

New Control System/Motors For Points in Logging Area

To Tony's article on the operation of the logging area I just wanted to add some extra notes on the changes to the point motion, specifically, the new slow motion point motors (and decoders) I have designed.

To clear up some misconceptions, they are operable from the panel in the same way we operate all the points on the club layouts, via the probe and the screw terminals. They also have the ability to be controlled via the DCC system, be that the relevant menu from a Lenz (or I hope Roco) hand control, or the iPhone/iPod/Android/JMRI system. I don't currently expect many to control points via the DCC system, but the functionality is being added now as part of a grander picture in the longer term future of layout operations.

One of the advantages of designing and building your own decoders for points (aka accessory decoders) - and carefully wiring the layout, is that you can have them behave and do *exactly* as you want them to. I have gone to some effort to develop these to tie in with the existing standard wiring in the panels, also tying in with the DC and DCC wiring for the tracks.

The DCC system need not be turned on, indeed it need not even be connected to the layout and the points will still work as expected (from the panel). Likewise, whether there is DC or DCC powering the tracks is also irrelevant, control of the points could be by the panel or the DCC system entirely independently of the track power*.

The point blades are moved at slow speed by servo motors, these provide very precise location and speed control of the point blades, they are not like the rapid solenoid motors most members will be used to.

The key thing to be noted when operating the points, particularly via the panel, is that the route indication lights are the *last* things to change, when you touch the probe to the brass screw to change the route you should not expect the light to change immediately. On selecting the route, the point blades will slowly move across and only when this motion is completed will the route lights change. Please do not be tempted to keep tapping the route screw trying to make the lights change. The lights will change on their own, but only when the point is ready. Think of it as being equivalent a signal mast only telling you to proceed only after the point has moved and is set correctly.

For the moment at least the address numbers currently assigned to these points will not be made known to users – they will be subjected to change as I consider the wider convention of point addressing on the layouts, and I do not wish to cause confusion if they need to change address. To this end if members wish to suggest some ideas for a logical point numbering system then feel free to provide me with input.

It's important to know that the route lights on the control panel are *always* going to be correct (aside from some quirky error).

The reason I make this statement is that there is a chance that if users were to look at the point status on their DCC control device it may show the opposite route to that actually set by the point. The reason for this, in lay terms, is that the decoder knows where the point is set, and it also sets the lights, if the point is changed from the panel, the decoder will be told to move the point, and hence the decoder knows the point moved and will adjust the lights, however, the DCC system will be blissfully unaware of this movement and will continue to show the previous point state. This will change in the future – part of that whole grander plan of layout operation thing, but I have to further develop some software to make it happen. This shouldn't cause confusion, the status quo of current operations will always be maintained.

Finally, the alignment of these points are adjustable by 'CVs' under DCC as is the speed with which the point moves. I think Tony has already made the request to test the area thoroughly and let us know if anything fails to operate satisfactorily. Should members discover that the point blades are not moving far enough across in either direction, please make me aware, and I can adjust the travel by programming in a matter of seconds.

The speed of travel is adjustable, presently, they are set at a relatively fast speed, they can be made to go much, much sloooooower, but I don't think it's sensible to move them much slower than present. That said, if you think they should be slower, ask me, and I'll consider it.

So in a nutshell the logging area points are:

Operable on (and with or without) DC and DCC independent of track power

Always correct to the panel lights but not necessarily correct to the DCC system – this will eventually be corrected

Slow motion and designed to change the panel lights last – please don't keep tapping the screw to change the point

Able to be adjusted via software ('CVs') for travel limits and speed – let me know if these need adjustment

There is some additional circuitry that enables the points to be operated via DCC controllers/system even if the booster is shut down due to a short circuit on the track.

That is, should a loco run over the frog of an incorrectly set point and shut the booster down due to a short circuit, the points can still be operated to correct the point's position and enable power to be restored without needing the booster to function. I hope that this should reduce the need to five finger shunt your locomotive or wagons off the

point frog if you've accidentally run them against an incorrectly set point.

Exactly how this is achieved without running a separate 'accessory bus' is a secret, but it sure isn't anything to do with light globes... Another of the great benefits to designing your own decoders, and having use of your own tools not contained in the standard 'off the shelf' tool box.

If you have further questions, problems or are interested in more details (excluding details of the above secret) see me.