AUTOMATIC BRAKE CONTINUITY TESTER: BRAKE LEAK-OFF TESTS

The in-service continuity testing of a train's air brake system takes place whenever a locomotive is coupled to a train. In the context of a passenger train this is little hardship in terms of the time involved relative to the time spent travelling. However, with freight trains a locomotive often has to 'run-around' or change ends due to the nature of their operation. This means that considerable time can be spent doing brake continuity checks, which is exacerbated by long trains using single pipe brake control where the charge times are high.

Previous research showed that a device could be made to remotely operate their brake cock at the rear of the train and thus effect the continuity check without the guard or train preparer walking the length of the train twice. However, procedures state that when a train is left without a locomotive an undefined number of handbrakes must be applied at the downhill end of the train (due to fears of the air brakes leaking off before the locomotive is re-coupled.

Tests were arranged to demonstrate how long a rake of coal wagons would hold on a gradient. Results showed that a random sample of MGR wagons remained stationary on an incline for 5 hours, which would more than encompass the time taken to run a locomotive round. Lower wagons did show some movement as soon as the leading locomotives were removed. After 5 hours the downhill end of the train had moved approximately 2.5 metres. The wagon adjacent to the trailing locomotive had not moved at all.

On completion of the test, the brakes were checked on all wagons. 9 out of 20 had fully released brakes, 4 out of 5 of the vehicles at the downhill end had released brakes and all the movement had come from these.

There is strong evidence to suggest that such a rake of wagons could be left on its air brake for 'some' period of time, i.e. 60 minutes without a problem. This would mean a remote end of train device to assist in the continuity check could be considered as a way of saving time.

BR Research Report Ref: RR-VS-5
Author(s): KG Schofield
Date of Publication: April 1991

AEAT Abstract Date:
24/04/2002