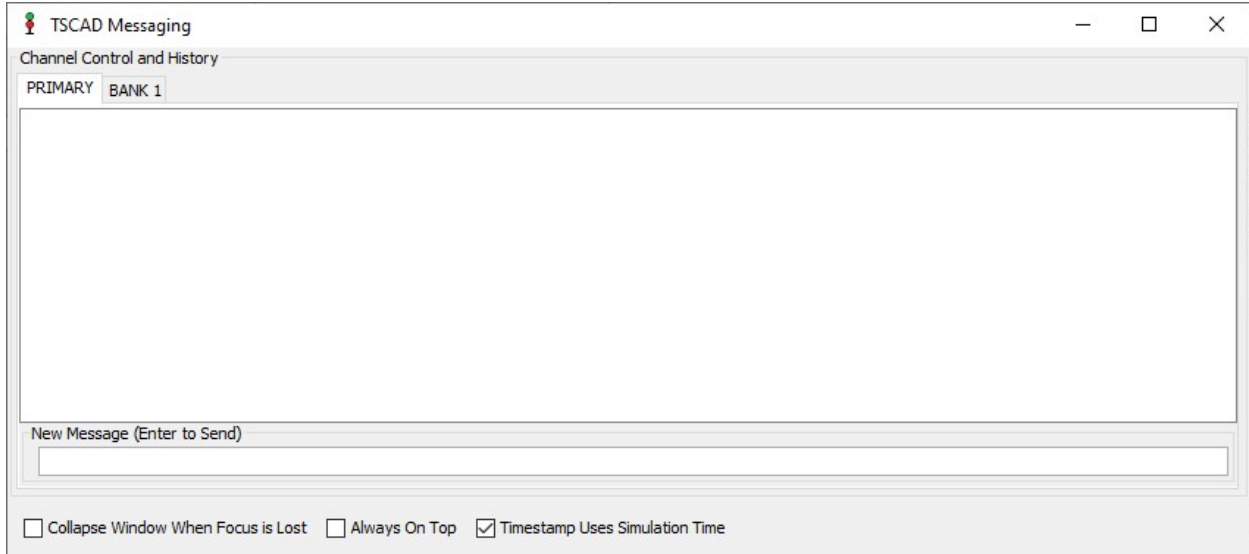
When selecting any/all of these train types, a colored box will appear around the train information on the display for easy dispatcher reference:

- Priority Train – Teal
- Key Train – Purple
- Hazmat Train – Light Blue
- Hot Train – Orange

Chapter 6 – Communications

TSCAD Messaging Updated in 2.0.7!

When dispatching in TSCAD, it is not always convenient having Run 8 in the foreground as it is necessary to see text communications being typed within Run 8. These messages can be viewed in TSCAD directly. Click on COMMUNICATIONS and select OPEN MESSAGES. The following dialog will appear:



