Basic track-laying, part one

By Colin McKinney

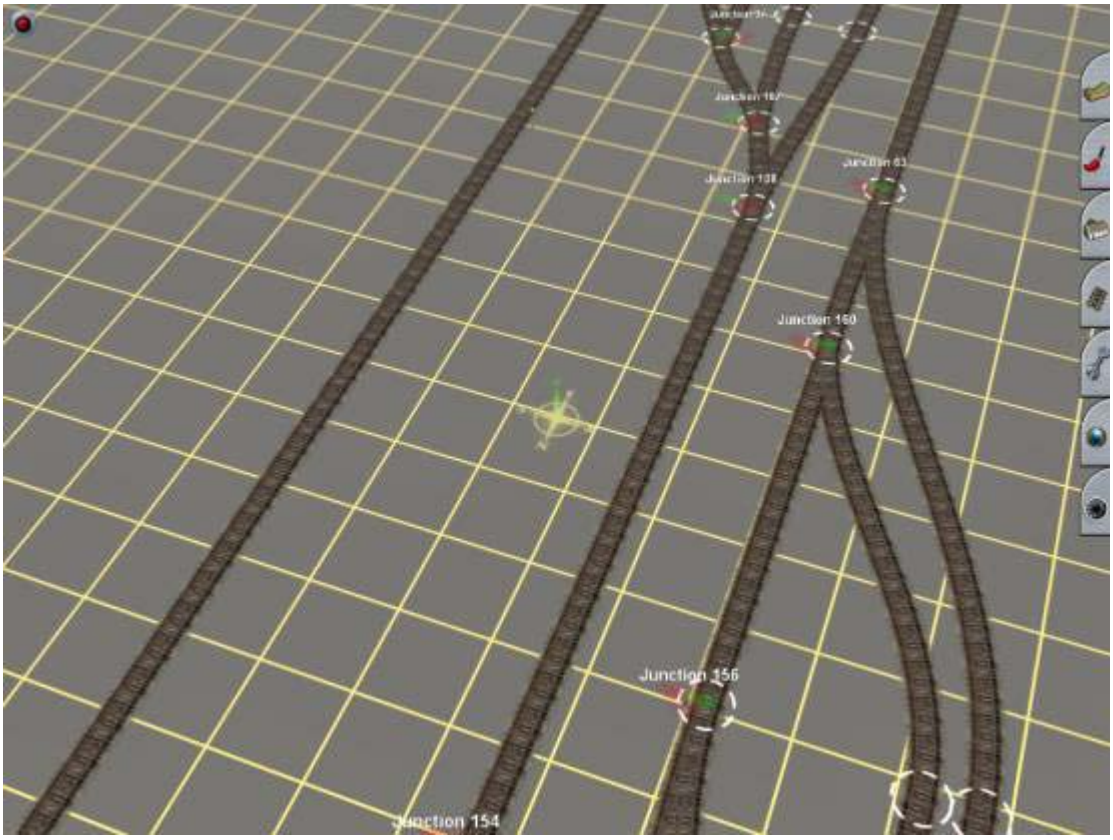

Figure 1: Laying track –- a basic operation.

If you are interested in creating your own layouts, there could be nothing more basic in *Trainz* than laying a track for a new route. Yet for even this apparently simple task, a surprising number of skills and techniques are required for you to achieve exactly what you want.

Laying a section of straight track

Launch *Trainz* and select *Surveyor*, then *Create New*. To keep things as simple as possible for this tutorial, ignore the options in the first dialog box you see and click the green arrow (or press the Enter key –- generally, they do the same thing). Your screen should now be empty except for a flat surface (the baseboard) covered in a grid of yellow squares. In the centre there will be a compass, and down the right-hand side a row of tabs with different symbols.

How to move the compass and the basic functions of each of the tabs is explained in the onscreen *Help* section (move the mouse pointer to the top left of the screen and click the main *Surveyor Menu*, which appears. Help is the bottom option). If you haven't

already, you should certainly read Section 3.0, *View Movements and the 3D Compass*, about a third of the way down, and practise moving the compass and changing the view, two fundamental *Trainz* operations. The *Help* section contains much other basic information and you should refer to it often in the early stages of learning how *Trainz* operates.

For the purposes of this tutorial, only the *Tracks* tab is used. Click the fourth tab on the right side of the screen. A panel containing all the tools to do with selecting and laying tracks and associated objects slides out. Clicking the tab again closes the panel, but leave it out for now.

A huge number of different tracks is listed in the top area, and any one of these can be chosen and used by clicking its name. In this tutorial I am using the top, 'default' track, called '1 track as 49'.

