Underground

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PUBLIC TRANSPORT IN BRITISH CITIES

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Modern life of the kind that we know in our western civilisation is founded on rapid and effective transportation of people and goods by mechanical means. We have been enabled to build up our great cities because of the canals, railroads and coastal shipping which linked them and the local transportation systems which made it possible for them to function by bringing the workers to their workplaces and dispersing them again to their homes. Our middle and smaller-sized towns depend today no less on mechanised transportation; the villages too are no longer selfsufficient but depend on transportation for their economic lives. The newer forms of transportation, the automobile, the freight truck, and the aircraft, have made this interdependence of all kinds of places even closer than it was in the age of steam.

In British cities, passenger transportation is provided by municipalities, companies (the shares in which are held either by members of the public or on behalf of the Government), British railways' suburban services and (in London alone) a nationalised i.e. a Federal Board. There are special cases where companies provide a City's services on behalf of a municipality, and there are a growing number of cities where one or more companies and the municipality have come together, often after initial competition, jointly to provide bus services. The London Transport Board is specifically required by statute both to pay its way and 'to provide or secure the provision of an adequate and properly co-ordinated system of passenger transport' for London. Outside London the Ministry of Transport's Traffic Commissioners, who must licence every company service, have the responsibility of ensuring that company operators provide where necessary a fair proportion of unremuner-

ative services so that some sections of the community are not left without buses. On the other hand the shareholders expect dividends and this imposes a financial duty. With some exceptions municipalities decide as a matter of policy the level of service to be provided, but the commercial aspect is always there and if the income is insufficient to meet the cost of providing the service while ensuring a reasonable return on the capital invested, the ratepayers are called upon to make good the loss.

The task of any passenger transport operator is therefore the same; to provide an adequate service and make it pay for itself.

Little more than a generation ago, the problem before the manager of a public passenger transport undertaking was to produce an adequate amount of transport not only to meet the ever-rising demand but, better still, to anticipate it. Populations of towns and cities were growing; people were living at greater distances from their work; they had increasing spare money to spend in leisure activities, in the evening and at weekends, away from their homes; and there was a supply of labour always willing to come forward and work in this relatively stable and secure occupation. In most parts of Britain - certainly in the south-east, which London dominates, in a transport sense - the sky was the limit; and the transport manager was judged simply by the speed with which he could climb up the rope whose top was so far away that it was out of sight.

Today it is different. People who wish to travel by public transport are declining in total numbers, and they are presenting themselves during fewer hours out of the 24, and on fewer days a week. An increasing number of them use their own motor cars and except for work and at holiday times, they leave their own homes and move about less than they did - their homes are pleasanter places to be in than they normally were a generation ago, and the theatre, the cinema, and the sporting arena are brought into the home by television. So the demand for public transport has changed, and at the same time the supply of labour to operate it has changed also. There is now no press of applications for jobs, largely because employment in a transport undertaking when compared with that in factories manufacturing consumer goods looks in several ways unattractive. Times have changed in this respect, too.

No, the sky is no longer the limit; but to say that public transport is on its way to the scrap-heap would be absurd. What has happened is that public transport has had limitations put on its scope in respect both of time and of classes of passenger. In time the optional journeys, in evenings or at weekends, are

shrinking in number and will shrink further; it is the peak hour traffic that remains and public transport must deal with it if cities are to continue to function at all. Apart from peak hour traffic, there will always be people who require public transport, those who have no car or cannot or prefer not to drive; children; and the old or disabled.

These remaining requirements are enough to ensure that communities will continue to need public transport systems, in cities and towns, and to link villages with them. What kind of public transport, and on what scale, will depend on public opinion and government, as modified by all sorts of local circumstances. In my view there is no question but that metropolitan cities will continue to require - or will need to initiate or develop - rail-borne public transport, preferably underground, for as long ahead as we can usefully conceive, and that road-borne public transport in these great congested areas will increasingly turn to the role of supplementing rail-borne systems, to meet demands where distances are too short or numbers of passengers too small to call for rail transits. At the other end of the scale, to provide links to rural areas or small towns, the road vehicel will take the place of the railway, where that has not happened already.

