

IN-SERVICE MEASUREMENTS OF THE WEAR OF BRAKE DISC PAD ON HIGH SPEED TRAINS

Measurements of brake pad wear on a power car and a trailer car of an HST (High Speed Train) working Western Region domestic services were carried out at intervals from May 1983 to March 1984. The information was collected to provide data on the costs of braking (so that the cost-effectiveness of alternative brake systems could be evaluated) and to provide a comparison with wear measurements obtained by dynamometer tests.

Consistent pad wear results for the trailer car (TF 41133) were obtained from the outset and monitoring ceased in July 1983. First results from the power car (W43137) were inconclusive, so monitoring resumed from October, although various operational problems were encountered (detailed in the report).

In order to see whether there was any correlation between pad wear and brake application force, the pad force at each position on the power car was measured as a function of driver's brake control position and brake cylinder pressure.

The report concludes that:

- On Western Region the energy input to a disc brake averages 0.21 MJ/mile/pad for power cars and 0.12 MJ/mile/pad for trailer cars.
- Trailer car pad wear rate is 0.12 g/MJ giving a pad life of approximately 6 weeks.
- The mean power car pad wear rate is 0.43 g/MJ. Pad life was 22 days with a range from 12 to 33 days.
- No correlation was found between pad wear rate and position or clamp force.