

Appendix E - Troubleshooting and Help Files

User's Help File

How to get the cars moving

This checklist is intended to help new ProTrak users get all their cars moving at the initial setup.

You get your cars moving by checking two requirements. To get a car moving it must be possible to get:

1. waybills into cars;
2. trains to move cars.

Which requirement is the issue?

Click on "Traffic", "Freight and passenger cars", to show the Summary list of Freight cars. Scan down the listing looking for four items:

1. are the cars active? (look in the column headed "Contents". If the term "de-activated" shows, the care is not active).
2. where are the cars now (location SPOT – see Spot column)?
3. where are the cars going (destination SPOT – see Dest'n column)?
4. do the cars have waybills (see "BoL column) ?

Cars marked "de-activated":

1. may have a zero model weight - to activate enter a model weight for the car.
2. may be bad-ordered - repair the car at the "inspection" data field.
3. may have been deliberately de-activated - select the car and hit the "activate" button.
4. or, may have been "active staged" - hit the "activate" button.

Check the location SPOT for your cars. Make sure your cars are on your railroad. The location may be a residual leftover SPOT from the default railroad. ProTrak, from Build #99, now automatically corrects incorrect staging SPOTs when the cars are listed.

Check the destination SPOT for your cars. Make sure each destination is a SPOT on your railroad. The destination may be a residual leftover SPOT from the default railroad. To correct the car destination SPOT "Empty the car" at the car's waybill data field. Empty a car by entering <00> (two zeros) then <Tab down>. Hit "Yes". Hit "OK".

Do cars have waybills (BoL) assigned?

If cars have waybill numbers (other than 1, 2 and 18) listed under the "BoL" (Bill of Lading) column, then some cars are loading properly. The issue may be switching trains, or train routings, or the train's day-of-the-week. See the "Trains" section below.

If you are just starting out with ProTrak, and have not run a Daily Summary Update yet, no cars will have waybills. Cars will be only returning to their home regions (staging tracks). Waybills are assigned during the Daily Summary. To load cars (assign waybills) "run" an operating session, then run the Daily Summary Update.

If there are still no waybills assigned to cars, then you need to first work on customers, waybills and car-orders.

The first requirement: waybills into cars

The best way to do this is to work on 1 industry/customer, with 1 waybill.

For the customer, waybill and car-order, check that:

1. the customer
 - a) has a SPOT (siding number), and
 - b) the siding length is longer than a car.
 - c) Make sure the siding radius is "large" (not zero) and the Plate is "U".
2. there is a waybill that goes to/from this SPOT. It is the SPOT that matters. The waybill must have:
 - a) origin and destination SPOTs. Both the origin and destination SPOTs must be on your railroad, listed either as a customer SPOT or as a staging track SPOT.
 - b) a car-kind.
 - c) a lading, with tons and volume ⁽¹⁾.
 - d) a short length (36 feet or less).
 - e) season set with all 12 months checked/listed.
 - f) frequency set at "every time ordered".**
3. there is a car-order for this customer using this waybill
 - a) make the order on "Monday", or "All".

For a car, of the car-kind that matches the waybill car-kind exactly, check that:

1. the car-kind matches exactly;
2. the car model weight is not zero (the car is not listed as "de-activated");

¹ From Jim: If you have volume/weight issues with a car. Set the load weight and check for volume. In other words use weight as the driving force in most cases.

3. the car capacity is greater than the waybill tons;
4. the car volume is greater than the waybill volume;
5. the car length is 6 ft longer than the target waybill length (if it has a length).
6. the car has **NO** restrictions.

Make sure the day-of-the week is "Monday". At Transportation, Update (Daily Summary), set tomorrow to "Monday". If the day is not Monday, run a dummy operating session in the computer so the session is complete. Then return to Update and set tomorrow to "Monday".

The second requirement: trains to move cars

ProTrak determines the route a car takes from the origin SPOT to the destination SPOT. This routing may require the cars to be moved via a number of trains. ProTrak must be able to find a train that serves each SPOT, and the intermediate trains with routing that connects these two switching trains.