Having stated in broad terms the part that railways must play in public transportation, I propose to deal in this paper only with road transport, which is such an important and in many cases the only public service in local transportation. In the London Traffic Survey area out of every 100 journeys by people using transport, 46 are by private means, 35 by bus, 12 by underground and 7 by British Railways suburban services. The buses account for a very considerable slice of the whole; if the journeys to and from work only are taken, the proportion is higher - 39 per cent of the whole, higher than cars and rails. This only underlines that whatever form public transport will take in the future it is clear that the business which remains will be a good deal less remunerative than that which has gone. A massive amount of equipment and staff must be employed merely to ensure that a reasonably adequate service is provided for the two relatively short periods of peak hour traffic each day. We have yet to reach a position in our public relations and in our charging techniques from which we could successfully introduce a system of differential charging, to allow for the higher costs of peak operation, but this is something which we might have to consider in the future. The community will insist on such services being provided, and it will be for the community to decide how they are to be paid for - whether by the passengers alone and

unassisted through the fare box or by some other method involving public money. What the community will of course try to do is to have the service without facing up to the problems it involves but in the end it will have to.

These problems include the congestion of highways in cities and towns and even villages, due to the occupation of those highways by stationary motor cars. Congestion whether caused by parked vehicles, road works or just sheer volume of traffic prejudicially affects so many of the requirements of good road transport services; regularity, speed, safety and cost are all affected. The public transport operator cannot complain about the use of private cars provided that the users of these vehicles are prepared to park their vehicles off the highway and to pay the commercial cost of so doing. Similarly we are entitled to expect that the highway authorities will deal adequately with road works and make provision for the volume of traffic which is passing.

The restriction of the traffic carried by public transport operators both in passenger journeys and the hours in which they are made, the congestion of our roads, town planning decisions and the problems of meeting the cost of the services are all problems of our time which must be solved to ensure we have an efficient public transport service in the future.

But the services must be maintained, and if possible improved, while this uncomfortable period of decision and transition is being got through. This will call for all the skill that transport managers can produce - to run their businesses with all possible technical efficiency; to keep them commercially sound - though the rpofits will never look very splendid, when there are any at all; and to keep the problem of public transport in front of the community and the community's leaders in any way which is persistent, reasonable, and constructive. Perhaps it would be best to stop calling it a "problem" always: nobody loves problem children; but to keep on reminding everyone (especially those who never use it) what public transport is doing, day in and day out, to keep the nation going - better, to keep their own cities and businesses going.

We know what the passenger wants of us; these wants I have already summarised as frequency of service, regularity, speed, comfort, safety and a relatively cheap ride. Frequency of service must be related to the number of people who want to travel; but in new areas of development, notably in the new towns built near but separate from such large conurbations as London which we refer to as satellite towns, the low-density

of population being aimed at by the planners makes the operation of intensive public transportation a considerable problem. This arises from the apparent desire of everyone to have a house and garden of his own rather than an apartment; but one wonders whether it is necessary to have such large areas of open ground bewteen the comparatively small 'neighbourhood units'. Often, too, the only roads suitable for heavy vehicles are built round the perimeters of housing areas, so that buses fail to go to the heart of the area where they are needed and in addition because of the longer distance travelled the frequency must be reduced to half what it could be. This is where the town planners seem to need some teaching. This point is most important and I will return to it later on. Whatever they are planning, whether it be a whole new town, the redevelopment of a neighbourhood, or merely a new office building, consultation with the transportation authority at the outset is vital.

Regularity is a much more immediate problem. In Central London 77 per cent of all passenger journeys are now made by public transport; but the potential passenger expects to be able to know when he can leave home to reach his destination by a given time, and in the larger British cities this is becoming more and more difficult to achieve because of congestion on our roads. We are making some headway in convincing our highway authorities that the modern double-deck bus, with accommodation for anything up to 80 passengers must be given preferential treatment over the private car with an average of $1\frac{1}{2}$ persons. So far we have only been granted exemption from a few banned right turns (the equivalent of your left turn), but we hope eventually to be granted the use of special bus lanes where the number of buses using the road is large enough. Experience in your country has shown that this not only improves the speed and regularity of the bus services but also speeds up other traffic.

Speed will increase if these various proposals are adopted imaginatively and a solution is found to road congestion, but there are other ways in which we can operate a faster service and we must adopt these methods wherever possible. Limited stop bus services already exist, but there is room for expansion. We are also using market research methods to find out where people wish to travel and to alter services to meet the changing needs and habits of the community. If we can provide direct services for a higher proportion of the passengers, the overall speed of the passenger's journey can be quite substantially increased.