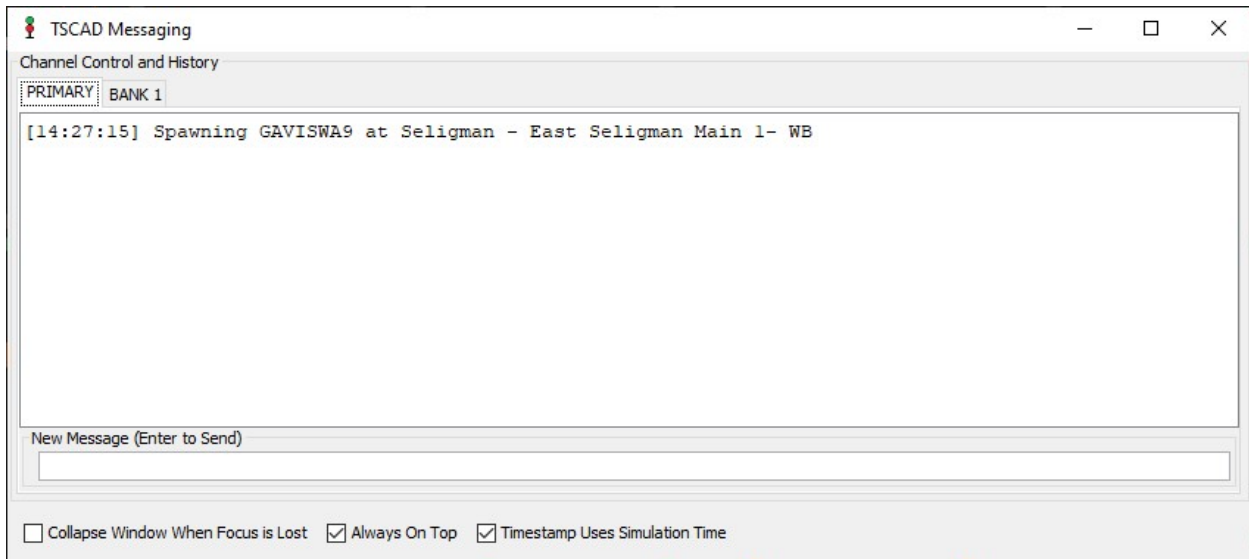
Options

There are three check box options at the bottom of the window:

- Collapse Window When Focus is Lost – When checked, the window will collapse to a more minimized state. See “Minimizing the Message Window” ahead for more information on how this functionality works.
- Always On Top – When checked, the messaging window will remain on top of all other windows on your desktop. *Note: When “Collapse Window When Focus is Lost” is selected, “Always On Top” is automatically selected and disabled. The window must always be on top when in collapsed mode.*
- Timestamp Uses Simulation Time – When checked, the timestamp that appears in the chat log will reflect the Run 8 game time the message was received. When unchecked, the timestamp that appears in the chat log will reflect your PC’s system time. *Note: If this option is changed, it only applies to newly received messages, not those already in the chat window.*

Primary Messaging

By default in Run 8, all messages are sent on Channel 0. These messages will appear in the PRIMARY tab on the TSCAD Messaging window.



The main section of the window shows the chat log, with the most recent messages appearing at the bottom. To send a message, place your cursor in the “New Message” field, type your message, and press the enter key to send the message.

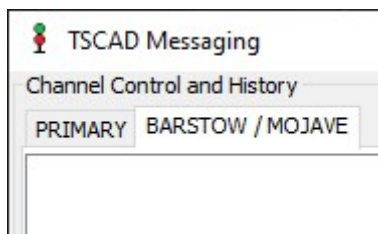
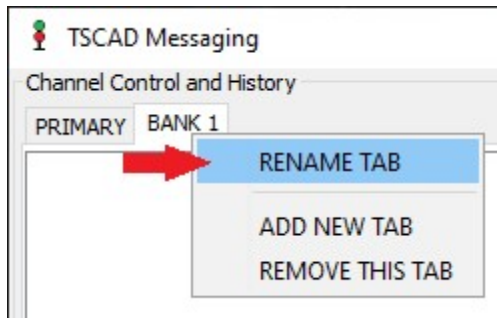
Additional Channels

When you are dispatching, particularly if you are dispatching prototypically, then communications with trains will not be on Channel 0, but on a channel that is specific to the route you are dispatching. Look at these BNSF territories and the associated channels trains use to communicate with the dispatcher:

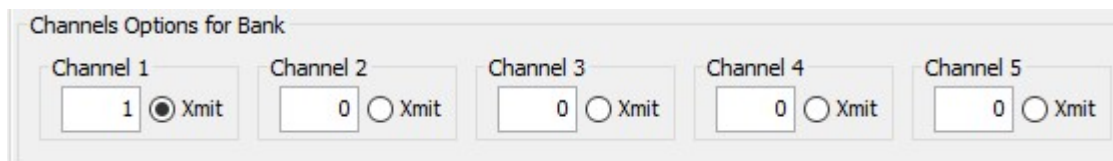
Subdivision/Area	Dispatcher	Radio Channel
Barstow	DS-113	32
Mojave	DS-113	65
Needles	DS-12	55
Seligman	DS-11	36

Take an example where you are dispatching all these territories, serving as DS-113, DS-12, and DS-11. You need to be able to communicate with trains on four different channels. The TSCAD Messaging window allows you to add additional tabs, and each additional tab supports up to five channels.