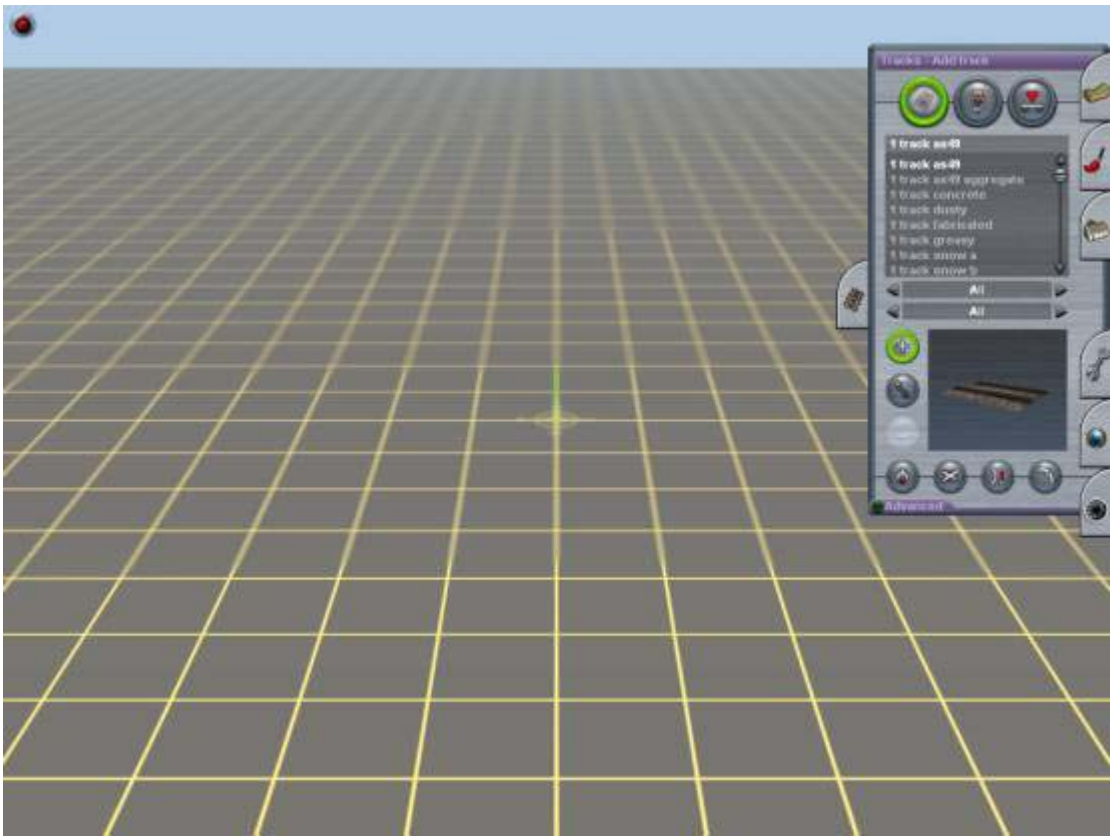

Figure 2: The track panel open and ready for use.

Note that the top left circular button is highlighted (to show that tracks are about to be added, not other things that this panel also includes); also the plus sign (to show that we are set to add track, not to perform any of the other associated operations available on this panel).

To lay the track, click (always left button unless stated otherwise) the mouse pointer once anywhere in the grid where you want the section of track to begin. Move the mouse, and you will see the other end of the track move with it. Click the mouse button a second time where you want the section of track to end. You can lay the track anywhere and anyhow you like, but I like to use the grid to ensure straight lines in a North-South or East-West alignment, at least in the early stages of a project.

If you have a very long section of straight track to lay, you can click the left mouse button to begin, then use the right mouse button to move the compass and rapidly extend the track at the same time, before releasing the right mouse button and 'fine tuning' the final position with the mouse before ending the track section.

Another trick I've learned is that it's usually more accurate to align the *spline circles* (the white dotted rings that show the start and end points of the track) to the grid squares, rather than the actual track itself. This becomes more important later, for example, when adding sidings and other parallel tracks.

