Chapter 13 - Basic Passenger Train Operations

So far, we’ve concentrated on the freight side of operations. In this chapter we’ll look at passenger train operations and set up a simple train.

A passenger train is in most respects, just another train. There are a few areas where a passenger train differs from a freight train:

- A passenger train may have a fixed consist (i.e. cars are ‘permanently’ assigned to a train) or a variable consist (i.e. cars are picked up and/or dropped off as the train travels).
- The passenger train does not operate through a town’s yard (ex: ACT-Yd), but rather through the passenger station (remember when we set up the passenger station in Chapter 6?). The “-01” station (1) is for passenger trains exactly as the “-Yd” is for freight. The “01” is not a single track but represents an infinite number of tracks. Note that for smaller stations there may not be a separate station track. The “01” SPOT will simply be the location on the main line where the train will stop for the 5 or so minutes it takes to unload and load passengers before departing for the next station.
- Like a freight, a passenger train needs a schedule (remember the schedules we discussed in chapter 12). Since they are operating on the same track as freights, they must fit into the overall schedule of the railroad.
- Passenger cars only need a waybill if the car is to be picked up and/or dropped off. If a passenger car is permanently assigned to a train it does not need a waybill.
- Car orders are only used when cars are picked up and dropped off and are only needed if you wish to introduce variability to a train’s consist. For instance you may wish to have a diner on the train Monday through Friday only.
- Passenger cars must have their own default location (remember setting the default yard in Chapter 7?).

IMPORTANT: Freight and passenger cars must not use the same SPOTs or inadvertent mixing of cars (2) will occur – freight cars will be assigned to passenger trains and vice-versa (use Help/Check Passenger Traffic to identify any such cases).

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1 While we have used the term “station” here, a “01” is more than just a station. It is a place where passenger trains can report and/or where passenger trains can exchange cars.
2 The subject of mixed trains is an advanced topic and will be covered in a later portion of the manual.
We’re going to set up a simple passenger train which will originate in Castle Rock, proceed to Berwick then Actonvale picking up passengers along the way. From Actonvale it will proceed to the STL03s staging track where it will lay over for several hours, turn and return to Castle Rock stopping at Actonvale and Berwick on the way. This allows folks in the smaller communities of Castle Rock Berwick and Actonvale to spend the day in the “Big City”.

**Additional Passenger Stations**

If you remember in Chapter 6 we set up a passenger station at Actonvale. We need to make a couple of adjustments. Both the track length and siding radius are too small and will cause us problems.

1. On the ProTrak Standard toolbar, click on “Traffic” then select “Customers from the dropdown list. A window like Figure 13-1 will appear.

2. Double-click on the first entry – “Actonvale Station” and a window like Figure 13-2 will appear.
3. Look at the data field “Track length”. If we have four or five 85 foot passenger cars, it is obvious that a track length of 100 feet is insufficient. Click on the “Track length” data field and change it to 1000 (3).

4. Similarly, look at the information displayed beside the “Siding Radius” data field. It shows the maximum car length that can be handled is 62 feet. We need to change that. Click on the “Siding Radius” data field and change the radius value to 33.

5. Click “on” OK” to save the changes and close the “Changing Customer...” window.

Now that we’ve adjusted the track length and siding radius values, we can use the Actonvale Station to add similar passenger stations at both Berwick and Castle Rock.

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3 While we have only defined one track, ProTrak assumes you know what you are doing and if so directed will send more than one train to a station. The assumption is that there are multiple tracks at the station.
1. **Single click** on the first entry in the “Customers and Loading Points” window – the one marked Actonvale Station. Since this is a passenger station, we can copy this and make changes as appropriate.

2. On the ProTrak Standard toolbar, click on “Edit” then select “Copy an online customer” from the dropdown list. At this point a window like the one in Figure 13-3 will appear. Except for the customer number, this obviously is identical to the window shown in Figure 13-2.

