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TRANSPORT STATISTICS: PART II

Views of the United Kingdom member on road transport statistics

The need for road transport statistics

1. The development of road transport during the comparatively recent past, and its increasing competition with other forms of transport, has given rise to many problems regarding its social and economic value in relation to other and longer established forms of transport such as railways and inland waterways. The increasing importance of low transport costs as a contribution to reduced production costs makes it necessary to obtain some measure of the volume and nature of the work being done by road transport and of the cost in labour and material involved.
2. At present, despite the magnitude and importance which road transport has attained, there is an almost complete lack of knowledge in most countries of even the basic facts relating to road transport. This makes it impossible to obtain any adequate measure of the development of road transport in the various countries, and of its technical and economic efficiency in relation to the older forms of transport.

Nature of information required

3. The basic statistics required for any assessment of the road transport position would be those relating to the vehicles and labour employed; the nature and volume of the traffic carried; the distance it was carried; and the receipts and expenditure involved. Demands may also arise in the future for information relating to particular aspects of the industry or specific kinds of traffic (e.g. perishable foodstuffs).

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4. In view, however, of the comparatively small size of the operating unit in the industry, and of the limited nature of the existing machinery for supplying statistical information, it is suggested that as a commencement statistical information should be restricted to the vehicle fleets and to the volume of work done by them.

5. Road transport performs two somewhat different functions - viz:

(i) distributive work mainly of a local nature which can only be done by road, and (ii) longer distance transport work which is largely competitive with other forms of transport. This renders it desirable that the particulars obtained should be separated as far as practicable in approximate conformity with these two functions, and that attention should be particularly concentrated on the second aspect as being that on which information is more urgently required.

6. It is therefore considered that, as a commencement to obtaining a view of the road transport position, the principal European countries should take steps to render periodically the following few basic particulars either in the form of statistics or estimates. It should be emphasized that it is more important to obtain some common indications of these elementary facts from all countries than exact statistics, even of a wider scope in the case of some countries, which would not be on a common basis and would not afford a comparable view of the position. Approximate estimates should therefore be made which would give a reasonable measure of the order of magnitude, in cases where it is impracticable to obtain actual statistics; and the exact statistics required should not be too rigidly defined for common application, since some conditions may vary in different countries - e.g., as regards the division between distributive and transport work and the size of vehicles engaged in each. The essential thing under present conditions is to make a start by getting, for each country, broad measures of the basic facts indicated.

Passenger traffic

- (1) Number of vehicles available for public passenger transport in broad divisions according to seating capacity.
- (2) Total vehicle miles for each division in which vehicles are classified.
- (3) Number of passengers carried - divided so far as practicable between local and long distance, or inter-city traffic.

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- (4) Estimates of passenger miles in the case of each class of traffic (as this is the real measure of work done and provides an indication of average length of journey).

It should be possible to obtain (1), (2) and (3) from the operators of these vehicles, as these will probably be available in their records (at least in the case of the larger operators). If it is difficult to obtain suitable returns from the smaller operators they could be got from the larger operators only, and the results "grossed-up" on the basis of the total number of vehicles, to get figures on a national basis.

Estimates of passenger miles present more difficulty, but it should be possible for at least the larger operators - with knowledge of the basis of their fares and particulars of the numbers of passengers at various fares - to make a fairly reasonable estimate of passenger mileage.

Goods traffic

- (1) Number of goods vehicles in broad divisions according to either carrying capacity or unladen weight.
- (2) Vehicle miles run by vehicles in each division.
- (3) Estimates of tonnage carried per week or month by vehicles operating (a) within and (b) beyond a radius of say 25 miles.
- (4) Ton-mileage: corresponding estimates, either of average distance of transport, or of ton-mileage operated.

Item (1) should be obtainable from national statistics, and average figures of (2) from returns by the larger operators. Items (3) and (4) will probably present greater difficulty, and it may be necessary to carry out special investigations to obtain average figures of these for the purpose of formulating general estimates. This question is further referred to below in connexion with the difficulties experienced in the case of the United Kingdom.