In Britain we have always tried to offer a high standard of comfort in our buses, and it has always been the policy of most operators to provide seats for the majority of passengers. We must continue to do this and resist the temptation to cut costs or increase the revenue earning capacity by skimping. But comfort does not end with a comfortable seat. A passenger's enjoyment of his journey can be seriously marred by a discourteous employee, by bad driving, lack of ventilation or heating, and by inadequate windows. The length of his wait and the conditions in which he must wait will also affect the overall comfort of his journey.

Our safety record is an excellent one, of which we are proud but not complacent. It has been established by good training and careful attention to regular maintenance and by constant vigilance to ensure that new safety measures are adopted as soon as they are perfected while avoiding novel developments which might jeopardise it.

We in Britain look across the Atlantic Ocean from time to time to see what is happening about public transport over here - and sometime we come to see for ourselves. Your economic developments have been up to now some years, ten or fifteen years, earlier than ours; and in the field of transportation we can learn from you what to expect in Britain ten or fifteen years ahead. Forgive me if I say that we do not like everything that we see coming, if your experience is going to be ours. The attempt to run a metropolitan city area virtually on automobile transportation makes us stop and think hard; it can perhaps teach us some lessons if we have the sense to take them in. But in one thing at least we must take encouragement - your Federal authorities have taken note of the vital character of public transportation.

In Britain, we who are engaged in the running of public transport are far too often faced with decisions about planning of land use which have been taken, in principle at any rate, before the professional transport man has a chance to put his point of view. He is always listened to politely, but usually when it is already too late. The community pays, by inferior or unnecessarily expensive transportation, ever afterwards. We congratulate you on the steps which are being taken in the United States to treat transportation and land-use planning as one operation, combined with financial assistance in approved cases for the public transport element.

Note The above paper was given to the annual meeting of the American Transit Association in New York on 22nd September 1964.

The electrification of all lines south of Harrow, and of the Uxbridge branch, had enabled the Metropolitan to dispose of the "rigid" stock - with the exception of some seventy vehicles retained for excursion trains and for working the Brill and Chesham branches - all the old "twin-carriages" and about half of the "Jubilee" stock. The remainder of the last-named was also placed in reserve, leaving the main-line services to be operated by the 1898-1900 "bogie" stock. Nine set-trains were then more than adequate to the requirements of the service operated, and it was clearly undesirable that carriages which had seen but five to seven years service should remain on the books as a non-productive asset, or be sold at a heavy loss. As the new saloon-stock was being worked very heavily, it was decided that the surplus "bogies" should be integrated in some manner with the electric services.

First proposed, in July 1905, was the conversion of two four-coach trains of "bogie" stock, each to be worked in the local service by a single 150 HP. B.W. saloon motor-car, with the underlying idea that the motor could be uncoupled at Harrow and the journey extended northward behind an ordinary steam locomotive. Alternatively they would provide useful electrically propelled units for emergency use on the Inner Circle. This duality of purpose necessitated the provision of full driving facilities in the erstwhile brake and luggage compartment, together with the B.W. nine-line through control cables and jumpers, and of the Westinghouse brake, with tripcocks, in addition to the existing automatic vacuum system. The driver's lookout was improved by the removal of the original, rather narrow, end-lights and intervening above-waist panelling, and the substitution of two very large lights, separated by a narrow vertical central rib and extending to the corner posts. Apparently the standard long buffers and screw-couplings were here retained, but at the distant end of the train a central buffer was provided for connection to the saloon motor-car. No direct reference to the identity of these coaches has been found, but it is reasonably certain that these sets were made up in the following way:-

In service	3DT	3T	1T	3T	3M	
late 1905	384	372	364	380	B.W. Saloon	) From series
early 1906	387	402	407	392	B.W. Saloon	) 1-56

Peculiarly, in view of the avowed purpose of the conversion, material was ordered for equipping these carriages with traction-voltage heating and lighting systems. Conceivably passengers could make-do with the heat stored south of Harrow as they continued

their journey under steam, but lighting would have been a very different thing! Yet if the existing systems were to be retained there would seem to have been little point in the provision of high-voltage alternatives.