Customer data requirements:

1. Each customer must be served by a switching train. For the customer check that:
 - a. the customer has a switching train;
 - b. the switching block is from 1 to 99, and is unique for that train.
2. Now, go to "Edit", "Show", "Show switching trains". The customer SPOT should show under the column listing for the selected switching train. If it doesn't, go back to customer and check the switching train and the switching block. The customer should be listed on the right hand online data screen.

SPOT data requirements:

1. Both the origin and destination SPOTs must be on your railroad, listed either as a customer SPOT or as a staging track SPOT.
2. Both SPOTs must be served by a train.
3. If one of the SPOTs, on the waybill, is a staging track, then that staging track must be served by a train.
 - a) Note: Staging tracks can be grouped by "Region". Staging tracks with the same region number can be served by one train.

Train data requirements:

1. Trains work from yard siding to yard siding.
- 2. The customer must be either:**

- a) in the same switching zone (station) as one of the switching trains yard sidings, or
- b) in the zone between any two of the switching train yard sidings.

3. Trains work the yards in the order you list the yard sidings.
4. A staging track is listed as train yard siding.
5. A yard siding must be listed only for yards the train works at.
 - a) **NOTE:** List as **few** yard sidings as possible for any one train.

There must be a connection between the origin train and the destination train. An example of a connection is:

1. If the origin is in staging, set the staging train to run from staging to the main yard.
2. Set the switching train to run from the main yard to the town where the customer is, and return.
3. The trains connect at the main yard.

Set all trains to run every day.

1. Connections are found in real time at the time the cars move, during the current day.
2. If some trains do not run "Today", connections that appear to be OK may not be found "Today" as one of the trains in the route may not be found.
3. Set all switching trains to run "Daily".
4. Set all trains that connect with other trains to run "Daily".

Form the Line-up, which can be done at "Scheduling", "Line-up of trains". A check mark will appear beside this menu command.

1. The program uses the train data in the current Lineup.

Online traffic movements

If you have only one yard ("Yd") on your railroad, the online customer may be outside the switching train's switching zone. You may need additional "Yd" yards, or you need at least "y" tracks where the train position can be reported.

For example, suppose you have 4 towns, B, A, C and D in that order along your railroad. There is only one "Yd" yard which is at A, and there are also customers in towns B, C and D. Switching train 4 works A to D and returns. Suppose the train's yard blockings (See Figure E-1) are presently listed as:

1. "ACT-Yd"
2. "ACT-Yd"

The result is that only cars going to "ACT-###" SPOTs are moving. Cars are will not be delivered to customers at towns C or D.

