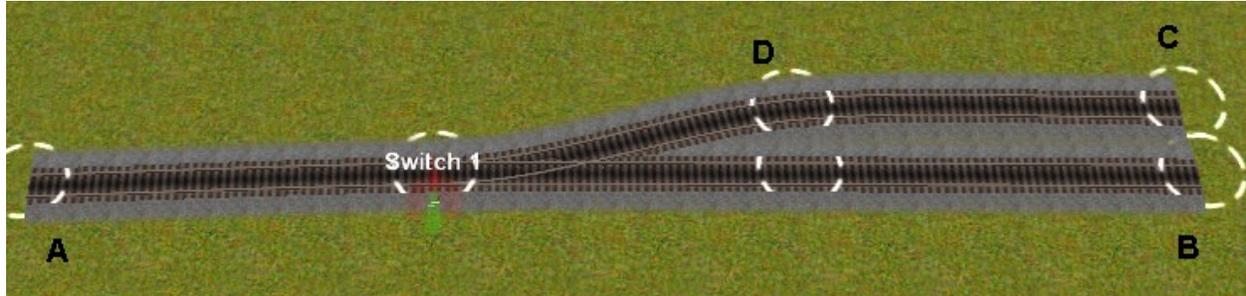# Part 3 - Controlling Train Speed Through a Switch

One of the dilemmas we surveyors face is handling train speed through turnouts. In the diagram below, we have a mainline track A-B, with an industry track A-D-C branching from it.

If the mainline speed is 50, we don't want to change it for through trains. At the same time, if we put a speed sign of 15 in the sidetrack, at D, the train will still have a speed limit of 50 through the switch and until it reaches the sign.

A great solution to the problem

What we need is a way to slow the train down before it hits the switch, without restricting through trains. Fortunately, we have a great tool available that will do just that. BPanther has created the 'Invisible Speed Signal v2' control .   It is available on the Download Station. Search for 'Invisible Speed-Signal v2 (TRS2004 SP2)' in the title or you can look it up by user name as well. Once downloaded, look for it as a trackside object from Germany.

[An updated version can also be found at the Bpanther's website: http://www.mbremer.de/trainz/   Scroll down until you find (KUID2 137715:23002:1). It shows 30 on the picture.   Thanks, Paul.]

The Invisible Speed Signal (ISS) allows you to set the speed limit on either or both branches through a switch.   As the name implies, the control itself is invisible in Driver mode; you can only see it in Surveyor.

