APT HEADWAYS THROUGH TEMPORARY SPEED RESTRICTIONS

This report examines the effect of temporary speed restrictions on train headway.

Temporary speed restrictions are required for re-laying or other track alterations. Any particular restriction is in force for a variable period, usually one or two weeks. In order that the effect on trains may be quantified, rules are laid down which specify the number and length of speed restrictions allowable simultaneously on any stretch of line.

A commonly-occurring temporary speed restriction is one of 20mile/hr extending for 440 yards, and a metric near-equivalent of this is assumed for the work reported in this note. It attempts to quantify the effects of such a restriction on the headway (the minimum attainable spacing between successive trains), for the proposed Advanced Passenger Train (APT), and compare with the situation for a conventional train hauled by a class AL6 (Class 86) locomotive.

Under "green signals only" conditions, APTs are better than AL6-hauled trains as regards headway, but the difference is small (about 20 seconds) and probably not significant. As regards delay to the train, the APT is very slightly worse, the delay being six seconds greater; this amount is insignificant.

However, where the temporary speed restriction occurs along with signals spaced at 1600m, APTs can maintain 180s headways, whereas AL6-hauled trains cannot. To achieve this headway, an APT must pass two signals displaying double yellow on the approach to the restriction.

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