Scarcely were these "semi-converted" sets, as they were later described, in service when a more ambitious scheme, for the conversion of additional stock into two self-propelled trains of eight coaches each, was adopted. The former brake-ended coaches were each equipped with four B.T-H. GE 69 200 HP. motors in standard Fox's pressed-steel bogies. The Westinghouse brake, standard for all multiple-unit stock, was adopted throughout. Considerable structural alteration was necessary to give the accommodation desired. The passenger compartments were reduced in number from five to four, and the extra space taken for a new double-doored luggage compartment, the original luggage space being taken up by the contactor gear, for which there was insufficient space below frames between the bogies. To provide adequate ventilation for the resistance banks, torpedo air extractors were provided in the roof while on each side a block of nine louvred panels was let in between waist and cant rails. Traction voltage lighting and heating - 120 volt units in series of five, controlled by local switches at each coach end - replaced the original equipment on both motor-coaches and trailers: every vehicle was provided also with B.T-H. 10-wire control, compressor, and train lines on both Up and Down sides, making all the coaches completely interchangeable. To facilitate the electrical installation, and to improve maintenance access to the motors, the underframes of the new motor-coaches were also modified, the usual diagonal braces to the headstocks being replaced by members parallel to the sole-bars.

In the event, these sets were at first made up to only seven carriages each, and the last pair of vehicles was not converted until 1907. The twenty-four vehicles involved in these conversions had been derived from the four block trains Nos. 373, 376, 397 & 398; conventionally so-described from the numbering of the respective brake-second carriages. It will be seen that the late-comers, coaches Nos. 373 and 381, were originally brake-ended, and had to be reconstructed as full seven-compartment vehicles, which probably accounts for the delay. They were not missed owing to the extreme brevity of certain underground platforms; Marlborough Road, 210 ft. and Gower Street (Euston Square from 1st November 1909) 236 ft. long, were notable. It would seem that the guard was conveyed, faute de mieux, in the rear cab: at these very short platforms he would have found himself facing the tunnel wall! Moreover this isolated position prevented him from sorting packages en route,

with resultant delays in station working. The difficulty was met by appropriating the passenger compartment adjacent the luggage-locker, and knocking out the intervening partition and seating. The arrangement has been much criticised in recent years on the ground that less than half the coach length was available for passenger accommodation. This is undeniable, and was in fact recognised at the time of the conversion, but whether the latter-day critics could have done better in the light of the financial and technical limitations prevalent forty years earlier is at least open to question.

The composition of these sets was as follows:-

In service	3M	3T	(3T)	3/1T	1T	1/3T	3T	3M
1906	376	369	(373)	412	361	365	377	397
1906	388	393	(381)	413	408	368	403	398

The arrangement was typical only, as like-for-like interchange was possible. The 1907 vehicles are shown in parentheses, their physical incorporation at this period is highly questionable, and they were probably held as spares.

We now regress, slightly, to July 1906, when it was reported to the board that the two "semi-converted" sets had seen comparatively little service since their introduction. The weight of these sets had proved too much for the 150 HP. motor-cars' accelerative powers and with stops at all stations in the congested inner area, time had been lost. It was decided that by providing B.T-H. control gear in lieu of the B.W. equipment and substituting a 200 HP. B.T-H. motor-car, this difficulty could be overcome. The change was made, with much-improved operation.

The 1907 traffic agreement with the District, which strained Metropolitan motive-power resources to the utmost, compelled further changes. To release the two B.T-H. motor-cars for service elsewhere it was decided that the two "semi-converted" sets should be re-formed, suitably modified, with four additional coaches, making two self-contained six-coach electric trains.

The two existing driving-trailers, together with the two Wembley Park experimental motor-coaches - stored since 1900 - were modified on the lines of the 200 HP. B.T-H. conversions of 1906. The bodies were not quite identical, for whereas on the B.T-H. coaches the drivers' cab doors were symmetrically arranged, that on the driver's side being set further back, corresponding with the original position of the guard's door under steam operation, on these latest coaches to be modified they were both set well forward, with a narrow panel, only, between door-frame and corner-

post. B.W. 150 HP. equipments from store (originally ordered for two of the spare saloon motor-cars, wherein they were replaced by B.T-H. apparatus) provided the motive power. The trains were completed by the inclusion of the two 1907-reconstructed third-class trailers mentioned above.

