

DEVELOPMENT OF AN AUTOMATIC BRAKE TEST (ABT) VALVE FOR USE ON 2-PIPE AIR-BRAKED FREIGHT TRAINS

The Transport Technology Assessment Group of the Research and Development Division has proposed the use of an Automatic Brake Test (ABT) valve to reduce the run-round time for 2-pipe air-braked freight trains. Included in their preliminary report are details of cost and time savings anticipated from the use of such a valve. An experimental ABT valve was tested by the Testing and Performance group of the Chief Mechanical and Electrical Engineers department (BRB) who expressed some concern over the way in which the device functioned.

Braking Systems section was asked to assess the experimental version and to perform any initial development necessary to produce a functional device suitable for service evaluation. This memorandum has been written to report the results of this work. Comments are included on safety aspects and also a possible method of working.

In conclusion, the latest series of tests has shown that, with the spring removed, the prototype ABT valve is technically satisfactory. The tests have also shown that the time savings claimed should be achievable in practice. The possible failure modes have been examined and have shown to produce 'safe-side' failures with one exception. This is when the guard closes the wrong cock on the wrong vehicle and gives a false indication of a good Brake Test. This is not considered to be a problem for service trials but it is suggested that if the ABT valve is put into full service, a special test facility should be provided on the locomotive.

The next step will be to produce a number of 'engineered' prototype valves for service trials, which will be reported on in due course.