*Informal discussion of the Transportation Engineering Group**

The effect of terminals on railway operation

Introduced by

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Reported by

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Mr Ibbotson, in presenting his Paper the title of which had been amended from 'Liner trains and Roundabout trains', explained that in presenting certain aspects of railway traffic working he hoped to stimulate interest in the civil engineering problems involved and particularly in the design and costing construction of modern freight terminals, where apart from the purely railway aspect, large areas were required for the parking, marshalling and movement of road vehicles.

There were basically three types of freight traffic envisaged today (*a*) bulk traffic, (*b*) full load merchandise and (*c*) small consignments.

Bulk traffic was generally carried on the railway in large quantities, often connected with such places as collieries, docks, steelworks and oil refineries; train loads can be moved from place to place with the aid of mechanical and automatic loading and unloading in a short space of time, e.g. 1000 tons of coal in 27 min, this method of working being known as the 'Merry-go-Round'.

Full load merchandise which often travels in road lorries can today be carried competitively in loaded containers on special wagons in set trains to a regular time-table over long distances. Such trains are called freight liners.

Small consignments, i.e. less than wagon loads, are a rapidly growing traffic, much of which moves over long distances. Both these latter traffics present entirely different aspects of terminal characteristics.

Liner trains require ample cranage and siding capacity for quick loading and unloading of containers as well as hard standing and parking off the public streets for the road trailers.

Small consignments require not only loading and unloading but sorting space under cover, and distributing to road vehicles again with ample parking facilities. It is likely that small consignments will eventually be carried in special containers, presenting another design and eliminating the need for much of the covered area.

Many of the terminals were in developed areas and one speaker suggested that they might be moved out to less developed areas and the old sites redeveloped to the financial advantage of the railway.

As was to be expected, the discussion developed along two distinct lines, i.e. methods of operation and costs; and the engineering aspects of terminal design in relation to the modern methods of operation versus structural material.

One speaker suggested that from his experience of railway yards, much space was being wasted. He wondered how much consideration had been given to the forms which a smaller depot might take.

The Author had suggested that much space might be saved by transporting small consignments in containers; the speaker agreed and suggested that much construction

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work could be saved and efficiency improved if they could get away from the concept of having to work at a 4 ft deck height.

Another speaker on the same aspect said that both small consignment traffic and liner trains raised engineering problems. He agreed with the previous speaker that there were possibilities of the old fashioned level being done away with, but the key to the problem was that the alternative must have speed in movement of container from rail to floor and on to lorry.

The liner trains raised problems of intensity of loading of the very big slab areas.

He thought that it was necessary to watch very carefully these new proposals as affecting the railway track. Re-routeing was producing problems of axle loading and rail strength and he thought it was necessary that the railway engineers should continuously look ahead and be prepared to cater for 25 ton to 30 ton axle load. He gathered that French hauliers were facing similar problems in relation to their secondary lines.

No aspects of structural design or equipment were discussed.

Dealing with the traffic aspects of the Paper, some speakers referred to the capacity of bulk trains and the speed of unloading. The Author said that the coal trains were mostly today of 1000 tons capacity and it was suggested that this could well be raised, to say 4000 tons capacity trains. This would, however, affect the working colliery terminals in siding capacity and the electricity authority in the matter of space and facilities for unloading, this really being the governing point in the efficient turnround of block trains.

A suggestion was made that coal might be better moved by conveyor or pipeline than by rail and this was certainly the case with oil. The Author, however, did not agree and said that the decision had been reached, rightly or wrongly, that the rail operation as now being adopted was so cheap that neither conveyor nor pipeline operation were satisfactory alternatives.

It was cheaper to transport oil by pipeline than by train for comparatively short distances, but the oil companies were well aware of the competitive power of the oil train.

On the question of liner trains, several speakers asked what was the efficient minimum distance these could afford to be run. It was suggested that the critical distance would be some 200 miles.

Many questions were put and much discussion took place on container sizes, it being suggested that shippers were looking toward 40 ton containers and the Author emphasized that their use was entirely dependent on the existing construction and use regulations as laid down by the Ministry of Transport. At the moment the limitations were on a load of not more than 35 ft in length and total weight of lorry and contents must not exceed 32 tons; the effect of this was that a maximum weight per container of 21 tons was in force for road traffic. There was nothing to prevent a railway from carrying a 40 ton container with 40 tons of goods in it but at the moment there was no point in this if such container could not get on the road.

Questions were asked as to the costs of various forms of freight carrying and on the construction of terminals.

On the latter point not much helpful information could be given as those terminals which have been constructed have such different aspects but figures of £75 000 upwards had been given.

On the detailed analysis of tonnage figures, the Author reluctantly but firmly refused to be drawn.

Finally he pointed out that there were container traffics which lent themselves to road and others to rail, and some to both.

It would be foolish the Author said—and this was the thesis of Dr Beeching's re-shaping report of 1963—for the railways to think they could do everything as well as everyone else.

It should not be inferred that everything presently existing was wrong. Some operations were much better than others, but unless the railways were prepared to modernize and to spend money, they would get more and more out of date and more and more uneconomic.

It was here that the engineer could play his part.

Those taking part in the discussion included Messrs Bristow, Butland, Carr, Dalling, Green, Grosvenor, Gower, Hillyer, Jackson, Lamb and Lawson, Brigadier Lloyd, and Messrs Ponsonby, Ross, Steel, Watson, Webber, Whittaker and Wormal.