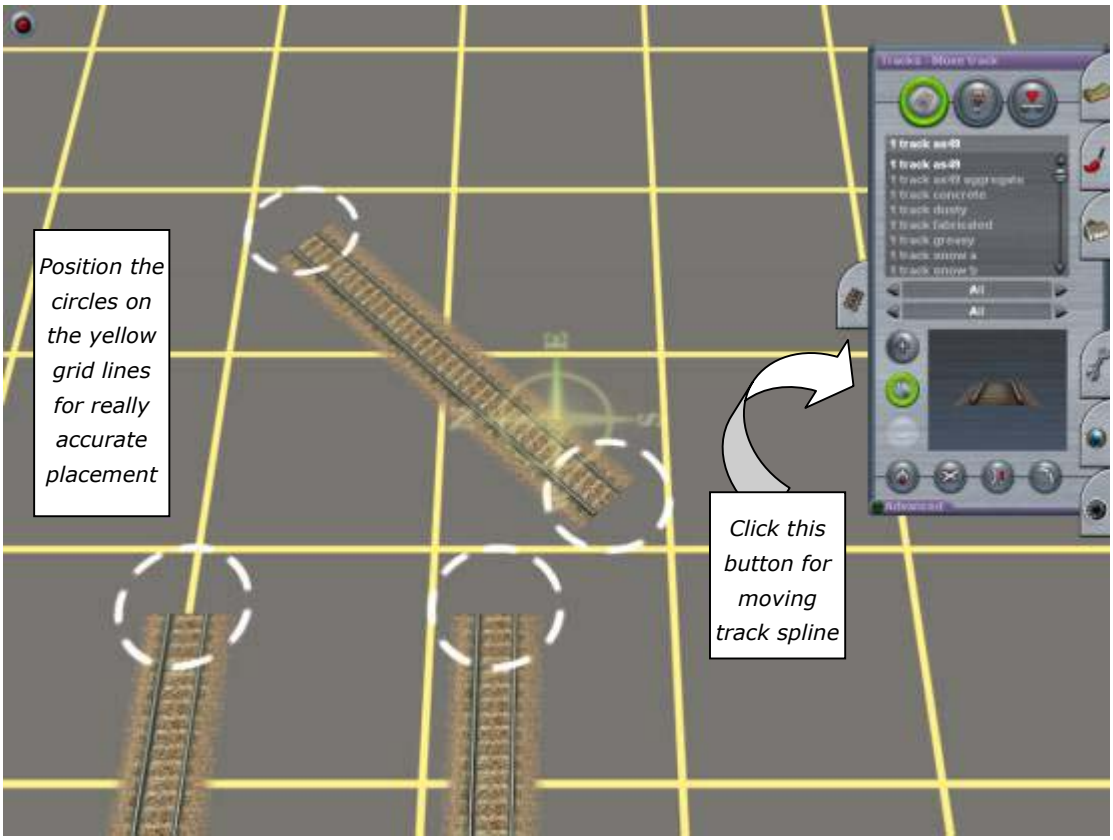

Figure 3: Using spline circles for accurate placement of track.

To *move* the track end (as opposed to *adding* track) click the 'Move' button (the round button on the *Tracks Panel* below the plus-sign 'Add track' button). Now when you click inside the circle at the end of the track and move the mouse you can alter the circle's –- and hence the track-end's –- position. Click once again to confirm the new position.

To change the length of the straight section of track, select the 'Move' button as described above, and shorten or lengthen it as desired. Note that to make a track longer, you could just as easily click the 'Add' button, and then add a further straight section. This is in fact exactly what you would do to make a curve (see later), but if the track is to remain straight, it's generally better to keep spline points to a minimum and just 'stretch' the existing track by moving an end point.

Adding a curve to a straight section

Make a straight section of track. After clicking the mouse button to define the end-point, click again inside the spline circle at the end of the section, and lay another length of track, continuing on from the first one. This time, however, instead of carrying on in a straight line, move the mouse to one side before clicking to confirm the end of the operation. See how the whole length of track now describes a graceful curve. (Just how graceful it is depends on how close together the spline points are, and how long the sections of track are between them).