![Changing customer: 16 of: 16](image)

**Figure 13-3**

3. We’ll make the following changes:
   a) Change the “Industry Name” data field to read “Berwick Station”
   b) Change the “City, State/Prov.” Data field to read “Berwick” (Click in the data field then double click on “Berwick in the right hand panel).
   c) If you wish you can change the “Population served” and “Estimated ridership” data fields.
Make sure to leave the Track length and Siding radius data fields unchanged (1000 and 33 respectively).
4. Once all the changes have been made, click on “OK”. You may get the messages about correcting SPOTs and waybills. Click on “Yes” to allow ProTrak to check and correct any waybills and SPOTs in error.

5. Repeat steps 1 through 4 for Castle Rock.

6. You should now see a window which looks like Figure 13-4 although the entry “5 PAX” will differ if you changed the “Estimated ridership” data field.

<table>
<thead>
<tr>
<th>Customers and Loading Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
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<td>5</td>
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<td>12</td>
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<tr>
<td>13</td>
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<tr>
<td>14</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>16</td>
</tr>
<tr>
<td>17</td>
</tr>
</tbody>
</table>

**Figure 13-4**

**Setting the Default Location for Passenger Cars**

As was alluded to earlier, passenger cars require a default location which is different than that used by freight cars. The first thing we need to do is to define a new ‘industry’ then define that location as the default location for our passenger cars.

1. We’ll create a customer at Castle Rock called “Coach Yard”. From the ProTrak Standard toolbar, click on “Edit” then select “New online customer” from the dropdown list. A window like figure 13-5 will appear.
2. The first thing we need to do is set up the “Siding name/commodity” field. Single-click on the “Siding name/commodity” data field, then click on the “Special” radio button at the bottom of the right-hand panel. A window like the one in Figure 13-6 will appear.
As you can see, the right hand panel contains a list of special siding names (or partial names) that are recognized by ProTrak which treats them in a distinctive fashion depending on the name. We'll double click on the entry “coach...” (entry 25 in window 13-6) \(^4\).

\(^4\) The “coach...” entry means the “...” can be replaced by any word or phrase. ProTrak is looking for a siding name starting with the word “coach”. “Coach Yard”, “coach tracks” and “Coach Cleaning” would all be acceptable. The word “coach” may have the first letter capitalized or not – ProTrak automatically converts any upper case “C” to a lower case “c” then makes the comparison.
The balance of the data fields are as we have done in the past:

a. Industry Name: Castle Rock Coach Yard
b. City, State/Prov. Castle Rock
c. Siding SPOT CAS-40
d. Track length 1000
e. Siding radius 33
f. Switching Railroad ProTrak Demonstrator
g. Switching Train leave as “no service”
h. Cars blocked at 1

All of the remaining fields can be left unchanged. Figure 13-7 shows what the “Changing Customer....” window should look like.

![Changing Customer Window](image)

**Figure 13-7**

4. Before we finalize this new customer, let’s go back and look at the “Siding name/commodity” data field. As was noted in the footnote when we first look at the ‘special’ names, the “...” in the ‘special’ siding name can be replaced by any word or phrase. Let’s make the siding name more meaningful. Click in the “Siding name/commodity” data field; erase the “...” and type in the word “yard”. Make sure there is a space between the words “coach” and “yard”. The siding name should now read “coach yard”
and because ProTrak sees the word “coach” at the start of the name ProTrak knows that this is a passenger related track.

5. Click on “OK” to accept the new ‘customer’.

6. Click on “Close” to close the “Customers and Loading Points” window.

7. Now that we have the coach yard set up as location CAS-40, we can set up the default passenger car location. On the ProTrak Standard toolbar, click on “Administration” then select “SPOT Format and special SPOTs” from the dropdown list. A window like Figure13-8 will appear.

8. Click on the dropdown arrow beside the “A passenger car’s first location” data field. You should see all of the “01” locations (ACT-01, etc) and also “CAS-40” which is what we will select. The reason we are able to see CAS-40 is because we selected “coach...” back in step 3 – now you know why we set the “Siding name...” data field to “coach...”
9. Before we can save this change, we need to click on “Unlock”, click on “Yes” on the “Settings in use” window, and then click on “Apply” on the “SPOT or ZTS...” window.