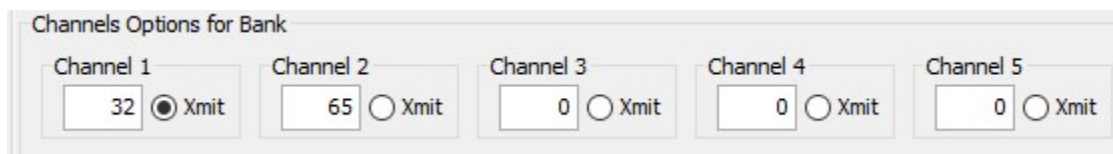
Start by renaming the “BANK 1” tab to be “BARSTOW/MOJAVE”. To do this, click on the “BANK 1” tab, and then right click on the tab name (“BANK 1”):



Now that you have renamed the tab, take look at the channels that are available for the tab:



You have five channels. Currently, “Channel 1” is set to Channel 1. Channels 2-5 are not being used. Add the Barstow Channel and Mojave Channel to Channels 1 and 2:

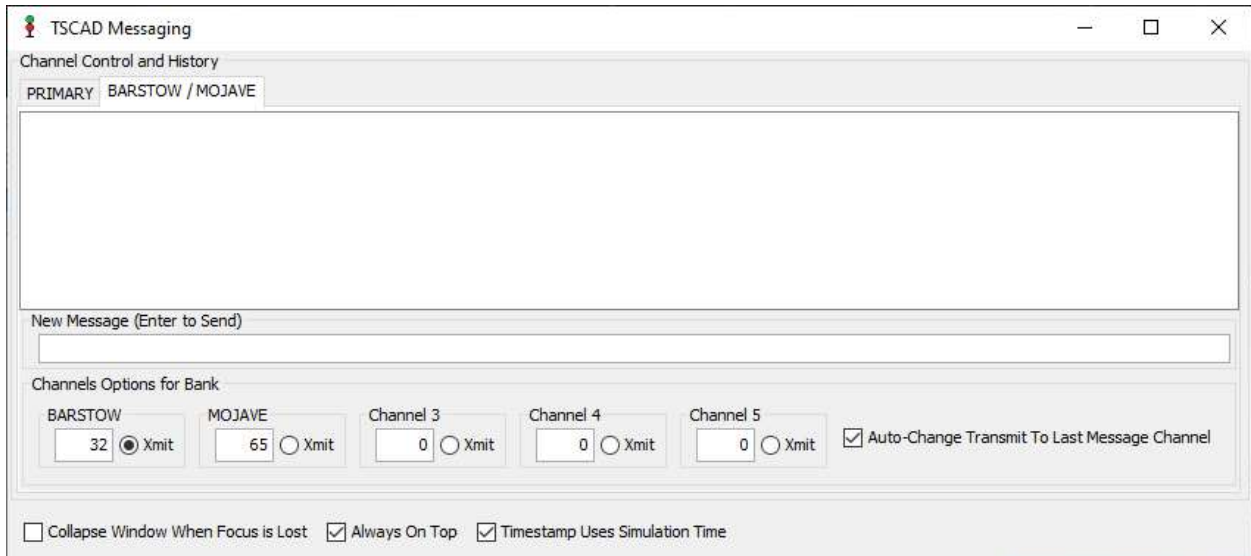


We can leave the other three channels as zero, indicating they will be ignored.