Position of the United Kingdom in relation to road transport statistics

7. The present position of the United Kingdom as regards the availability of these statistics is as follows:-

Passenger traffic

Returns are obtained on a yearly basis from all operators of six or more public service passenger vehicles, and these are at present in process of being extended to comprise quarterly returns from all operators.

/The particulars

The particulars supplied in the present returns include the number of vehicles operated, vehicle mileage run, the number of passenger journeys (in certain main categories), and particulars of the operating receipts and expenditure. It is anticipated that information on similar lines will be supplied in respect of the concerns which come under the control of the recently established British Transport Commission.

8. While these comprise some of the basic particulars necessary to general assessment of the road passenger transport position, they are lacking in certain respects - particularly as regards the absence of any figures of passenger mileage. Efforts to obtain such figures in the past have been unsuccessful, but the importance of this information is recognized, and it is hoped to obtain estimates from at least certain of the larger operators in the future.

Goods traffic

9. The only statistical data hitherto obtained in the goods transport field has been that relating to the vehicles engaged. This is available on a national basis as a result of a vehicle census which is taken through the Taxation Authorities of all road vehicles which are licensed at any time during the September quarter of each year. This gives, in respect of goods vehicles, the numbers in various categories, in considerable detail as regards the various stages of unladen weight.

10. Statistics relating to the operational results of road goods vehicles are, however, almost entirely lacking - with the exception of certain four weekly returns recently instituted by the British Transport Commission in respect of their goods transport operations, which give the number of vehicles operated, the vehicle mileage run, and the tonnage of traffic handled: the number of vehicles operated by the Commission is, however, a very small proportion of the total goods vehicle fleet.

11. This general absence of operational information in the United Kingdom is largely the result of the relatively small size of the operational unit engaged in this industry, the wide variations in the nature of work done, and of the limited nature of the records kept by the average small operator. This has meant that, apart from the considerable work which would be involved in collecting periodical returns from a multitude of sources, no adequate records on a common basis existed to justify its being undertaken. It seems likely that similar conditions exist in other countries, and that this is probably the cause of the most serious gap in information relating to transport. /12. In order

12. In order to fill this gap in the case of the United Kingdom, an effort was made last year, by means of "statistical sampling", to obtain particulars of work done during a specimen week, by a representative sample of vehicles in various classes, as a basis for estimates relating to the general transport position.

13. This sample covered a relatively small proportion (about 1 per cent) of the total vehicle fleet, or approximately 6,600 **vehicles**; but the method of selection was designed to ensure, so far as possible, (1) that the total sample was distributed adequately amongst the various classes of vehicles as regards size and type of licence - being proportionately greatest where the total number of vehicles in the class was smallest, and (2) that the samples in each class were distributed in a strictly random manner, and might therefore be expected to represent a reasonably reliable cross-section of their particular class.

14. While estimates based on such a relatively small sample cannot attain the same accuracy as complete statistics, and must be regarded as subject to a considerable margin of error, it is felt that they afford valuable indications of the orders of magnitude involved. Further, the investigation disclosed some consistent results regarding the variations in the volume of work done by different classes and sizes of vehicle which are of interest as indications of the general lines which the collection and analysis of statistics should follow. This is illustrated by the following brief particulars of certain results of the investigation:-

Average capacity of vehicles with mileage run and
estimated ton-mileage during specimen week

	"A" licences			"B" licences			"C" licences		
	Carrying capacity (tons)	Average mileage	Average ton-mileage	Carrying capacity (tons)	Average mileage	Average ton-mileage	Carrying capacity (tons)	Average mileage	Average ton-mileage
12 cwts.	-	-	-	-	-	-	.3	188	25
12 cwts. 1 ton	.5	276	70	.5	242	50	.4	220	40
1 ton 2 tons	2.3	325	450	2.1	218	225	1.5	217	200
2 tons 2 1/2 tons	4.4	444	1,250	4.0	315	675	3.5	300	650
2 1/2 tons 3 "	5.4	494	1,750	5.9	429	1,050	4.5	381	1,050
3 " 5 "	7.1	573	2,750	6.1	405	1,450	6.1	388	1,375
5 "	12.7	615	4,650	11.3	502	2,900	9.5	428	2,250

