UPDATES FOR THE CENTRAL STATION, PART 6

Setting up signals: It's not witchcraft

The new generation of Märklin signals is even more clever: Not only is it DCC-compatible, but setting up signals is child's play too. We use the new color-light signals as example to show how it works.

With the new signal generation, train control can be replicated more realistically – almost like on the real thing.

As realistically as possible at the signals – that's how our trains should stop – really, that goes without saying. To achieve this, there are a few points to remember: Setting up a classic signal section is still the surest way of getting a train to stop, even in these days of digital technology – after all, no loco relying on electric current can continue to run without it.

The minimum length of the signal section depends on a number of factors, such as the running speed on the approach to the section or the mechanical deceleration behavior of the models used. In practice, three standard lengths of track – about 54 cm (21-1/2") will be enough for the signal section. The center conductor (B) is isolated both in front of and behind the signal section. Important: Please observe the golden rule that there must be a traction current feed both before and after the signal section, otherwise you may find you have unintentionally set up a dead section.

The signal motor has two alternative outputs, of which one is used to supply traction current to this signal section. A functional overhead system plays a lesser role in these days of loco digital controls it's true, but despite this, these signals also support the option of supplying a second signal section in the overhead catenary parallel to the signal section in the track itself. This is the purpose of the second output from the signal. However, let's go back to the output for the signal section in the track. The lead made up of two red wires which belongs to it is supplied with the signals. One of the red wires is attached to the traction current connection of the digital signal (B – red wire). This can also be done directly via a distribution strip which is directly connected to the traction current connection of the Central Station or a booster. The connection can also be made to the center conductor outside the signal section, or indeed to a ring-circuit when one is installed. The second red wire is then connected to the center conductor. The center conductor connections for any of the C-, K- or M-track systems can be used for this purpose. If you are reasonably competent in handling a soldering iron, you can just solder the wire on.

The signal output now connects the two red wires with one another when the signal shows the aspect Hp1 = proceed. Traction current is thus fed through these two switches in the signal section to allow a loco to run through. This connection is also made in signals 76491, or 76492 showing Hp2 = proceed slowly. Only when showing Hp0 = halt is the signal section dead and the trains stop as required.

The stop is much more elegant when the braking module 72442 is combined with the signal. The trains then stop at a signal showing Hp0 not merely with their purely mechanical deceleration behavior, but can also slow down – at least, today's digital locos – in accordance with the braking behavior programmed in the decoder. Three sections are required altogether to set up these braking sections:

1. The transition section
This first section isolates the following braking section from the rest of the layout. On a Märklin H0 layout it should be about the length of a center pickup shoe (max. 70 to 90 mm – 2-3/4 to 3-1/2"). On two-rail layouts, this section generally needs to be as long as the longest locomotive on the layout, so on Trix H0 this would be about 30 cm (12").

2. The actual braking section
If you want to imitate realistic stopping behavior, you should allow at least 100 cm (39") in H0 gauge, depending on the track system used.

3. The dead safety section
The braking section is followed by a dead signal section which is to ensure that no train unintentionally runs past the signal. If desired, the signal can be sited exactly at the transition between the braking and safety sections. Stopping in the safety section would thus be comparable with an emergency braking in the original when a signal at danger is run past. This safety section should be similar in length to the classic signal section – about 54 cm (21-1/2") or three standard track lengths.

Tip 1

Earlier decoders without integrated braking delay using braking modules often display widely-varied stopping characteristics. There are versions which cause an abrupt halt directly at the start of the braking area, while others run through to the safety section. If you use the braking module 72442 technology, you should logically give preference to the latest loco decoder technology.

The track length between two signals when using the braking modules is thus no longer based on the longest train to be run alone, as one can still read in older instructions. As an illustration: With a train 150 cm (59") long, you should allow at least twice that distance between two signals, to achieve correspondingly attractive effects.

The connection between braking module and the signal is fully described in the instructions for the signal series. To connect the braking module with these signals the three-core cable also supplied with all these is used. According to the setting of the signal, the braking module is actuated in parallel via this connection. →

The new color-light signals

Without them, nothing moves – neither on the model railroad nor on the full-size version: Home signals (Hp) show whether a train may proceed into the following block section or not.

76491 Color Light Home Signal

German Federal Railroad (DB) standard design block signal. 2 settings: "Stop" - red (Hp0) and "Proceed" - green (Hp1).

The signal has an integrated electronic signal circuit and 1 separate signal decoder. Control of all functions can be done in the digital system with the signal decoder included with the signal, or in conventional operation with a 72760 control box.

76493 Color Light Home Signal

German Federal Railroad (DB) standard design entry signal. 3 settings: "Stop" - red (Hp0), "Proceed" - green (Hp1) and "Proceed Slowly" - green/yellow (Hp2).

The signal has an integrated electronic signal circuit and 1 separate signal decoder. Control of all functions is possible in the digital system with the signal decoder included with the signal, or in conventional operation with a 72760 control box.

Ensure safety on the tracks: Color-light signals. Here on the approach to Munich main station.

The new color-light signals in the 764xx series

As well as new semaphore signals, the color-light signals in the H0 range were also further developed. The following points must be borne in mind:

- **The new 764xx-series signals are also suitable for DCC operation and can be used on Trix H0 without restriction.**
- **The address setting is primarily via a coding switch which is also accessible from underneath when the electronics are installed. Only DCC users who require more than 512 addresses will have to program this address area electronically.**
- **This signal generation has been designed mainly for control by digital switching operation. Analogue switching operation will also be possible with the new 72760 signal control box, as with the new semaphore signals.**
- **Semi- or fully-automatic operation of these signals is, as with the semaphores, only possible with the Central Station 60215 or the earlier Memory 6043.**
- **The 764xx series signals are on a different technical level from the signals of the preceding generation, so the exchange of parts between the two generations is not possible.**

Optically, the 763xx series signals were already top class, and in this respect the two signal generations play in the same league.

72760 Signal Control Box for Advanced Signals

This control box is for operating up to 4 signals. A multi-conductor cable with plugs is included for connecting control boxes together.

Tip 2

The Central Station 60215 is also equipped with a simulation of the acceleration and braking delay for decoder versions not yet fitted with the function. This simulation can be recognized by how quickly the speed indication on the display takes up its new position on an alteration in speed. This function is however inactive in the 72442 braking module. Only the values programmed in the respective decoder can be implemented when using this module.

Generally, for these signals the following installation sequence is used:

- **Determine first which pair(s) of buttons will control the signal.**
- **Set the appropriate address in the signal.**
- **Possibly set a suitable button symbol in the Central Station keyboard.**

The signal section or the braking section with the braking module 72442 is set up as for the semaphore signals. This technology is the same for both types of signal. In the next article we will have a look at some special possibilities for programming the signals. Just wait and see what stunning effects are possible here.

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