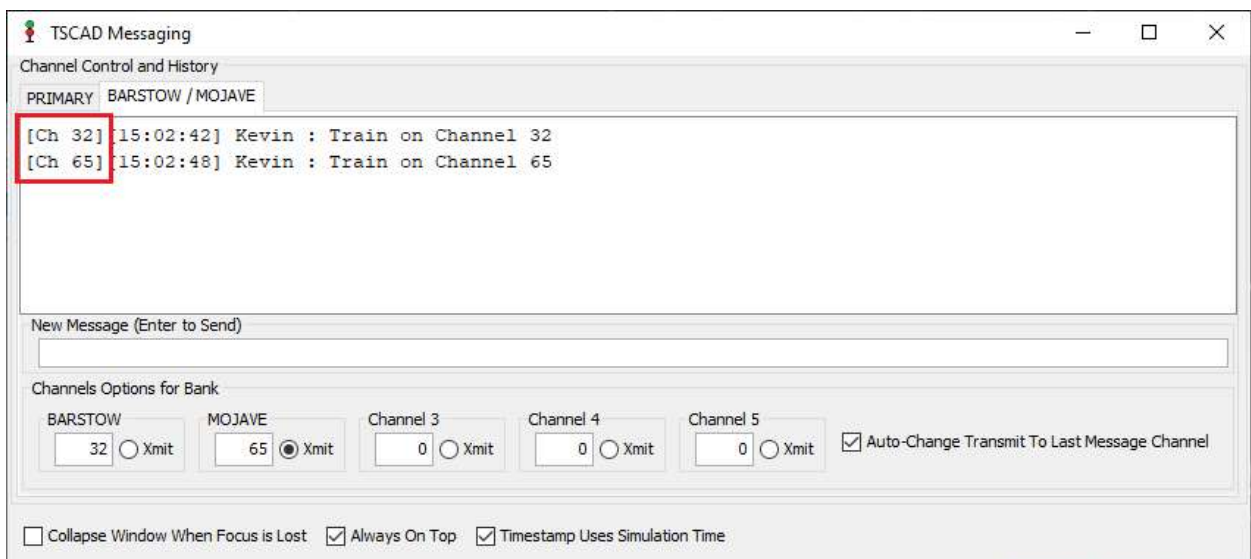
In order to remember which channel is Barstow and which channel is Mojave, double-click on the channel name (e.g. “Channel 1”) and change the name:



After changing the name of “Channel 2” to “MOJAVE”, the screen now looks like this:



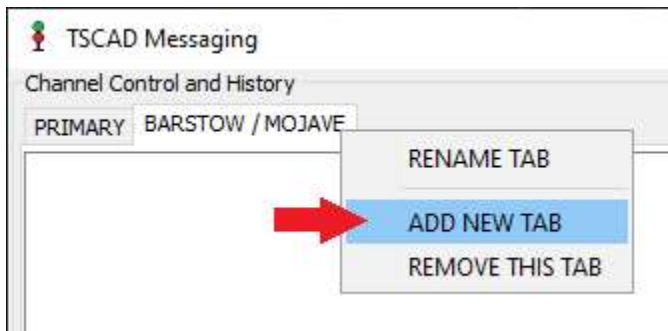
This tab will now display any messages sent by trains on *either* Channel 32 or Channel 65. When a message is received, it is prefixed with the channel it was received on:



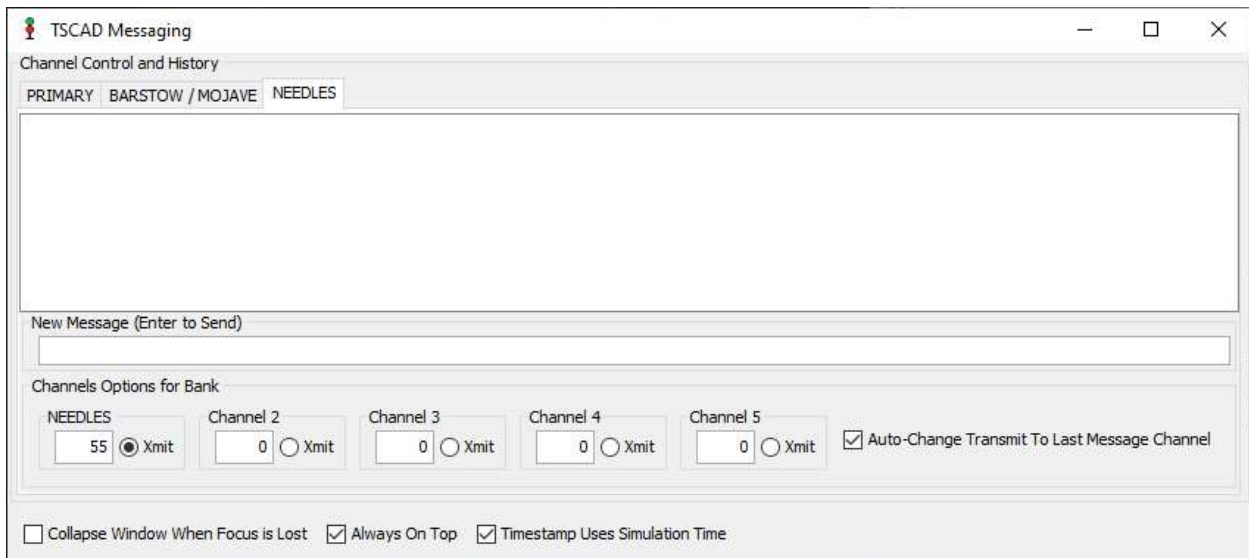
Note: Channel label does not appear in the PRIMARY tab. All message on Channel 0.