At this time the "semi-converted" coaches would have been divested of the vacuum brake, steam heating, and Stone's lighting equipment. Whereas, however, the motor coaches were wired out for Westinghouse control, with that firm's nine-point receptacles on both sides, the original trailers retained their train lines, B.T-H. type control cables and ten-point receptacles (on the Up side only) special jumper cables, suitably connected, being used between trailers and motor-coaches. The two 1907 conversions, however, had train, pump, and B.T-H. control lines on both Up and Down sides already, and these were all retained. The batteries which originally fed the Westinghouse low-voltage control circuits were currently in course of supersession by motor-generators, and such were provided in these new six-coach sets.

The formation of these sets now became:-

In service	3M	3T	3T	1T	3T	3M
1908	418'	372	373"	364	380	384*
1908	417'	392	381"	407	402	387*

' Experimental motor-coaches of 1899.
" Ex B.T-H. trains - 1907 conversions.
* Former driving-trailers.

All these coaches, when newly converted, received the currently fashionable stained-teak livery with cream waist and cant-rail panels, but after 1910 the first major overhaul was the cue for the restoration of the "golden" teak finish. On these converted vehicles, only, the intermediate arm-rests of the first-class compartments had been screwed up to provide five-a-side seating, but in 1915, as a contribution to the war-effort, this accommodation was once more rated at four-a-side.

These sets worked almost exclusively in the Baker Street-Uxbridge service, with rush-hour trips to the City after the re-opening to passenger traffic of the Baker Street junction. In 1932 the Westinghouse sets were reduced to four coaches each for use on the newly-opened Stanmore branch. Concurrently, the two third-class trailers, Nos. 373 and 381, were taken to augment the two B.T-H. sets; successive programmes of platform lengthening permitted this use of eight-coach trains without difficulty.

Under the L.P.T.B. these coaches were re-numbered as follows:-

361	9700	376	2764	392	9754	407	9703
364	9701	377	9751	393	9755	408	9704
365	9746	380	9752	397	2766	412	9705'
368	9702'	381	9753	398	2767	413	9747
369	9748	384	2760	402	9756	417	2762
372	9749	387	2761	403	9757	418	2763
373	9750	388	2765				

' Nos. 368 & 412 originally composites, converted to first-class by 1931.

Displaced in 1938-9 by the new L.P.T.B. flaired-skirted "P" stock, most of these coaches, after being held out-of-service as war-reserve stock, were withdrawn in 1945-6, but some, again re-numbered into the steam-stock (51x) series in 1941, were retained to work the Chesham shuttle service until the electrification of the branch in 1961.

THE NORTHERN CITY LINE by J.E.Echlin

The weekend of the 3rd/4th October 1964 was an important milestone in the history of this line. As from 8 p.m. on Saturday the 3rd no trains have run north of Drayton Park, to enable the Civil Engineer to have occupation of the tunnels in connection with the construction of the Victoria Line.

The second item was the replacement of 61 1923 tube stock cars by 28 1931-34 stock. The old stock was assembled at Drayton Park, with two 6-car trains at Moorgate, the entire stock being made up into 9 x 6 + 1 x 7 formations prior to being moved to Highbury Vale sidings on the Eastern Region. The work started at 2 a.m. on Sunday 4th, finishing at 8 p.m. that day.

During the previous week 3 of the new sets were transferred from West Ruislip to Highgate Depot, and another set was transferred from Morden to Highgate. The 3 remaining sets travelled from West Ruislip to Highgate during the Sunday.

Trains were worked to and from Highgate Depot with match wagons and brake vans at each end, the latter provided by E.R. Two E.R. Diesel locos were used for the trips, with one to help with shunting at Highgate Woods sidings. Eight of the old trains worked under their own power to West Ruislip on the Sunday whilst the remaining 2 did so during the following week. Their route was as follows: Finchley Central (reverse) - East Finchley - Kings Cross Loop (Piccadilly Line) - Acton Town - Ealing Broadway - White City (reverse) - West Ruislip.

The new service is provided by 6 4-car sets with 1 set spare.

Dear Sir, 7th October 1964

I am surprised to see the attitude adopted in your reporting of the new L.T. Winter services (October journal). Whilst nobody would deny that cuts in services are regrettable, account must be taken of the reasons and (in the present situation) the necessity for them.

