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Principles for signalling train routes using wayside signals

Principes de signalisation pour les mouvements de trains à l'aide de signaux fixes
Grundsätze für die Signalisierung von Zugfahrten mit ortfesten Signalen



UNION INTERNATIONALE DES CHEMINS DE FER
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Summary

This leaflet contains principles for signalling running movements of trains by means of wayside signals with the objective of achieving standardisation of wayside signalling systems among the different railways in the long term.

1 - General

The aim of wayside signalling is to transmit a stop or a run order (distance signalling), speed information (speed signalling) and other useful information (e.g. route signalling) to the train driver.

2 - Signalling principles

The following principles apply:

2.1 - 1st Principle

Distance and speed signalling use different indicators.

2.2 - 2nd Principle

Coloured lights are used for distance signalling.

The system requires a minimum of three aspects.

2.2.1 - A green light meaning: "Line clear".

2.2.2 - A yellow light meaning: "Warning to stop at the next signal".

2.2.3 - A red light meaning: "Stop".

Where the distance between signals is less than approximately twice the braking distance, the signal aspect (see Point **2.2.2**) should be integrated in the previous signal.

Where the distance is greater, the aspect (see Point **2.2.2**) shall be indicated on a separate signal (warning signal with 2 aspects). This warning signal is generally located at stopping distance from the main signal to which it belongs.

2.3 - 3rd Principle

Numerical indicators will be used for speed signalling.

In the event of a speed reduction, it is normally necessary to precede the execution signal by a signal announcing the speed that must not be exceeded when passing the execution signal or the points that it protects.

Entry into an occupied line or a short track can also be signalled as a speed reduction.

2.4 - 4th Principle

In order to prevent any routing mistakes, directional signals may be placed before a junction, where the two sections are not differentiated by the speed indicated.

2.5 - 5th Principle

Where several indications must be displayed at the same place, the signals will in general be grouped on the same mast.

No speed indication in the form of a luminous display will appear simultaneously with the "Stop" signal (see point 2.2.3 - page 3).

2.6 - 6th Principle

To increase the capacity of a line or to permit a higher speed, "pre-warning" (4 aspect signalling) can be used. The additional aspect meaning: "warning to stop at the signal following the next signal" can be indicated by a flashing light or a combination of several colour lights.

2.7 - 7th Principle

A permissive stop meaning: "Stop, proceed at sight", may be signalled by a complementary indicator.

Bibliography

1. Minutes of meetings

International Union of Railways

Way and Works Committee (Item 6.2 - Approval of Leaflet 732), Arnhem, June 1991