The radio button labeled “Xmit” with each channel indicates the channel that you as the dispatcher will be sending a message to. If the check box “Auto-Change Transmit To Last Message Channel” is selected, then TSCAD will automatically change the transmit channel to match the channel of the last message received. *Note: If your cursor is currently in the “New Message” field and you are typing out a new message, the channel will not change if a new message is received as TSCAD assumes the message you are typing should go to the channel you already have selected for transmission.*

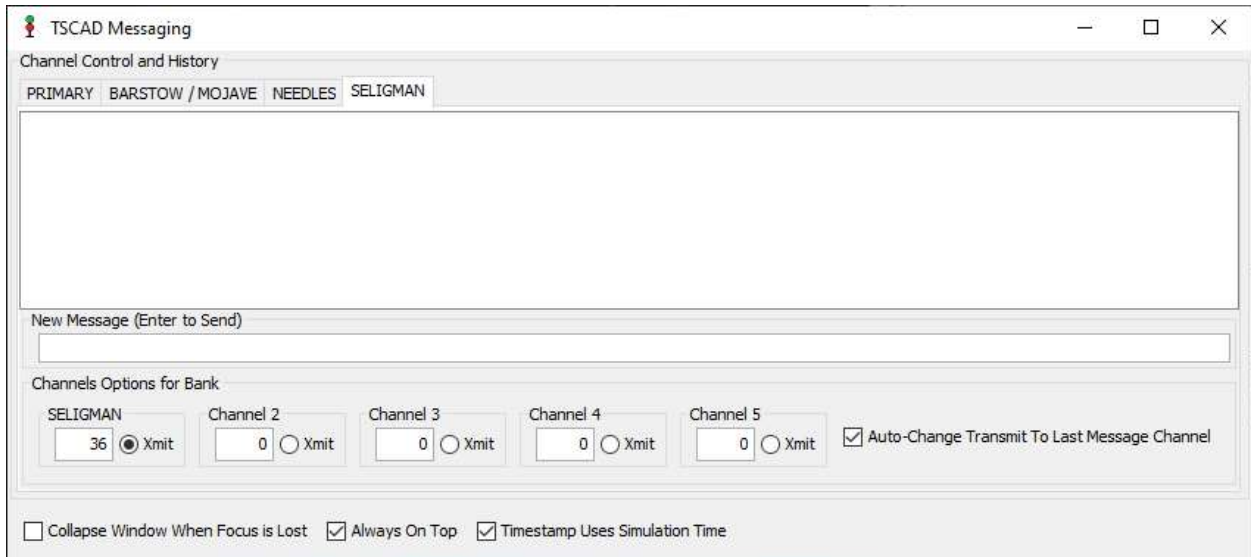
Now, in this example, Needles and Seligman should also be added so they can be monitored. To do this, right click on any tab and select “ADD NEW TAB”.