As you suggested (but without much apparent conviction) the cuts in services are dictated by the present shortage of staff. I realise that this is the reason which is always given for cuts, and that many people now regard this as an excuse rather than a reason, but as an employee of the L.T.B. I can fully testify to the authenticity of the reason in this case. As all users of the Underground will know, numerous trains have to be cancelled every day (in the off-peak periods as well as the peaks incidetally), and in the majority of cases this is because no guard is available. With such a system in operation nobody knows from day to day which trains will run and which will not, with the result that much bad feeling is generated amongst the travelling public - similar to that which is now prevalent against the London bus services, but (at the moment) to a lesser degree. It was in an attempt to prevent the Underground situation from degenerating into one like that on the buses that the new timetables were prepared, for surely any passenger would prefer slight reductions in the service (and they are very slight indeed, with only one or two trains per line cancelled during each peak period) knowing that the same trains will run each day, to a theoretically fuller timetable which in fact varies from day to day.

There are two points about the reductions themselves which throw a completely different light upon the new services from what is implied in your report. As far as the cuts in the Bakerloo service to Watford are concerned, it is important to realise that they are matched by a corresponding increase in L.M.R. trains between Queens Park and Watford, most of which connect with L.T. trains at Queens Park. I also feel bound to point out that as far as L.T. is concerned, any reduction of trains on the Watford service is of distinct operational advantage. The depot at Croxley Green (which is shared with the L.M.R., although the latter provides all the depot staff) is a constant headache when trying to provide a satisfactory service of Bakerloo trains to Watford, and the Trainmen's depot at Croxley has always been a similar nightmare. In addition to this, the length of the total run (including layovers) from Queens Park to Watford and back causes great difficulty in the compilation of trainmen's duty sheets.

My second point about the reductions concerns the District trains to Hounslow. In recent years the number of these trains has dwindled to just three or four in each Monday to Friday peak, and I am sure that nobody can seriously suggest that their demise will be any great loss to the travelling public. They were always very lightly loaded west of Hammersmith, and because of the stops made by these trains between that station and Acton Town, most passengers change to the faster Piccadilly trains at Hammersmith. It is also interesting to note that with this new timetable no Piccadilly trains will in future stable in Ealing Common Depot, and no District trains will stable in Northfields depot.

I hope that I have enabled many of your readers to see the new services (which at the moment have little prospect of coming into operation in any case) in their true light, without the unnecessary prejudice which was obvious in your own account.

Yours faithfully,

D. Willis.

9 Wellington Avenue,
Hounslow,
Middlesex.

31st October, 1964

Sir,

I was interested to read in Mr Jackson's article on 'Crime on the Underground' a reference to the 1935 film 'Bulldog Jack'. This was a parody of Bulldog Drummond, with some of the main scenes in a disused tube station under the British Museum, and much of the humour stands up today, even if the train that carries all concerned to the climax is rather lacking in authenticity.

As regards train murders on the Underground, I believe a woman was murdered on a Metropolitan train between Finchley Road and Wembley Park during the last war: her assailant escaping at the latter station.

Incidentally 'Bulldog Jack' has been shown once or twice in recent years at the National Film Theatre, and I believe a 16 mm copy is available for hire.

Yours faithfully,

Richard Graham.

26 Brynllwyd,
Caernarvon Road,
Bangor.

1st November 1964

Dear Mr. Davis,

With regard to Mr Brown's letter in Underground of Nov. 1964 I would disagree with him on several points, but I beg to take issue with him on one particular point. He says, "Since private commuter traffic is simultaneously at its peak, greater confusion and congestion would obviously occur on L.T. services at these times if private traffic were then prohibited from travelling in Central London".

Taking the statistics for road traffic entering Central London between 7.00 am and 10.00 am in July 1963, 5,200 L.T. public service vehicles carried 214,500 passengers, whereas a total of 89,500 private passenger vehicles carried 120,000 passengers.

If all private passenger vehicles were banned in Central London then the displaced passengers could be carried by 3,000 public service vehicles, assuming an average vehicle loading of 40 passengers during the peak hour.

Thus the whole of the road commuter traffic could be carried into Central London between 7.00 am and 10.00 am with a reduction of 86,500 vehicles.

It was conceded in the Buchanan report that buses should be given priority over private traffic.

Twice as many rush hour commuters enter Central London by London's railways as by road.

57, Shooters Ave.,
Kenton,
Harrow,
Middlesex.

Yours sincerely

V.A.E. Fountain.

