## DCCconcepts TIPS: How to work out DIAMOND CROSSING Frog wiring

Once the track is designed & laid, wiring it can become a problem for many modellers. Step back & think it through though & it soon becomes clear. All we need do is apply some clear, logical thinking.

<u>Always</u> grab a bit of paper and a pencil when you do it though, because writing it down helps to make it clear. In this case, its actually a very simple thing to work out if you use a little logic - see the steps below.

- Logically points 1 and 3 are a crossover & should be controlled with one switch or DCC accessory address.
- If you trace the routes and note the rail-to-frog relationships, when points 1 and 3 are set to transit the diamond via route 3 then point 2 must always be set to route 4 so there is no conflict.
- The logical conclusion is therefore that points 1 and 2 and 3 should also always be changed together.
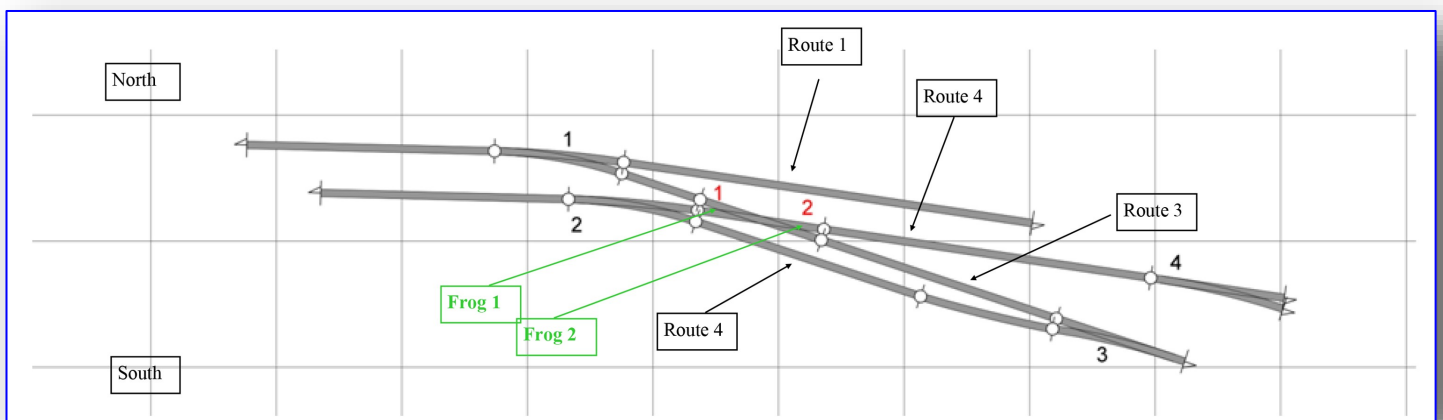
Once you apply this sort of logic, arranging frog control of the diamond becomes quite easy.

- Connect points 1/2/3 so that switching is all linked together to give this result:
  * **Position 1:** This is point 1 = south = 2 south = 3 north
  * **Position 2:** This is point 1 = north = 2 north = 3 south.
- Frog switch for point 1 frog also controls diamond frog 2 (they are at same polarity)
- Frog switch for point 3 frog also controls diamond frog 1 (they are at same polarity)
- We don't need to do anything special for point 4, because its "route access" is via point 2's position.

SO - that's it! Job done... When points 1/2/3 are set either way, diamond frog are the correct polarity.

Cobalt, with 2x S.P.D.T. changeover switches, will make actually <u>doing</u> it easy too. Cobalt can even provide easy LED indication and computer I.O. type feedback to DCC controllers from many brands
   (We will provide a TIPS bulletin on "feedback with Cobalt motors and Accessory decoders" soon)

Use this approach for even on most complex junctions and it will become clear. If it doesn't, and you've tried but can't work it out, email questions@dccconcepts.com and ask us... We will do what we can to help you.

Click on any picture to be linked to more information about Cobalt motors

Cobalt Omega   **Cobalt iP Digital**   **Cobalt iP Analog**