The ISS is placed some distance from the switch itself. When the train hits the control, the ISS checks the switch direction and, if necessary, changes the speed limit. In the left picture below, the ISS is used to restrict the speed into the siding to 15. In the right hand picture, the switch is set for the mainline, so no speed restriction is needed (although we could have one if we wish.)
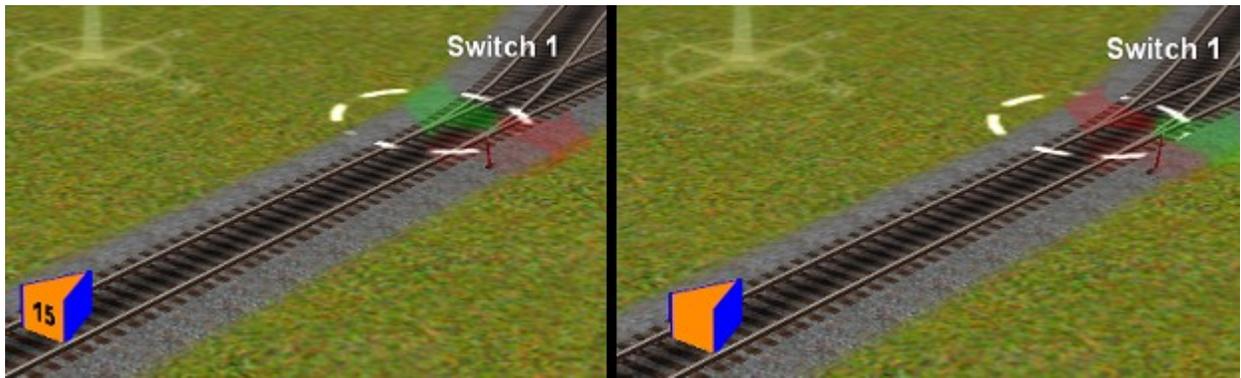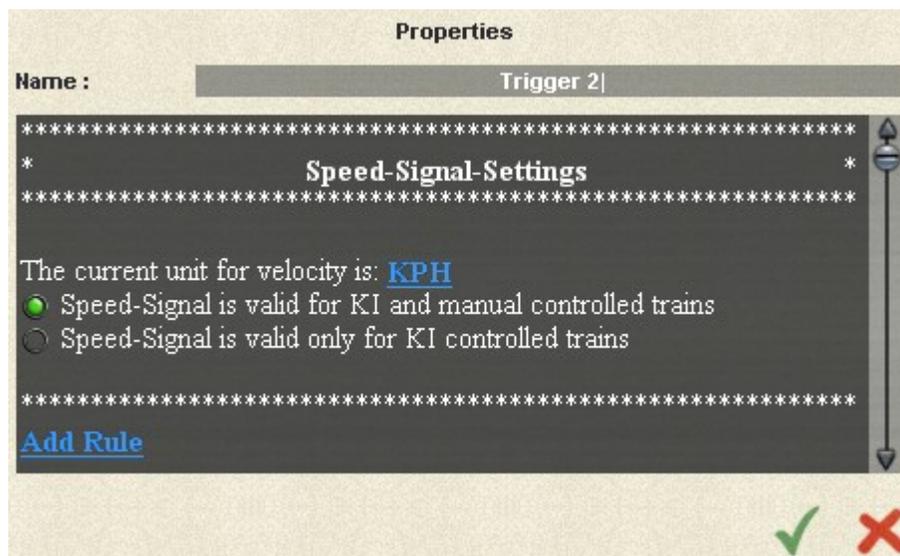
The ISS gives you a choice of changing the speed limit for all trains or just for AI trains. It also works with three-way switches as well.

Setting Up the ISS

When you place the control, you set its parameters by clicking on the question mark in the trackside mode.


Doing so brings up a dialog box:

The top line allows you to name the control, and it's important to do so. On my railroad, I have 30-40 of these controls and I like to give each a name that relates to its function.

In addition, you can set KPH/MPH depending on your locality, and choose whether you want the control to effect all trains or just AI trains.

Once you've set these parameters, click on "Add Rule".

Now it wants to know what junction (or switch) the ISS is to control. Clicking on 'junction' brings up a pull down window so you can select the correct switch.
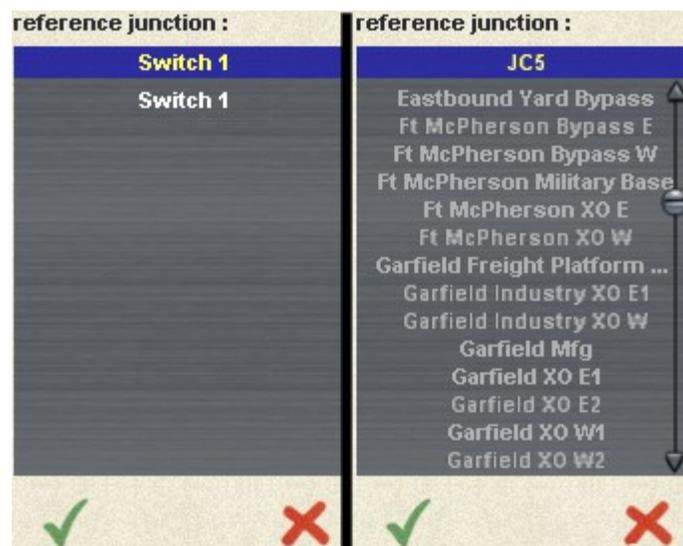

On the left above, "Switch 1" is the only selection, since it is the only switch on our example railroad. But just to give you a real world example, on the right is a portion of the pull down for my Midwest Central route. You can see how naming ISS controls allows you to find the right one quickly from the list.

Once you've chosen the correct switch, you select which direction you wish to control:

Make your selection and click the green arrow. In our example, we have a left switch, so we can just accept the default. If we had a three-way switch, we could choose forward as well as left and right.