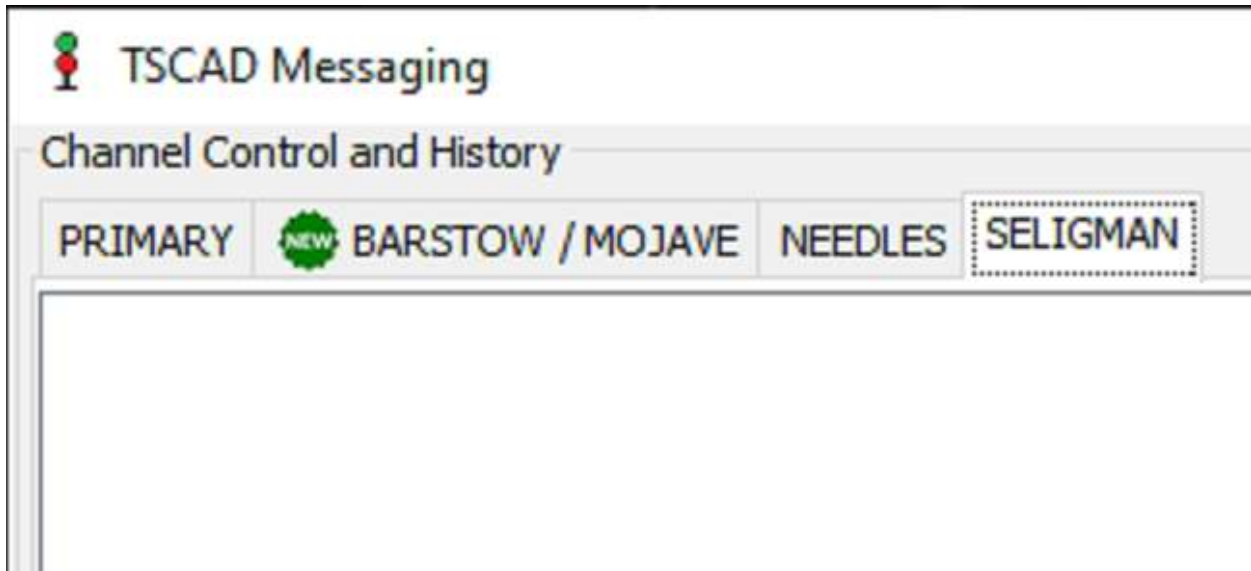
A new tab, labeled “BANK 2”, will be added to the display. Follow the same steps above, indicating the channel is 55. Rename labels as you see fit:



And lastly, doing this one more time, Seligman can also be set up and monitored:

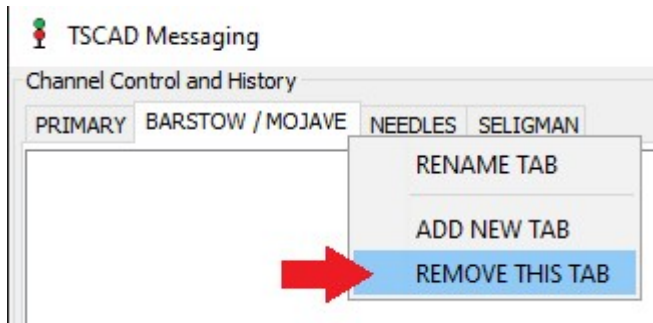


Now, all channels that you are responsible for as the dispatcher for DS-113, DS-12, and DS-11 are covered. Whenever a new message is received, a **New** icon displays in the tab that received the message:



Clicking on the tab that has the new message indicator will cause the indicator to disappear.

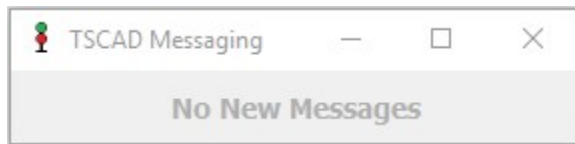
You can remove a tab that is no longer needed by right-clicking on the tab and selecting “REMOVE TAB”:



This functionality can be used to organize your messages however you feel is best. For example, if you would prefer that BARSTOW and MOJAVE are separate tabs, that is your discretion. Likewise, if you want all four channels (BARSTOW, MOJAVE, NEEDLES, AND SELIGMAN) consolidated to a single tab, you can do that as well.