The "A", "B" and "C" classification relates to the type of carrier's licence under which the vehicles operate; "A" licences covering any kind of road haulage without restriction, and "B" and "C" being licences subject to certain restrictions, mainly as regards the types of commodities which may be carried, the areas within which the vehicles may operate, or the concerns whose goods they may carry.

Calculations based on these figures suggest that the total ton mileage worked by road goods transport in the United Kingdom was now practically equal to that operated by the railways; this affords an instructive indication of the extent of the area of the transport field in respect of which no operational information is yet available.

15. It will be seen from the above table that the mileage run appears to increase steadily with the size of the vehicle, and the ton-mileage also but much more steeply, particularly in relation to the unladen weight of the vehicles. Further, that both the carrying capacity of vehicles of a given size and the mileage run is less in the case of vehicles whose operations are restricted, with the result that the ton-mileage worked by such vehicles would appear to be little over half that in the case of vehicles whose operations are unrestricted.

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16. These figures suggest strongly that, in the collection of statistics relating to road goods transport -

- (1) The greatest practicable sub-division of the statistics according to size of vehicle (either capacity or unladen weight) should be observed.
- (2) Statistics of vehicles operating in an unrestricted manner should be separated from those which are subject to some form of restriction.
- (3) On the question of the separation of statistics relating to distribution from those for other transport, the guidance afforded by the investigation was less definite, as, in the case of certain of the medium size classes, the dividing line between distributive and transport work was in many cases somewhat obscure. The figures suggested, however, that the bulk of the haulage done by vehicles of $2\frac{1}{2}$ tons unladen weight or over consisted of hauls of more than 25 miles.

Conclusion

17. In the light of its experience, the United Kingdom Government suggests that many countries may find it difficult, if not impracticable, to obtain comprehensive road transport statistics, particularly on such matters as tonnage carried and ton-mileage. These particulars are essential to any national assessment of the road transport industry. To obtain an adequate basis for these estimates, it is suggested that it will be necessary to have recourse to "statistical sampling". As this technique involves certain dangers which must be avoided if reasonably reliable results are to be obtained, it seems desirable that a common method of approach should be adopted to ensure that the results are broadly comparable among the member countries.

18. The United Kingdom Government therefore suggests the following procedure as a means of obtaining the necessary road transport statistics:

- (i) The Working Party of Statistical Experts of the Inland Transport Committee should meet to decide exactly what road transport statistics will be required and how frequently they will be wanted.
- (ii) The Working Party of Statistical Experts should then discuss and agree on the most satisfactory way to collect these statistics, i.e., whether the information should be collected vehicle by vehicle on total count of vehicles, or whether the information should be collected

/from returns

from returns completed by operators for all their vehicles, or by other means.

- (iii) The Working Party of Statistical Experts should then refer the problem to the Sub-Commission on Statistical Sampling so as to get its advice on the sampling procedure which should be adopted instead of making complete censuses.

The Sub-Commission on Statistical Sampling was appointed by the Statistical Commission of the United Nations Economic and Social Council in 1947. One of its purposes is

"To give special consideration to the use of Statistical Sampling.....

with a view to filling gaps in the information needed by the United Nations."

At its third session, the Statistical Commission asked the Sub-Commission to report on

"the use of sampling methods in such substantive fields as transport.....

It would therefore seem advisable to enlist the assistance of the Statistical Sampling Sub-Commission so as to establish regular periodical sampling surveys among the European countries. These surveys would be on common lines as regards information required, size of sample, etc., and would be confined in the first place to a few particulars as specified above, together with such information as would permit these particulars to be analysed according to size of vehicle and to their operation.