Dear Sir,

To "Bury the Ashes"

While unable to shed further light on Mr Cull's original query, the "Gent with the fungus round his Metropolitan chops" would like to comment on Mr Gooch's letter (November 1964).

The original Bogie stock set trains were close coupled in blocks of six, each coach carried 10" side buffers and single slotted-link couplings, save that the outer ends of each set had the standard 1'9" buffers and the more usual hook & screw shackle.

Some of this stock was reformed in 1906-8 as multiple-unit sets, and to facilitate the interchange of the motor-coaches (mostly ex-brake vehicles) long (1'9") buffers were fitted to the inner ends of these, and to the adjacent ends of the trailers, together with hooks and screw-shackles.

In 1940 the Chesham shuttle sets were formed, each of an ex-motor coach, a composite trailer and a driving trailer. The composites had short (10") buffers at each end and the motor coaches long (1'9") buffers. There was no further necessity for the screw coupling, for which was substituted a slotted link longer then the standard article; the draw-bar on the ex-motor was varied to suit, and the necessity to change back to short buffers thus avoided.

It will be seen that what Mr Gooch referred to as being very close coupled when the wrong combination got together was, in fact, the normal state of things, while the length of the headstock - a transverse member - has no bearing on the closeness of the coupling. All these underframes were identical in length and variations in the overall length were solely owing to the type of buffers fitted. I trust Mr Gooch will pardon this correction.

66, Hare Lane,
Claygate,
Surrey

Yours faithfully,

K. Benest.

BOOK NOTES

A few copies have become available of the standard work by W.H. Bett, "The Theory of Fare Collection on Railways and Tramways". This offer is made available through the courtesy of the Electric Railway Society at the very reasonable price of 5/-. This book was published in 1945 and comprises 64 pp. plus 11 plates and index and is in cloth covers. Copies may be ordered at the above price from the General Sales Manager, J.A.S. Milne, Cherrywood, Peterley, Great Missenden, Bucks. This book is good value for money.

The following books have been received and will be reviewed in future issues of UndergrounD but in the meantime readers may like to know, with Christmas shopping in view, that they can all be recommended and are obtainable from the General Sales Manager at the above address. All books are post free and orders should be accompanied by the appropriate remittance.

H.P. White; "A Regional History of the Railways of Great Britain"; Vol 2 Southern England; price 35/-.

David L. Thomson and David L. Sinclair; "The Glasgow Subway" price 7/6.

E.W.Fenton (Editor); "A Portfolio of Railway Notices" Price £2-2-0.

SOCIETY NOTICES

Subscriptions 1965 Members are reminded that annual subscriptions to the Society fall due on the 1 January. The rates for 1965 will remain the same as for the current year, viz. Members 15/-, Associate Members 7/6. Payments should be made to the Registrar, R.E.Labrum, 134 Cranley Drive, Ilford, Essex.

UndergrounD With the January 1965 issue, Vol. 4 of the Society Journal commences, and this will also be the first issue to be reproduced in photo-litho. It is hoped that the new production method will permit a greater variety of content, but to some extent finance will be a limiting factor. Photo-litho reproduction of text matter will be a great deal more expensive than the present system of duplicating; the inclusion of maps, photographs and drawings will increase the cost still further - so readers must not expect too many illustrations at the start of the new volume. An increase of the Society's membership would help considerably on costs, and this is something all members can assist in - please introduce new members and help us to expand.

1965 Programme This is in the course of planning now by the Committee and should be full of interest. The first meeting in the New Year will be on Friday 8 January. Place and Subject to be announced next month.

24 - Hour Clock With effect from the January issue the 24 hour clock will be used in the Journal in every case except where quotations are being made from other publications or where authors of articles particularly indicate that they would prefer the old am and pm timings to be used. This is being done to bring the Journal into line with current L.T. practice.

Binding Service Through the courtesy of the Electric Railway Society, a binding service for UndergrounD will be available early in the New Year. Details will be announced later, but this advance notice is given so that members may get their copies together ready to be bound, and to give them a chance to replace any missing issues. Back numbers may be obtained from the Registrar at the address given under "Subscriptions" above.

THE TIMETABLE

Friday 11 December 7 pm. Meeting Room, Kensington Central Library, Campden Hill Road. Informal Meeting and Slide Show; Norman Fuller will be showing some of his excellent colour slides and everyone is welcome.

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