

MEASUREMENTS OF THE NATURAL WIND IN CUMBRIA: OCTOBER 1980 - MARCH 1981

The possibility of a train overturning in high winds is very sensitive to the wind speed. Experiments to measure various aspects of the natural wind at West Coast Main Line trackside sites in Cumbria are reported. Mean velocity and turbulence intensity profiles were measured on the windward side of the railway embankment at Shap Wells, and single point velocity and turbulence measurements were made at three local embankment-top sites and at a local hilltop reference site. The results, which should be regarded as preliminary because of the small amount of useful data yet obtained, were used to:

- Assess the validity of the technique for determining local 50 year return speeds used in the past by BR investigators
- Determine the degree of correlation between the wind speed and direction at the measurement sites and those measured at local Met Office sites.
- Assess the validity of the topographical model tests at the site carried out at Oxford University, under BR contract.