Minimizing the Message Window

In order to maximize screen real-estate, the messaging window can be collapsed when not being used. Select “Collapse Window When Focus is Lost”. When shifting focus away from the message window, it will collapse and show as follows:



If a new message is received, the small window will flash to grab the dispatcher’s attention. Click on it to restore the window and read the messages and reply if necessary.

The messaging window, whether collapsed or not, will always remain on top so it is visible.

DTMF Notifications

When a train crew wishes to get the dispatcher’s attention, the crew will “tone the dispatcher”. They will do this by pressing * and then a certain number sequence on their radio. For example, on the BNSF Mojave Sub, the train crew should be on channel 65/65 and they press *13 in order to “tone up” DS-113. When the crew does this, the following notification is displayed in TSCAD:



This informs the dispatcher that a train crew is attempting to get ahold of them.

Emergency Tones

If a train is experiencing an emergency and needs to immediately contact the dispatcher, they can use this same tone system to declare an emergency. This is typically done by pressing *911 on their radio.

If a train crew does declare an emergency by making an emergency tone, the DTMF Notification will show in red and yellow (instead of yellow and black) to indicate it is an emergency:



If you receive an emergency tone, you should immediately stop anything else you are doing and answer the emergency tone. If you are currently speaking with another train crew or maintenance of way, you should let them know that you will return, but that you must answer an emergency call.

Note: See the FAQ section in Chapter 9 for details on how to close the DTMF Notification window.

Chapter 7 – Hotkey and Menus

Hotkeys	
F2	Issue Speed Restriction
F3	Issue Crossing Restriction
F4	Issue Information Tag
F5	Issue Track and Time
F6	Clear Track and Time
F7	Create Device Block
F8	Create OS Block
F11	Train Tag Toggle
F12	Close Dispatcher Window
Ctrl+Q	Fast Mode
Ctrl+W	Route Stack Mode
Ctrl+E	Change Train Tag to Lead Unit Number
Ctrl+S	Change Train Tag to Train Symbol
Ctrl+C	Change Train Tag to Train Crew
Ctrl+T	Change Train Tag to Time In Block
Ctrl+M	Open Messaging Window
Ctrl+1	100% Zoom
Ctrl+2	150% Zoom
Ctrl+3	200% Zoom
Ctrl+4	Minimum Zoom

Chapter 8 – Updates

Additional features for TSCAD are still being planned and future updates are planned. It is also known that there are bugs in TSCAD. Bugs will be fixed as time permits. TSCAD was written and is being maintained by a single individual.

I hope you enjoy using TSCAD and that it can provide some prototypical dispatcher experience for you along with Run 8 Train Simulator!

Chapter 9 - FAQs

Since the release of TSCAD, several frequently asked questions have come up. This chapter will strive to answer those questions.

How Do I Close the DTMF Notification Window?

You may have noticed that clicking on the “X” in the upper right corner does not close the DTMF Notification Window:



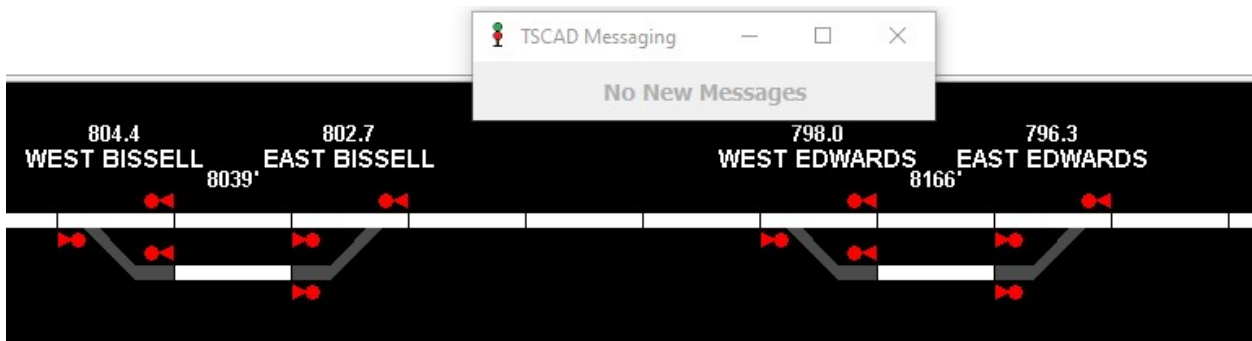
This is because this window will grow if multiple DTMF notification are received:



Clicking on the “X” would clear all notifications at once. Instead, to clear a notification, double-click on the single notification you wish to clear. This will remove that notification from the list, telling TSCAD you have addressed it. The other notifications will remain until you double-click those as well. Once you double click the last notification, the notification will clear and the window will close.