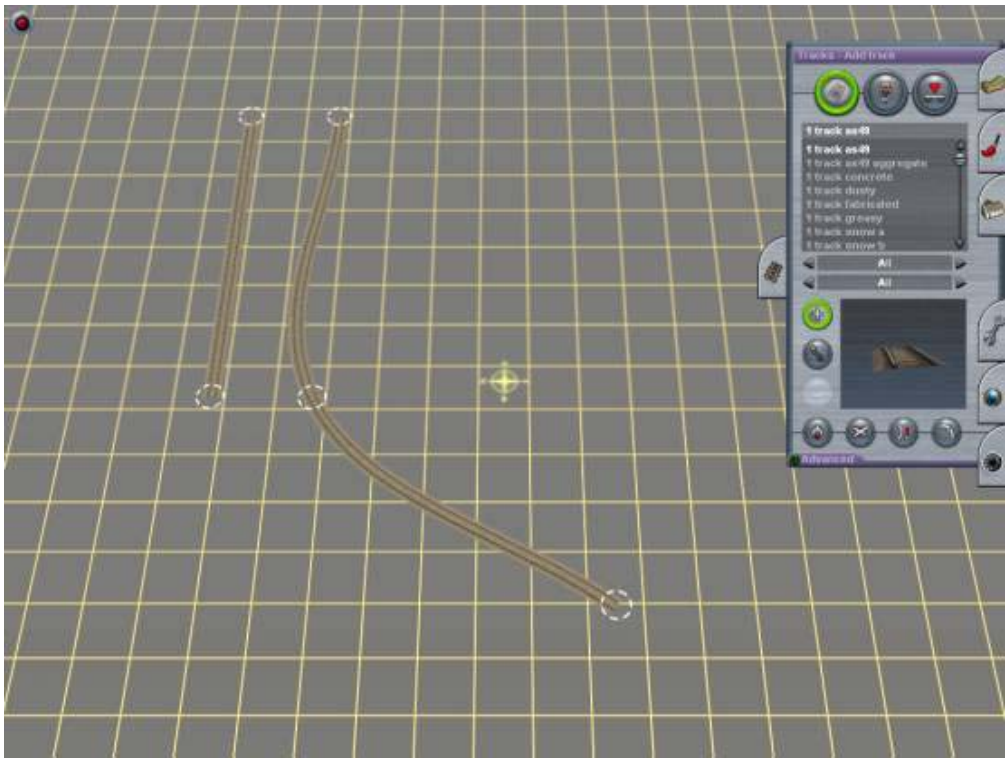

Figure 4: Left track: a straight section; right track: after adding the curve.

Making further adjustments to the curve

In addition to moving the spline point(s) as described above, you can easily insert one or more new spline points and move them as well, to further adjust the dimensions of the curve. Click the small purple 'Advanced' tab at the bottom of the open *Tracks* panel, and an extension to the panel slides downwards. Now click the third button from the left in the top row of this new panel. Use this to insert a new spline point, by first clicking this 'Insert spline point' button, then clicking anywhere on the track you have created. A new spline point appears on the track where you clicked. Now go back to the 'Move' button and select it; then click the 'Move' button and move any of the spline points on the track to change the curve's configuration. (See figure 5.)

Notice, incidentally, that if you allow the mouse arrow to hover for a second or so above any button, a small sign indicates its function. Also, whichever function is currently selected is written in the purple title bar at the top of the panel.

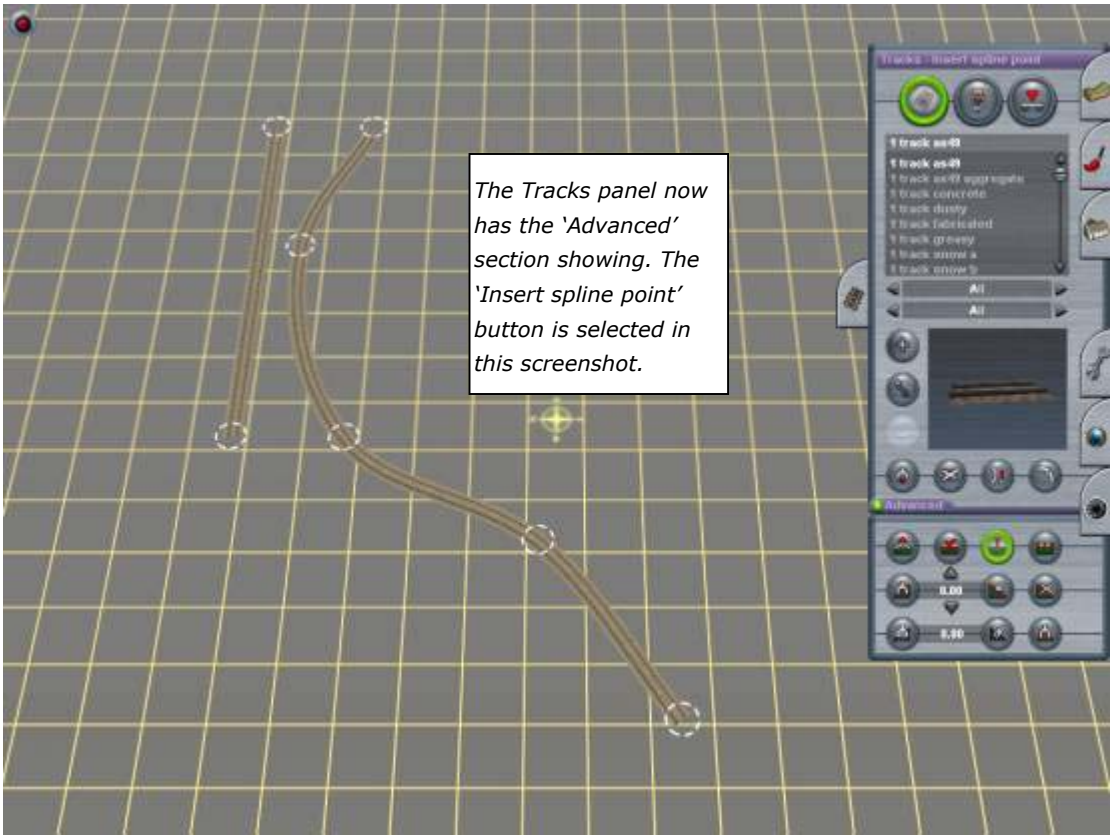

Figure 5: The curve, now further manipulated by adding and moving spline points.

