Updated EWR OBU - Train Operations Staff Brief.

ERTMS and OBU Operation:

This brief is designed to highlight to Train Drivers what they will see when operating the new EWR OBU in mainline operation.

This brief is not designed to provide every detail of the new ERTMS operating system (these details can be found in the operating manual posted in the mess room). However, it will explain the critical differences from the operating system you are used to using / seeing previously.

The new ERTMS operating system works on the basis that if the Train Driver is deemed to have the train under suitable control there is not a requirement to give the Train Driver additional information. The new ERTMS operating system monitors the train journey but only supervises with instructions when it determines this is required.

Figure 1 shows you what information the DMI can display.

Speed Monitoring

When there is no need to brake to a target:

a) **the Circular Speed Gauge (CSG) is coloured dark grey from 0 to the Permissible speed (see fig 2), and**
b) **the speed pointer is coloured grey if the current speed is below or at the Permissible speed.**

In the figure 2 example the train is running at 47 km/h and the Permissible speed is 110 km/h. No target speed is required to be shown.

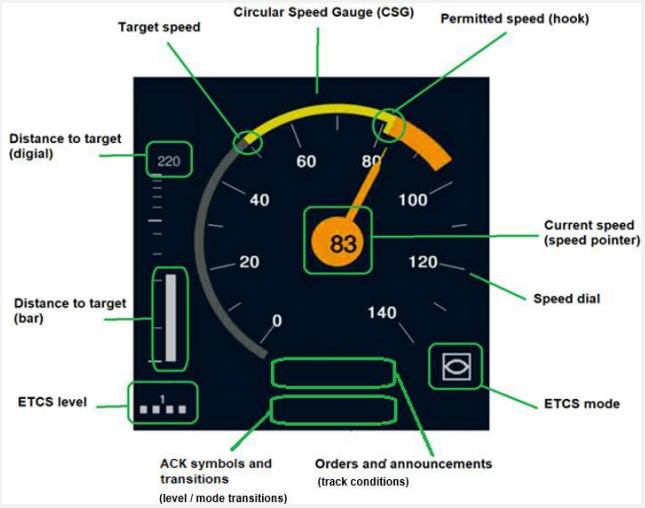

Figure 1

Figure 2

Any failure or incident with the ERTMS must be reported to the OCC immediately.

Over-speed Status

If the train speed is higher than the Permissible speed, the system will show the Permissible speed to the brake intervention limit speed in orange, as indicated in figure 3.

The CSG from the Permissible speed to the 0 is coloured dark grey.

In the figure 3 example, the train is running at 27 km/h and the Permissible speed is 25 km/h. The train is overspeeding. The ETCS supervision is in over-speed status and the Intervention speed limit is 30.5 km/h. The driver is warned to reduce the train speed with a visual and audible warning.

Intervention Status

If the train speed exceeds 5.5 km/h – 10 km/h (determined by the system) above the Permissible speed the ETCS supervision reaches the intervention status.

In this case the Permissible speed to the brake intervention speed limit and the speed pointer are coloured red which indicates that the on-board equipment has intervened on the brake (brake application symbol is displayed). The ETCS automatically applies the service brake.

Note that during a service brake intervention, once the train reaches the Permissible speed, the service brake is released.

In the figure 4 example the train is running at 37 km/h and the Permissible speed is 30 km/h. The train is overspeeding. The ETCS supervision is intervention status and the ETCS has applied the train brakes automatically.

Figure 3

Figure 4

Any failure or incident with the ERTMS must be reported to the OCC immediately.

Release Speed Monitoring

The Release Speed is a special ceiling speed limit, applicable in the vicinity of an End of Authority (EOA). The train cannot exceed the Release Speed on approaching a stopping point.

When the train approaches an EOA with a Release Speed the "Sinfo" sound is played.

The Release Speed is coloured grey in the CSG. The digital value of the Release Speed (1) is displayed as shown in figure 6 (in this example the Release Speed digital value is 30 km/h).

The ETCS enters under Release Speed Monitoring (RSM) when the speed is below the Release Speed or when the maximum Permissible speed is below the Release Speed. See figure 5 for example.

The Permissible speed to the target speed is coloured yellow. If the current train speed is below or at the Release Speed, the pointer is coloured yellow.

If the current train speed exceeds the Release Speed, the equipment commands an emergency brake, and the speed pointer is coloured red.

Both situations are shown in figure 6. Once commanded, the emergency brake will not be released until the train is at standstill.

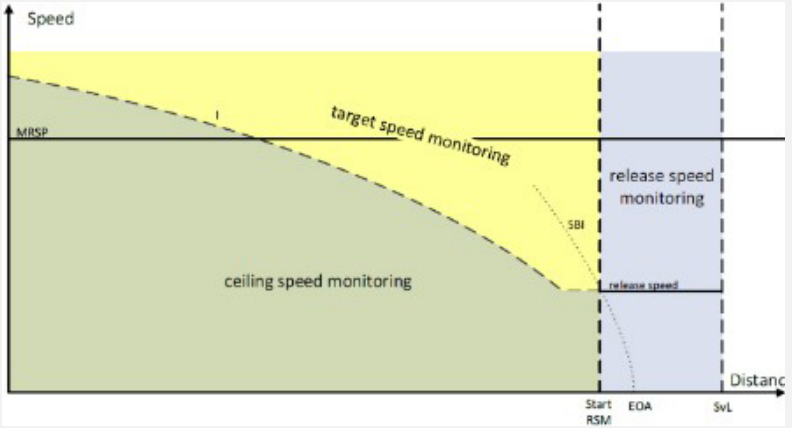

Figure 5

Figure 6

Any failure or incident with the ERTMS must be reported to the OCC immediately.