

AXLEBOX MOUNTED TREAD BRAKE FOR FREIGHT VEHICLES

A prototype composition tread brake has been designed in an attempt to provide a low cost, low weight tread brake for freight application. In order to enable the brake to be evaluated in service it was designed to meet a current freight vehicle specification, namely a 41 tonne VDA (Air brake covered van) with Taperlite suspension. The brake has been manufactured and fitted to the vehicle and is currently undergoing performance trials prior to being put into service for long term evaluation. This memorandum outlines the design of the brake and the conversion of the vehicle from disc to tread brakes. The two braking systems are also compared on a basis of weight and cost.

A prototype composition tread brake has been designed and successfully fitted to a freight vehicle which is about to go into service for long term evaluation.

The original specification for the brake was that it should be competitive with existing disc brake installations in so far as it should be lighter and less expensive. The first point has been satisfied, since the tread brake installation is only 40% of the weight of the disc brake installation. The tread brake appears to fall down on the second point since costings indicate that it would only be slightly less expensive than the disc brake installation. However, it is suggested that if the design were value engineered with a view to production in quantity, then substantial savings could be made. Furthermore, the brake would be in a more competitive situation in the private sector where manufacturers do not see the same cost benefits as BR who buy large numbers of disc brakes.

Other advantages of the axlebox mounted tread brake that might lead to it finding applications other than on freight vehicles are its compactness and the fact that when applied it does not short out the primary suspension. This latter advantage is not possible with frame hung brake arms, or indeed, with disc brakes, where the calliper reaction is fed back to the underframe or transom.