Constraining a straight section

Go back to figure 4, where a curve was first created. Remember how adding the curve to the straight section created a curve OK, but it also bent the bit that was previously straight? What if you want to keep the straight bit as it was? Easy. Click the third button from the left across the bottom of the main panel (it doesn't matter whether the 'Advanced' panel extension is showing or not). Now click the first section of track, the bit that was straight before the curve was created. Snap! It flicks back to being straight, just as it was in the first place (see figure 6).

Tip: If you know that you're going to want to use the 'Straighten track' feature, you don't have to wait till the straight section has acquired its bend before applying it. Clicking on the straight section (after selecting 'Straighten track') *before* you add the curve, 'sets' it in its straight position, and adding an extra curve later won't affect this. Just a small point, and it doesn't really matter a lot, but I prefer to do it this way every time now.

Figure 6: Adding a curve to a 'constrained' straight section.

Creating an even curve between two points

This job could hardly be easier, because *Trainz* does all the work for you. Although, as you now know, you can insert spline points and then move them to make all kinds of fine adjustments, the best way to get an even curve between two points (e.g., the ends of two separate track sections) is simply to connect them by adding one track section from one point to the other (see figures 7 and 8). Of course, if you *need* to readjust the curve afterward, then do so –- that's what the 'Insert spline point', 'Move spline point' and 'Straighten track' controls are for.

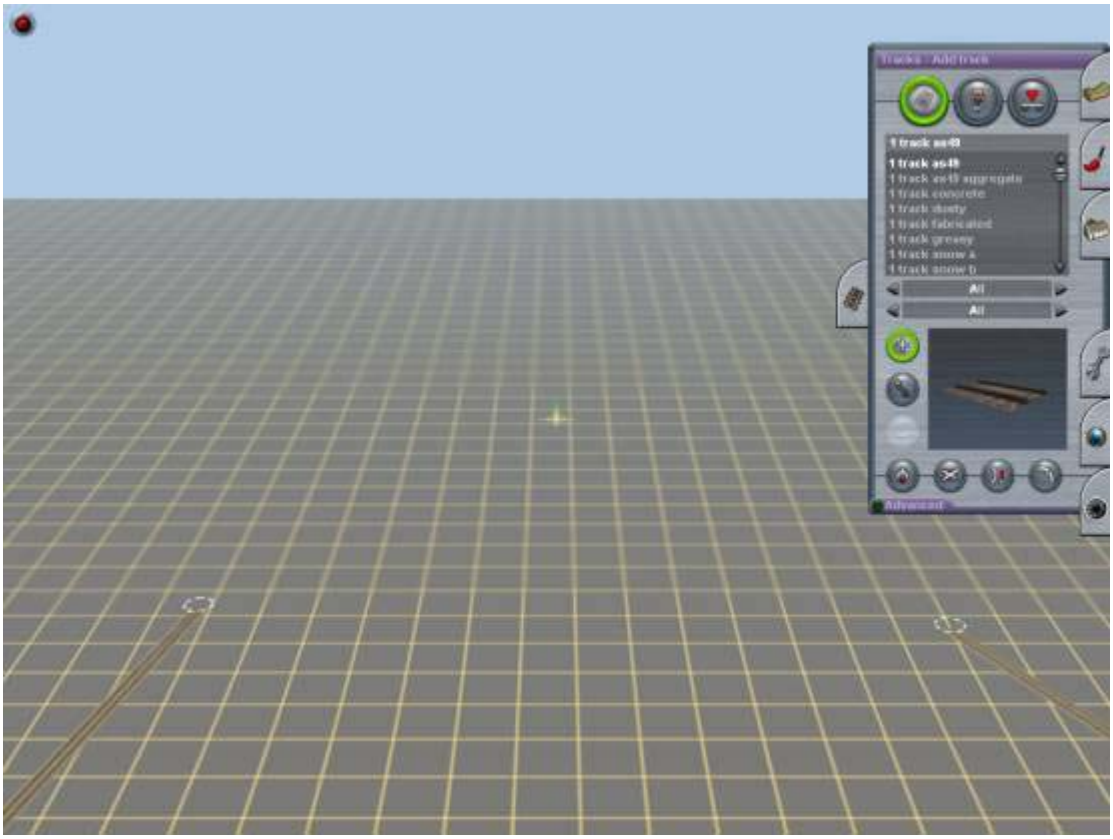

Figure 7: Waiting to join two points with an even curve.

