APT-E TRAIN VEHICLE DYNAMICS TESTS ON THE MIDLAND MAIN LINE DURING OCTOBER AND NOVEMBER 1974

Tests up to a maximum speed of 160km/h show that the lateral axlebox force $H_c = (10 + P/3)$ kN was not exceeded on plain main line track for the E1 power or E1T trailer bogies of the experimental Advanced Passenger Train. The results also show that the RMS H force dynamic augment was always greater on the trailing axles, for both the power and trailer bogies. The soft and stiff lateral primary suspension E1T bogies on plain main line track show there was no significant difference in either RMS or peak lateral H force response. However, on points and crossings the soft bogie gave a reduction of 30% in peak force, compared with the stiff version. The most significant feature associated with the E1T bogies was the signal power evident at wheel rotation frequency, in the H force, axlebox and bogie frame lateral accelerations. This emanated from wheel wobble.

Both the vertical and lateral ride was satisfactory in terms of RMS response, with accelerations ranging from 0.22g to 0.041g. Ride indices in the above planes were in the order of 2.3 to 2.8.

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