The new default location for passenger cars has now been established.

**Adding Passenger Cars**

We’ve now got all the passenger stations set up, now we need to add some passenger cars. For our purposes, we’ll assume that since this is a short local passenger train there no need for anything other than coaches on the train. Let’s add the three coaches.

1. On the ProTrak Standard toolbar, click on “Traffic” then select “Passenger cars” (5) from the dropdown list. A window like the one shown in Figure 13-9 will appear. This window should be familiar to you as it is the same one as was used to enter all of the freight cars in Chapters 7 and 12.

![Figure 13-9](image)

2. Click on the “Single New Car” button at the bottom of the window to open up a window similar to the one shown in Figure 13-10. Note that you may get a message about correcting SPOTs; if so click on “Yes”

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5 Even though there is an entry in the dropdown list which reads “Freight and passenger cars”, we will not use it. We will use the “Passenger cars” entry as it will display only the passenger cars on the railroad. Note that any car entered while in the “Passenger cars” window will subsequently appear when the “Freight and passenger cars” entry is selected.
3. Since the passenger cars are our own, the “Reporting marks” are correct – “PRO” but we’ll change the “Number” data field to “10013” (6).

4. The “Car Kind” data field also needs to be changed to “PA” (double click on “P” in the right hand window then click on the “Show Specific Kind” radio button to get the full listing of passenger cars). Double click on the “PA” entry and you will note that while the “Car Kind” data field has changed to “PA”, the “Car Class” data field has remained at “P”. This is OK.

5. At this point you should also have noticed a new data field appear under the “Number” data field. This data field allows us to give the car a name – something that we see all the time on the prototype railroads. We’ll call

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6 If you remember when we first entered cars in Chapter 7, if we chose to enter a new car (as opposed to copying and editing), the car number defaulted to the next entry number (or line number). This happened when we entered a car numbered PRO 9, remember? You may wonder why the default car number here is 56 rather than 1; the answer is that all cars, both passenger and freight, are stored in the same file. Since we’ve entered 55 freight cars, the passenger car we are about to enter has a default number of 56.
car 10013 “Lake Woebegone” (ignore the additional window which has popped up in the right hand panel) (7).

6. A length of “50” feet seems a bit short so let’s change that to “85”.

7. Even empty, passenger cars are relatively heavy. Change the “Light weight” data field to read 140,000. We’ll assume all our passenger cars are of the “lightweight” variety (8).

8. If it doesn’t already show it, change the “Location of car” data field to read CAS-40.

9. We can leave the remaining data fields as is. Here’s what your “Changing active car...” window should look like (Figure 13-11).

10. Click on “OK” to accept the car.

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7 While it is not normal for coaches to be named, it is not unheard of. We’re doing it here to demonstrate the car name feature.

8 Lightweight passenger cars are usually in the range of 130,000 to 140,000 lbs with heavyweight cars weighing up to 60,000 lbs more.
Repeat steps 2 through 10 for the other two cars:

<table>
<thead>
<tr>
<th>Car Number</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>10109</td>
<td>Lake Lostmyway</td>
</tr>
<tr>
<td>10092</td>
<td>Lake Wherearewe</td>
</tr>
</tbody>
</table>

Both cars are type “PA”, have a lightweight of 140,000 and are located at CAS-40.

11. Once all the changes have been made the window should look like the one in Figure 13-12 (9).

![Figure 13-12](9)

12. Click on “Close” to close the “Rolling stock (cars)” window.

### Adding a Passenger Train

We’ve worked with adding a train in the past (Chapter 5) and we need to add one more train to be our passenger train. It would seem that we need two trains – one to go from Castle Rock to West Staging and one to return to Castle Rock from West Staging later in the day. If we define two separate trains (as we did with the through trains like CHSL and SLCH), the second train will not run on the same day as the first train. If we look at train CHSL, it runs from CHI02s to STL03s where it remains until the end-of-day process is run. The next day, SLCH runs from STL03s to CHI02s. Since our passengers don’t want to stay overnight in “The Big City”, we’ll use the following technique to set up a same day, outbound and inbound, passenger train.