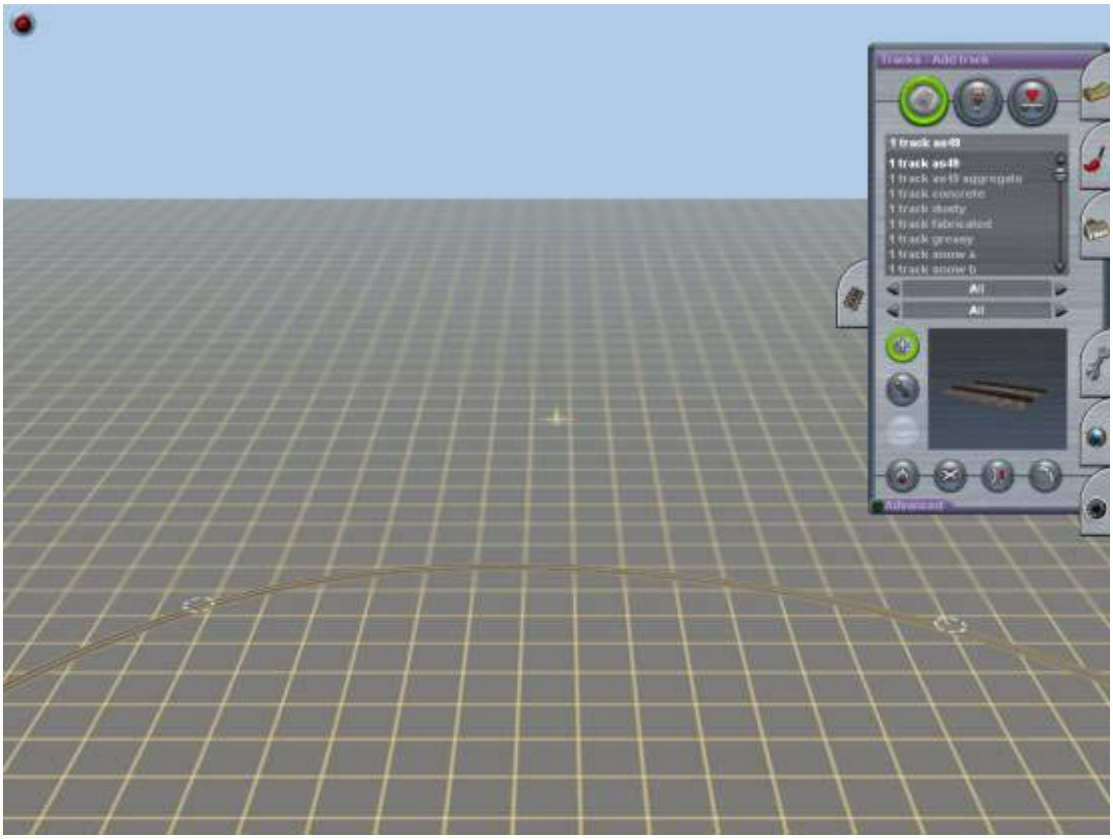

Figure 8: An even curve created automatically by joining the two points directly.

Adding a parallel siding

First, lay a long straight section of track. This can be the main line. Secondly, lay another straight section parallel to the first. This will become the siding. Use the edge of the spline circles as a guide to keeping the siding parallel with the main line. In reality, a siding would probably be more distant –- this is why it's often best to align tracks with the gridlines: it's much easier to keep tracks parallel when you want to. On the other hand, you often need several sections of parallel track close together, such as in a shunting yard. (The siding in figure 9 has been kept very short for illustrative purposes, i.e., so that it fits into one screen shot).