The Messaging Window Is Annoying! Where Should I Put It?

Some people have commented that the Messaging Window is annoying, even with “collapse when focus lost” is enable. While a possible change to the user interface will be looked at in future versions of TSCAD, for now it is recommended that you leave it collapsed when focus is lost and that you place it near the top of your dispatch screen:



This should keep the window completely out of the way of the dispatching screen when you do not need it, and you can simply click on it when you do need it. That way you are not fighting with the screen, moving it all around your window.

What is “Field Verification of Track”?

Occasionally, the communication between Run 8 and TSCAD conveys an improper occupancy. This typically happens when TSCAD first starts and loads data from Run 8. If you find a block that shows occupied in TSCAD but you know is not occupied in Run 8, use Field Verification of Track to force TSCAD to ask Run 8 to confirm occupancy in that block. This should clear the occupancy in TSCAD if there is nothing occupying that block.

What Is the Run 8 Comm Bridge?

Have you noticed that two programs launch when you start TSCAD? One of them being TSCAD itself, and the other being the Run 8 Comm Bridge. The Run 8 Comm Bridge has the following icon:



You have probably also noticed that you cannot open that window. This is by design. Run 8 and TSCAD were written using different technologies. The only way to get them to communicate with each other is with a small bridge program. It knows how to communicate with both applications. It does not have any windows or UI associated with it for you to see, which is why no screen appears if you click on the program. It silently starts when you start TSCAD, and it goes away when TSCAD is shut down.

What Does the Color of the Train ID Mean?

The ID for a train (whether it be the lead unit number, the train symbol, the crew, etc), the tag will either be green, yellow, or red. What do these colors mean? They refer to the direction the train is moving:

- Red: No direction assigned
- Yellow: Train’s direction is east or south
- Green: Train’s direction is west or north

When TSCAD first loads, all trains will show as red as their direction is not currently known. You can manually assign a direction by right-clicking on the train, selecting “TRAINS”, and then “CHANGE DIRECTION”. If no direction is assigned to a train and the train starts moving (leaving the block it is initially in), TSCAD will assume it is moving in that direction and automatically assign that direction to the train.

These colors are prototypical for real world dispatching software applications.

Why Does an Occupancy Appear Without an ID?

On occasion, particularly when TSCAD first loads information from Run 8, a block will appear occupied (red), but without any ID above it (no lead unit, symbol, etc). This is a known issue that seems to happen when all the train information is initially sent from Run 8 to TSCAD when starting. If this is a false occupancy, you can request field verification (see above). However, if this is a legitimate occupancy, the ID did not load from Run 8. As soon as the train starts moving, and progresses to the next block, the train information will be loaded from Run 8.

Why Does TSCAD Fail to Show Occupancies for Open Turnouts?

In prototypical dispatching software systems, if a manual turnout is left open in CTC limits, it would show as an occupancy in that block to the dispatcher. This prevents the dispatcher from aligning a clear signal into a block with an open turnout, potentially causing a derailment.

Why doesn't TSCAD support this functionality? Right now, the position of manual turnouts is not sent out of the Run 8 application. In other words, TSCAD is unaware of manual turnouts or their positions (open or closed). If, at some point in the future, the developers for Run 8 include that in the information being sent to TSCAD, a change will be made to TSCAD to show an occupancy for open turnouts.

Why Is Help Unavailable in TSCAD?

You may have noticed that there is a "Help" menu option on all screens but trying to use help does not do anything. Believe it or not, creating in-app help is one of more challenging aspects of software development. I hope to add this in the future, but for now, the menu option is there as a future placeholder.