

TECHNICAL INSTRUCTION

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NETWORK RAIL - SIGNAL ENGINEERING

TPWS Loop Positioning – Buffer Stops

Relevant Standard: NR/SP/SIG/I0138, Issue 3, April 2004

As a result of the incidence of “Reset and Go” events, whereby a train subject to a TPWS intervention has the equipment reset by the driver who then proceeds to drive the train without authority, a review of the application of TPWS has recently been completed.

As part of this review the industry agreed that there was an unacceptable number of interventions at buffer stops and on approach to PSRs. To address these interventions a review was conducted in to the effectiveness of TPWS at buffer stops and agreement was reached that the set speed of TPWS approaching buffer stops would be reset to provide drivers with a tolerance of between 2 and 3 mph above the nominal 10 mph required on approach to the buffer.

Signal Designers should note that:-

This can be achieved by increasing the separation of the TPWS OSS loops on approach to a buffer stop, where such loops are currently set to 10 mph. The larger separation would be achieved by moving the *arming loop* such that separation was increased from 4.5 metres to 5.5 metres. The trigger loop should be left in situ since this ensures protection is provided for speeds up to a nominal 20 mph should the TPWS equipment be required to command a brake application.

An updated version of NR/SP/SIG/I0138 will be issued in due course. Pending the publication of the updated version, the current version of NR/SP/SIG/I0138 (Issue 3, April 2004) should be applied subject to the following amendments these are required to alter the set speed approaching buffer stops:

Section 10.1 General

Replace the existing final sentence of the third paragraph which reads: “The buffer stop OSS shall be set to a nominal 10 mph, therefore buffer stop OSS will normally provide protection for trains passing the OSS at between 10 mph and 20 mph.” with “*The buffer stop OSS is intended to minimise the risk of buffer stop collision for a train speed up to 20 mph. The trigger loop is placed a minimum of 55 metres before the buffer to provide adequate distance to stop the train.*”

Replace the fourth paragraph with “*Following TOC driver experience it has been agreed that the set speed shall provide a small margin above the nominal speed of 10 mph that drivers are advised is the maximum safe speed. The OSS set speed will normally be 12.5 mph. TPWS will therefore provide protection for trains approaching the buffer stop and passing the OSS at more than 12.5 mph up to at least 20 mph. The set speed shall be constant despite possible variations in approach speed to provide consistency on final approach and minimise the risk of error.*”

Section 10.2 Transmitter loop positioning rules

In the first paragraph replace “4.5 metres” with “5.5 metres” and replace “10 mph” with “12.5 mph”

Replace the existing table 10 with the following table:

<i>Distance Buffer Stop to Trigger loop (metres)</i>	<i>Separation distance (S) Trigger loop to Arming loop (metres)</i>	<i>Set speed (mph)</i>
55	5.5	12.5
55 – 67	5.5	12.5
68 – 72	6.0	13.5
73 – 77	6.5	14.5

Section 10.3 Loop positioning tolerances

In the second paragraph replace “4.4 metres” with “5.4 metres” on two occasions.

END

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