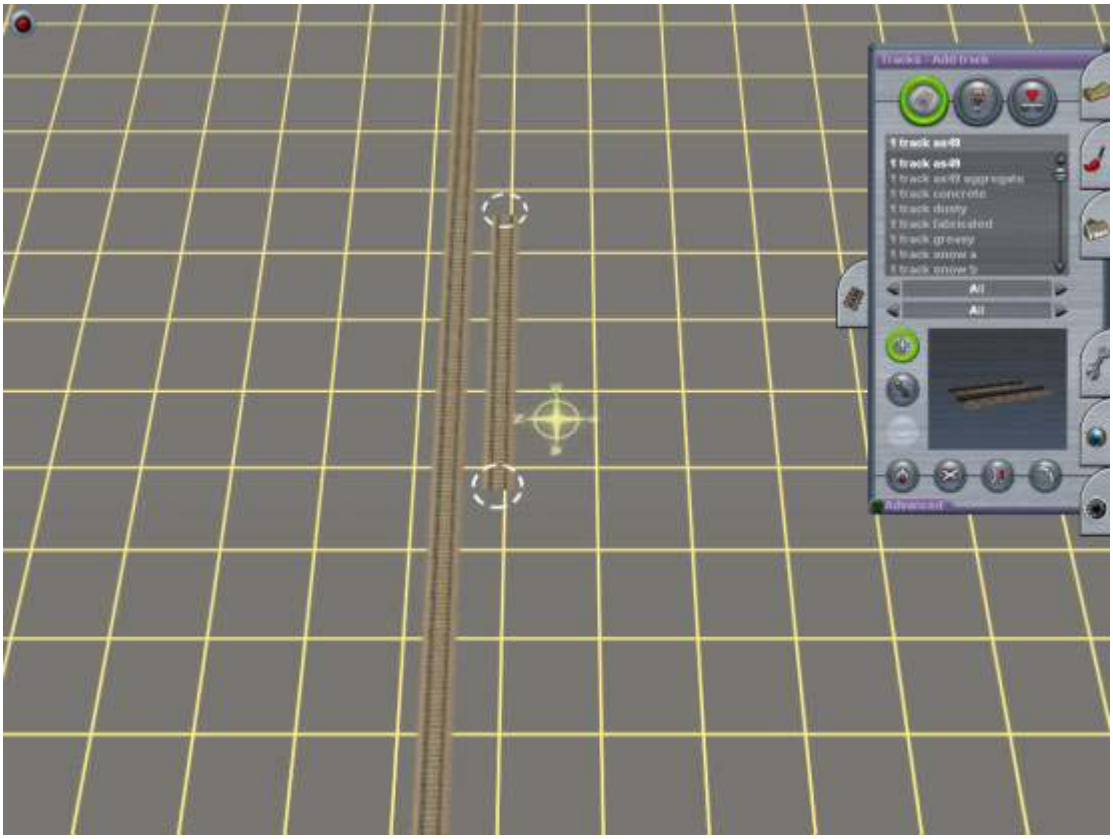

Figure 9: Adding a siding, stage one.

NOTE: If you have been following this step-by-step, you probably struck a problem when you tried to add the 'siding' line, especially if it happened to be very close to the 'main' line. Instead of a new section of track sitting independent of the first, you would have created a turnout (see the inset, figure 10) –- which is great if that's what you wanted, but sometimes you may want a close, parallel section of line *without* a turnout. The other possible problem is even worse: if you began your 'siding' line too close to the spline point of the main track, it would have joined itself to the end of the main line and created an impossibly sharp curve (figure 10). The solution to both of these problems is the same: *hold down the Shift key* on your computer's keyboard while adding the parallel section.

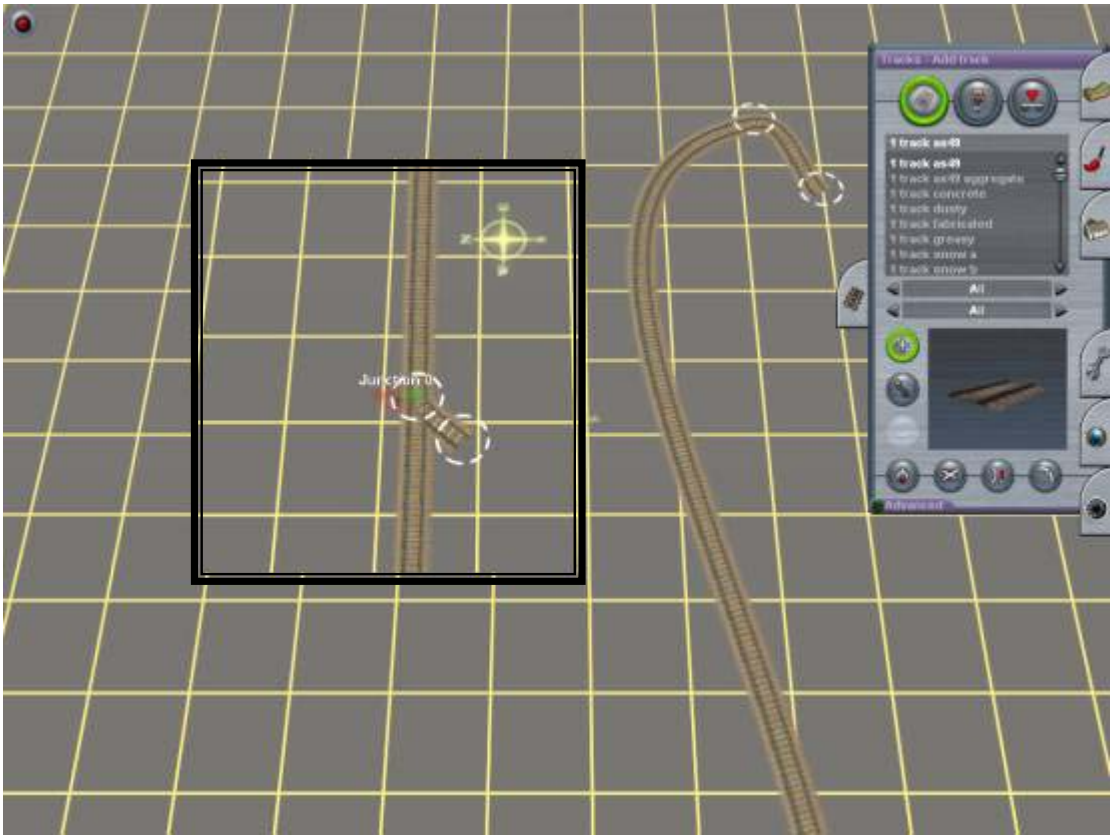

Figure 10: Two possible problems. *Inset:* an unwanted turnout. *Main part of screen shot:* an impossible curve. The solution –- hold down the Shift key while adding the second, parallel track.