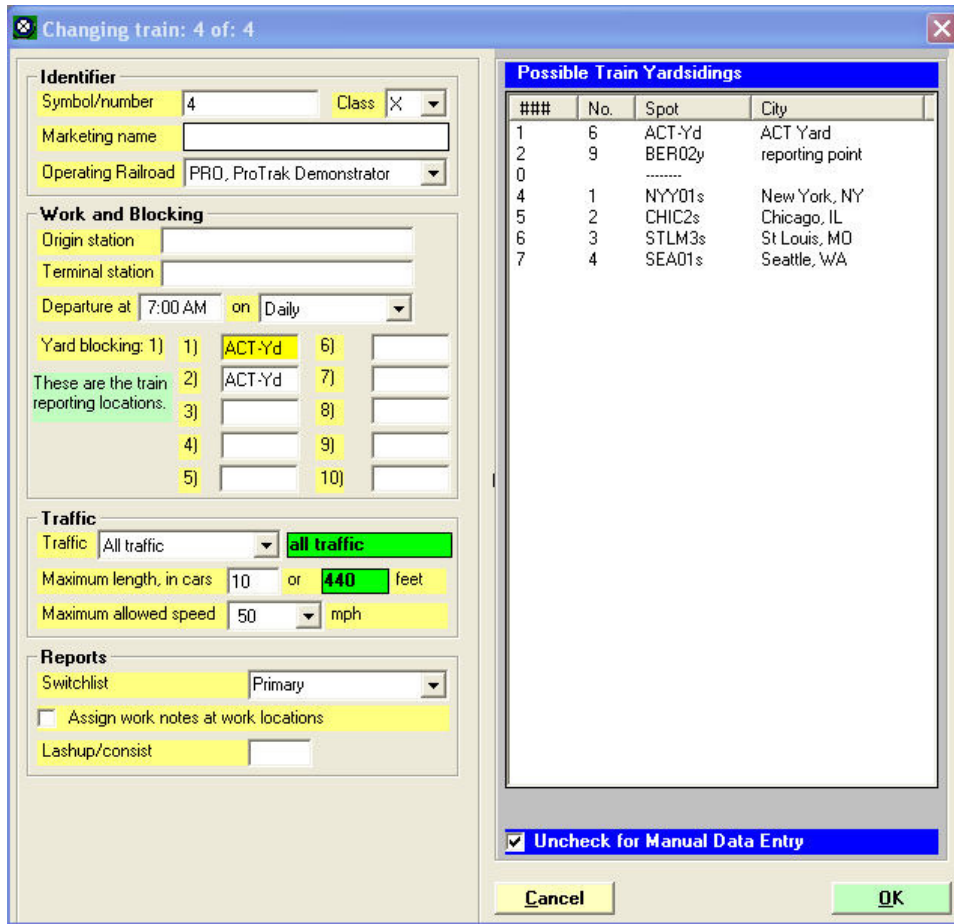


Figure E-1

The solution is to add a "y" yard track at D (and B). Click "Traffic", and "Yards" which will list the yards on your railroad. Go up to "Edit", and click "New yard". Click on the "single track" button. Select "Station D" as the station, and enter a number for the siding number such as <02> or <09>. The resulting SPOT will be displayed as "DDD02y". For now, enter any length, such as 40 inches.

Go back to "Scheduling", "Train jobs" and change the switching train's yard sidings to:

1. "ACT- Yd"
2. "DDD02y"
3. "ACT- Yd"

The turn button will appear opposite "DDD02y". Hit "OK" and hit "Yes" to "Form new Lineup?"

This yard siding listing says that this train starts at the main yard at "ACT", works up to "DDD" and returns to the main yard at "ACT". This switching train, in working the zone from "ACT-Yd" to "DDD02y", will pickup and setoff at all cars

for customers from "ACT" to "DDD", including those at station "C".

Partial railroad setups

You may have chosen to set up only a small portion of your railroad in ProTrak.

- This limits the number of waybills that can be assigned to a car.
- This limits the number of cars that can be loaded with a waybill.
- This limits the possible connections and the possible routes that a car can take from its origin to its destination.
- You may be limiting the switching zones for switching trains.

If you do a limited, partial setup of your railroad, make sure that:

1. all cars have NO restrictions.
2. all cars are active.
3. the car lengths and volumes are greater than the waybills.
4. all SPOTs on the waybills actually exist on your railroad.
5. all waybill frequencies set at "every time ordered".
6. customers spurs are long enough and clearance plate is large enough.
7. all customers are served by a switching train.
8. the switching train zone covers your entire railroad.
9. there are connecting trains that let cars get from "here" to "there".
10. all staging tracks are served by at least one train each.
11. the day-of-the week is Monday.
12. the car-orders are for Monday.
13. all trains work every day.
14. all the trains in the Lineup are your trains.

Gateways, Regions and other considerations.

Gateways

It is likely that at some time, everyone will need to modify the Gateways and Other Railroads file in ProTrak. Here are some steps to take

1. Make sure you have selected one of the Official Guides ⁽²⁾ that match your modeled geographic location.
2. Set up your staging tracks and the "To Railroad" connections. You also need to set your Regions at this time. Regions can be used to group several staging track together as a common end point for car routing.
3. In the Gateways and Other Railroads. For those railroads that you connect to in staging, these may have a connection listed but do not require one. If the railroad does not exist, you may want to add it. These are your direct connections and do not need to go through another railroad to get to yours.
4. Start checking the railroads that you have interchange cars for. There needs to be a logical path from any railroad to any railroad that you have a direct connection with (Staging). Depending on where your model is located in the world, you may want to change the connection locations. A railroad can have more than one way of getting to your railroad. Try not to go more than two deep on the connection list; the deeper levels add processing time during the update routines ⁽³⁾.
5. Add new railroads that are not in the list and make logical connections for them. This would include other model railroads or those that did not exist in the original period of the ORER that you started with.

