

aWIND SPEED AROUND A VEHICLE MOUNTED MULTIPLATE BRAKE

The flow of air around bogies, wheelsets and brake equipment is of great importance where brake cooling is concerned, as the forced convection provided by the train's movement and the brake's rotation is the primary form of heat transfer. When measuring the cooling rate of a brake a large amount of scatter in the results is evident between test runs at any one speed. It is thought that this scatter may be reduced by correlating the cooling rates with the average wind speeds measured during each test run.

Constant speed cooling tests in the multiplate disc brake mounted on the test vehicle 'Hastings' provided the opportunity to measure wind speed profiles both in front of and behind the brake. The measurements were initially made with anemometers oriented longitudinally, in the direction of travel. Having obtained these it was possible to position four anemometers at different points near the brake to measure wind speed both longitudinally and laterally, across the bogie.

The details of these wind speed tests are contained in this report. It is concluded that the reduction in scatter of results by taking account of wind speed is comparatively small, and taking crosswind into account produced no further improvement.