Before adding turnouts to join the siding to the main line, constrain the former by clicking the 'Straighten track' button, then clicking the short parallel section. As mentioned earlier, this straightening operation can be done later if you prefer.

The final step is to link the ends of the siding to the main line. Click the 'Add track' button, then create a short length of track leading from each end of the siding to an appropriate place on the main line. Magic! A turnout complete with lever is added automatically as the new track melts into the main line. (If the lever does not appear, check that the Surveyor Options settings are correct for this to work. Move the mouse arrow to the top of the screen so that the menu bar, which is normally hidden, reveals itself. Click 'Surveyor Menu' on the left-hand side (see figure 11). Click the second-to-last choice, 'Surveyor Options'. In the dialog box that appears, make sure the last setting, 'auto place switches' is ON (green light), then tick the large green arrow (or press the Enter key on your keyboard) to confirm the choice and close the dialog box.)

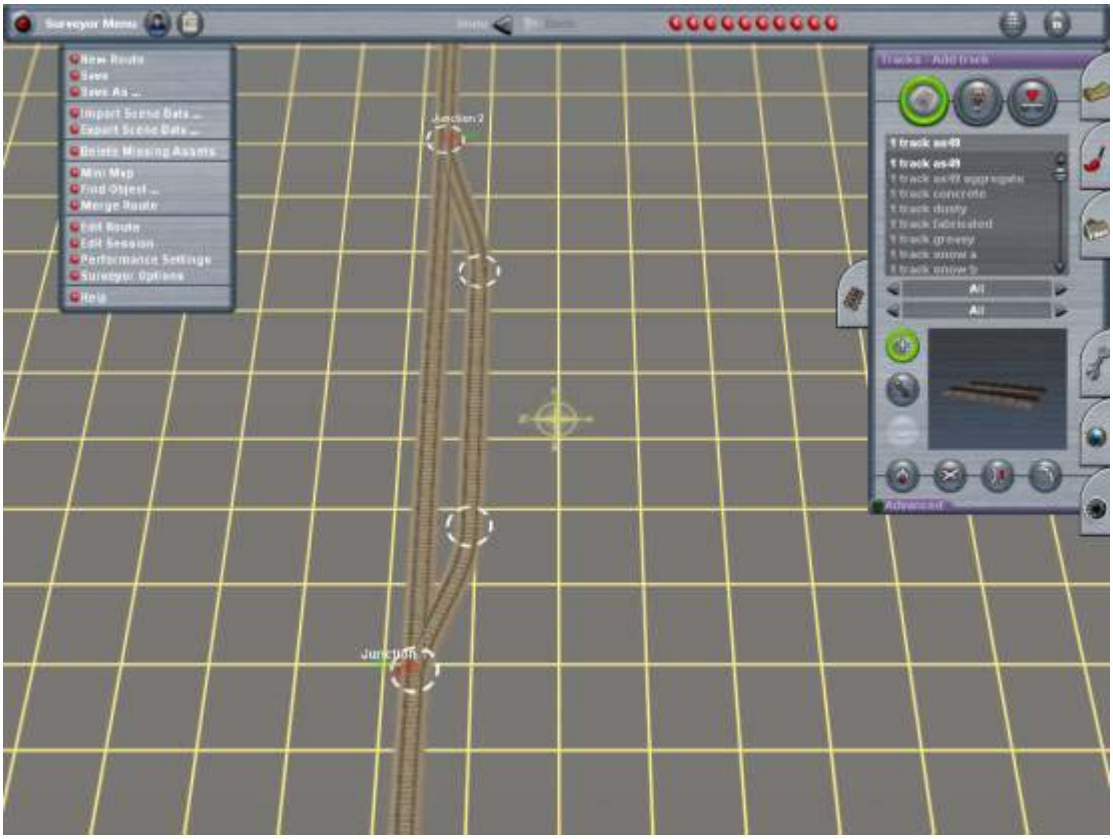

Figure 11: The completed siding, also showing the top menu bar and the drop-down 'Surveyor Menu' options.

Don't forget –- if things aren't quite right, you can always move the spline points to alter the track you have made.

One final tip: If, at any stage, you make an error, complete the action (usually this means clicking the left mouse button) then press Ctrl+Z. As with *Microsoft Word*, this action undoes the last operation –- in fact, you can undo many operations, one at a time, in sequence. The 'Undo' and 'Redo' buttons in the top menu bar perform exactly the same function as those in *Microsoft Word*.

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