² ProTrak's Official Guides are based, in part, on the Official Railway Equipment Register's (ORER) that are used by all railways to get information about another railway and that railway's cars.

³ Jim Moir was asked for a more detailed explanation of some of the fields in a Gateway record. Specifically Jim was asked about the "Second connection" data field. Here's Jim's reply:

"The program first searches through all the "Gateways" using the "first connection" datafield. The program searches for a route between a staging track (by railroad name) and the car-owner's railroad - using only the "first connection" datafields - for all railroads. A viable route is limited to 256 connections (i.e. using up to 256 railroads to get home).

If that search for a route fails (no route found), then it gets complicated. The second (and 3rd and 4th) connections are used, for each railroad in turn. Which explains why in reality there are "gateways" and only a few of them."

6. Optional – remove railroads that did not exist in your railroad’s time frame.

If the program cannot find a routing during the daily update, it will ask you for a staging track to assign the railroad to.

Regions in Staging.

In the early years, most railroads used the ‘bump along’ system whereby they waited until there were enough cars to make up a relatively short train which then left for the next yard where the cars were again reclassified. Today, this is not the case as most railroads try to put cars together in a fashion which will allow them to remain untouched until they reach their destination, or at least until they are delivered to another railroad (interchanged).

The use of regions in staging yards is very dependant upon the design of the layout and how the layout owners plan their operations. In general, though, it is recommended that each staging track have a different region. You need to ask yourself this question: “In the overall scheme of rail transportation, once you have moved cars to the XYZ staging yard, where do you envision those car will ‘ultimately’ go?” In order to help you answer this question, here’s a couple of examples which may give you some guidance.

Example 1: The ‘Round and Round’ railroad has two staging yards. The east staging yard represents Toronto and has three tracks. These are setup as follows:

Track Number	Region	Traffic for:
01s	10	CNR, NYC, ONR, B&M
02s	10	CNR, NYC, ONR, B&M
03s	11	CPR, TH&B , RUT MEC.

In this case, two tracks were assigned to region 10 since the majority of the eastbound traffic will go there.

Example 2: The ‘Iron Goat’ Railroad has only one staging yard which is accessible by trains going in either direction through a wye. The yard represents both the east and west ends of the ‘Iron Goat’ railroad. Here are the track assignments:

Track Number	Region	Traffic for:
01s	10	Spokane

02s	10	Spokane
03s	11	Seattle
04s	12	Minneapolis
05s	13	Vancouver WA.

Again, the use of two tracks for Spokane is volume related.

Example 3: This is the way that the staging yards for our sample railroad is set up. East staging has three tracks while west staging has only one. The track assignments are as follows:

<u>Track Number</u>	<u>Region</u>	<u>Traffic for:</u>
01s	1	New York, NY
02s	2	Chicago, IL
03s	3	St. Louis, MO
04s	4	Seattle, WA

In this case, each track has been assigned a different number. Also note that in this case, the track number and region number are the same. This does not have to be the case and in fact you may choose to use any number.

For proper overhead (i.e. staging yard to staging yard) traffic flow you need at least two regions. If you only have two regions they would typically be one on the east end and one on the west end. These staging areas can have any number of tracks and each track can have a different connecting railroad. However, all tracks in the same region are treated as if they were one location. It would be like having all these trains terminate in a yard and then be switched for interchange to each of the connecting roads. Thus all trains heading west will carry any car heading west.

To simulate a run through to a connecting road, place that road in a different region, then only its cars (and its connections) will be routed that way when returning home empty. This is a way to give character to certain trains.

If you have only one staging area (or even one physical staging track) you still need two staging regions, these just become "logical" regions. In this case the train would leave the track from region 1 for example, and return to the same track, but this time the track is view by ProTrak as being in region 2.