

RESULTS OF THE 1975 CURVING TESTS WITH HSFV1 IN CORNWALL

As part of the railway vehicle curving study, tests were carried out with High Speed Freight Vehicle 1 in Cornwall. The forces and displacements for the vehicle on a variety of curves were measured, and the results obtained compared with Boocock's linear curving theory. It is shown that this curving theory has significant limitations, and that it can be improved by including the effects of the wheel/rail contact angle.

The improved theory is able to predict some of the effects of change in railhead condition, as well as the effect of 'gauge spreading' whereby one wheel pushes the other wheel on the same axle hard onto its flange. However, even this improved theory shows significant errors as curve radius is reduced, and in certain situations it fails altogether. Possible reasons for this are examined, giving rise to suggestions for further theoretical developments.