1. On the ProTrak Standard Toolbar click on “Scheduling” then select “Establish Train jobs and yarding” from the dropdown list. A window like Figure 13-13 will appear.

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9 The entries in the “Next” and “Dest’n” columns may show either CAS-40 or ACT-Yd.
2. On the ProTrak Standard Toolbar click on “Edit” then select “New Train” from the dropdown list. A figure similar to Figure 13-14 will appear.

3. Passenger train definition requires a slightly different approach than we’ve used in the past. The first item we must deal with is the data field labeled “Traffic” (see Figure 13-15).
4. Click on the dropdown arrow beside the “Traffic” data field and select “Passenger Service”. Other than changing the text displayed in the green box to the right of the “Traffic” data field, you will not see any other immediate changes. You will, however, see the importance of the “passenger Service” selection later on.

5. In the “Identifier” area, let’s make the following changes:
   - Symbol/Number: 100/101
   - Class: 1
   - Marketing Name: Intercity Express
   - Operating Railroad: Leave as “PRO, ProTrak Demonstrator”

6. You’ve noticed that the value we entered in the “Symbol/number” data field has a “/” in the middle of it - “100/101”. If we were to enter the train number as 100, then create a second train numbered 101, ProTrak will assume that you have two separate consists. Earlier, we set up our through trains operating from staging to staging as two separate trains with unique IDs (CHSL and SLCH for example). If we did things in a similar fashion with our passenger train, train 100 would run today, lay over until tomorrow when it would run as train 101. This is not what we want to happen. What we want is a train that runs from A to B early in the day, then back from B to A later in the same day using a common consist. The “xxx/yyyy” format is used where a train will travel one direction as the first train number (100 in our case), turn and return as the second number.
(101 in our case) **both on the same day.** It is a common occurrence in the prototype world to see trains listed in the “xxx/yyy” fashion.\(^{10}\)

7. In the “Work and Blocking” box, click on the “Origin Station” data field and double-click on “Castle Rock” from the list in the center panel. If just the staging tracks are shown click on the “Stations” radio button at the bottom of the center panel to display the station names.

8. Click on the “Terminal Station” data field and double-click on “STL03s” from the list in the right hand panel. Again you may need to change the radio button at the bottom of the center panel – this time to “Staging”.

9. For now we’ll leave the “Departure” data fields unchanged.

10. Click on the “Yard Blocking 1)” data field. Here is where the change we made in step 4 above becomes evident. Look at the center panel of the “Changing trains...” window. Rather than seeing “ACT-Yd” and the two reporting points as we would have expected if we were working with a freight train, we see the three passenger “stations” - “ACT-01”, “BER-01” and “CAS-01”. Since train 100 leaves from Castle Rock, double-click on “CAS-01” in the center panel.

11. Click on the “Yard Blocking 2)” data field and double-click on “STL03s” in the center panel. Note: Leave the two data fields that appeared at the bottom of the left hand panel (the ones in the “What happens in staging” box) unchanged. The “In staging” data field should read “entire train is reversed intact (loop)” and the “Equipment exits staging as train” data field should be blank.

12. Click on “Yard Blocking 3)” data field and double-click on “CAS-01”. At this point you should see a radio button to the left of the “Yard blocking 2)” data field and the message “Train turns at STL03s” should be visible at the bottom of the left hand panel.

13. Figure 13-16 shows what your “Changing Train...” window should look like.

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\(^{10}\) The ‘turn’ may occur in staging, as we have done here, or it could occur at a passenger station.
We’ve now got the passenger train set up. The train will leave Castle Rock, pass through “Berwick” then “Actonvale”, stopping to pick up passengers (once we complete the scheduling later in the chapter) and finally ending up in West Staging. As previously noted, because we entered the train number as 100/101 the train will enter staging as train 100, reverse intact and exit staging as train 101 later in the day.

