IRREGULAR FEATURE

Electrickery Pt.1

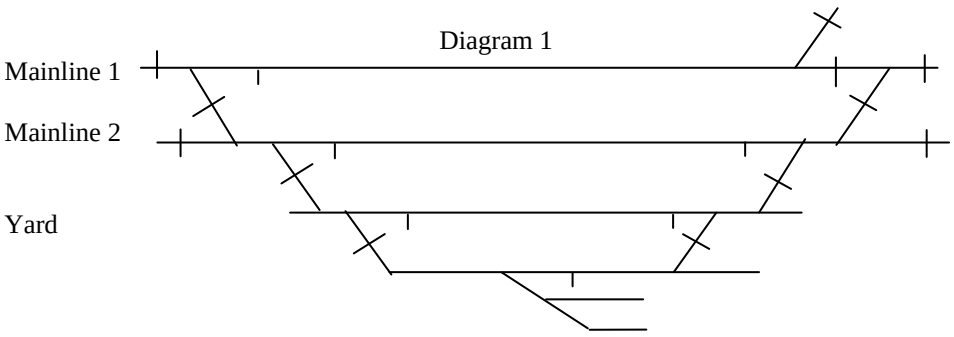
An isolated case

I have been asked so many times about the correct placement of isolation breaks and wiring of model railway track and points etc. that I have decided to write a series of articles that will, I hope, help to answer some of the questions and at the same time explain the control system that is being applied to our permanent layout. I don't intend this to be a complete 'how to' as there are plenty of books around to do that, but more of a 'this is my method' type of article. The best way I believe to help the reader to understand is to use an actual case, one that can be touched and studied in association with the description. For this purpose I will use Sedup, the second station of our permanent layout.
Starting with the isolation breaks and track wiring, usually when asked about this I ask a few questions of my own.

- What is the arrangement of track connections?
- Do the points have live or dead frogs?
- Where are locos going to be held while other movements are made?
- How many controllers? If more than one is a common earth system employed?
- Are there any reverse loops?

All of these questions need to be answered before a start can be made on the positions of the breaks. The arrangement of track connections must be taken into consideration because if one section of track that feeds another is isolated, the second will also be isolated. Conversely if a section has more than one feed through different points, it may be near impossible to isolate! The reason for querying about live or dead frogs is that while live frogs usually require a little extra isolation, if placed carefully, these same isolators can be used for both short circuit prevention and locomotive isolation purposes and after looking at the diagram I would use the same number and arrangement of isolators but it would require 14 extra wires with dead frog points to ensure smooth running. Quite obviously we need to know where locos are to be held, that's the main reason for most of the breaks. If more than one controller is to be used then the track must of course be divided into sections guided by the proposed operation, the use of separate power supplies and a common earth makes this division much easier also locos without all wheel power pickup (Lima, Hornby etc.) will cross much smoother between controllers wired with a common earth. Reverse loops require their own special treatment to prevent short circuits, although this is not as complicated as some instruction books would have you think! A description of the method I use will come in a later issue. Having taken all these things into consideration we can now pick a section of track that will normally be always live, usually a mainline or yard throat; this will be the track power feed in position. Unless the track plan is very simple there will usually be more than one feed in point required. (See diagram 1) As ours is a through station the mainlines on each side would be the feed in points. From here the power fans out via the points (or via relays switched by the points if wired by me) to the rest of the tracks. Each time a track is reached on which a loco may be required to stand whilst movement goes on elsewhere in the same block it must be isolated and then fed via a switch, unless it is a stub track, where it can be isolated by the point. In the diagram the isolators are represented by lines that cross for both rails or touch for the rail on that side only. The lower rail (front on the layout) is the control and the top rail (rear on the layout) is the earth. While this conventional method works it is not very user friendly with more than one controller because if you wish to cross from say Mainline 1 to the yard it involves setting up and using all controllers and interrupting all other operations in the section. A method much fraught with danger, all points must be set correctly, all controllers must be set to the same speed and direction and isolators cleared. One mistake and we have a very jerky ride. There is a much better method and it is the one that has been used for our layout. It is what I like to call 'Smart Track' it is almost the opposite of the first method whereby the position of the points decide which controller is in charge but you will have to wait till the next issue to find out how it works. I suggest that you keep this page handy as you may need to refer back to it through this series.

Diagram 1



Catch you down the track....Tony Mikolaj.