Next, you enter the desired speed for our left direction:
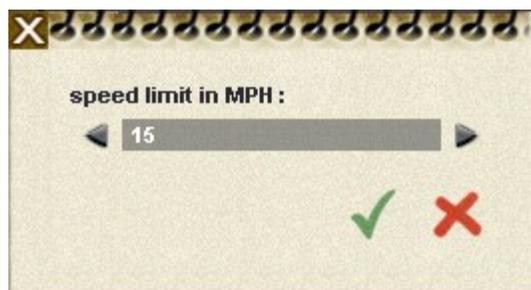
In my example, I had chosen MPH, so you see it here. If you choose KPH, you'd see that. Clicking the green arrow brings us back to the main dialog:
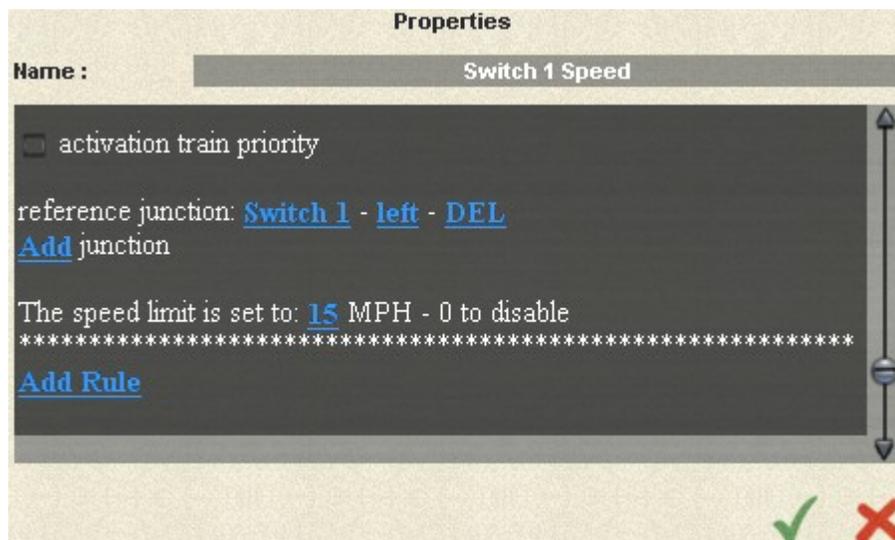
Now you see all the parameters you set. You can add another junction to the existing rule, so that two junctions must be set before the rule becomes active. You can also delete the rule and start again.

Notice the 'Add Rule' at the bottom. This is how you'd control a second direction for the switch. In the first rule, we set the speed to 15 for a left direction. In the same way we could create a second rule setting the speed to some other speed for the 'right' direction (or straight in this case.) Otherwise, the ISS has no effect on existing speed unless the switch is facing left.

In placing the control, it's important to place it far enough from the switch to allow the train to slow down to your restricted speed before reaching the switch. Obviously the control has to be further away for an existing 70 speed than for a 20 speed. A little experimentation will determine the correct position.

The ISS is especially great where you have mainline trains backing into a siding. Nothing looks more un-prototypical than backing into a sidetrack at 50.

<u>Using the ISS in a multiple switch junction</u>

Finally, check out the example below:

This is the kind of complex junction I use a lot in my railroad. Let's say that westbound trains are on the near track and eastbound trains are on the far track. The ISS on the left sets a speed of 25 for westbound trains through XO East. The other ISS sets the speed entering the industry itself to 15. Note that the second ISS would *also* restrict eastbound trains backing into the industry.

If fact, using a single ISS like the second one above, placed near an isolated siding, does great job is keeping your trains operating in a prototypical manner. It's no longer necessary for your way-freight to back into the siding at high speed.

The Invisible Speed Signal works great and it's a fine addition to any railroad. There is one restriction you need to be aware of, however. The ISS is a *session-based control*. That means if you create a new session for your map, *all* of your ISS controls will return to their defaults!

If you have a huge number of ISS controls, like I do, you're much better off to just take an existing session with the ISS controls set, and just delete the rolling stock and make other desired changes. You don't want to have to reprogram all your ISS's.