14. Click on “OK” to accept Train 100/101 and close the “Changing train...” window.

15. Figure 13-17 shows what your “Listing of train jobs” window should now look like (you may have to re-open the “Listing of train jobs” window). Scroll the “Listing of train jobs” window to the extreme right hand side and you will note that the column headed “Traf” shows a “P” for train 100 signifying that this is a passenger train.

16. Click on “Close” to close the “Listing of train jobs” window.
17. If you remember earlier in the chapter when we set up the customer “Castle Rock Coach Yard” we left the “Switching train” data field set to “no service” (see point 4 in the “Setting the Default Location for Passenger Cars” section earlier in this chapter). Now that we have a passenger train we need to go back and add train 100/101 as the “Switching train” for customer CAS-40.

18. On the ProTrak Standard toolbar, click on “Traffic” then select “Customers” from the dropdown list. Once the “Customers and Loading Points” window opens, double click on the entry for “Castle Rock Coach Yard” (customer 18). Once the “Changing Customer…” window is displayed, click on the dropdown arrow beside the “Switching train” data field and select “100/101” from the list.

19. Click on “OK” to accept the “Changing Customer…” window then click on “Close” to close the “Customers and Loading Points” window.

20. One last thing to do is to create a new train lineup by clicking on “Scheduling” then selecting “Line-up of Trains” from the dropdown list. You may see a window appear briefly and then return you to the “Line-up of Trains…” window. If you did not see the window appear and then close, you will see a message saying “No changes have been found in the existing Line-up. Do you want to form a new Line-up?”. Click on “Yes” to see the lineup. Once you’ve looked at the lineup you can close the “Line-up of Trains…” window.

Scheduling the Passenger Train

We’ve now got our passenger stations, passenger cars and passenger trains defined. Now we need to schedule our train. Remember the process we used in chapter 12 to schedule our trains? We’ll use the same process to schedule train 100/101.

1. On the ProTrak Standard Toolbar click on “Scheduling” then select “Create string diagram” from the dropdown list.

2. The “Which subdivision?” window is now displayed. Double click on the first line - the only entry displayed in the window.

3. The “Creating string diagram…” window is now displayed. Click on the dropdown arrow beside the “Working on train” data field and select “100/101” from the list displayed. Figure 13-18 shows what that window looks like.
4. As you can see, Train 100/101 has been scheduled but we may have an issue with track occupancy at Castle Rock with train 202 but for now, let’s save the train as ProTrak has set it up. Click on the “Save current train” button.

5. It is somewhat easier to use the “Timetable” mode to make some of these changes so let’s switch to that mode. Click on the “Schedule by Timetable” button at the bottom of the window.

6. The “Train Schedules” window is now displayed. Click on the dropdown arrow beside the “Select Train to Schedule” data field. Select “100/101” from the list displayed. Figure 13-19 shows what the “Train Schedules” window now looks like.
7. Before we go ahead and make any changes, let’s discuss stops to pick up passengers. Train 100 starts out at Castle Rock so it is safe to assume that all passengers will be on board prior to departure at 7:00 am. As we did with freight trains earlier, let’s assume it takes 1 minute to get from Castle Rock to Berwick. At Berwick we need to give time for any Castle Rock passengers to disembark and for any Berwick passengers to board. A reasonable time would be 2 minutes. Again, as with freight trains we can assume it takes 1 minute to go from Berwick to Actonvale. At Actonvale, for reasons that we’ll go into later, we need to wait 5 minutes. From Actonvale to West Staging takes 4 minutes (remember the train has to go around the loop). That’s it for train 100.

8. Let’s continue with train 101. From West Staging to Actonvale takes 1 minute. Again we need to wait 5 minutes at Actonvale then proceed to Berwick (1 minute), a 2 minute station stop then on to Castle Rock (1 minute).