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# ROADS AND ROAD TRANSPORT

## HISTORY CONFERENCE NEWSLETTER

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February 1999

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### Setting the World a-gadding !

A writer in 1836 complained bitterly upon the arrival of the first passenger trains at Crewe. " I forsee what the effect will be - it will set the world a-gadding. Twenty miles an hour! Why, you will not be able to keep an apprentice boy at work; every Saturday evening he must take a trip to spend the Sabbath with his sweetheart. Grave plodding citizens will be flying about like comets. All local attractions will be at an end."

It would seem from the speed at which omnibus links to the Crewe trains were set up, that the world was only too keen to become mobile. The railway may have killed off the trunk stagecoach routes, but the local road networks were soon stimulated, providing feeder facilities, both for goods and passenger traffic.

It is the period from 1830-1900 which needs some research as to the extent of coach and omnibus services (horse drawn) in town and country. Almost every town had a horse drawn passenger service of some kind, and in general it is only those places which had horse drawn tramways that have spawned written history and detailed documentation, partly because horse tramways had to be set up within a legal framework, with Acts of Parliament and other detailed and easily (?) accessed material.

## CONFERENCE MATTERS

September 19th 1998

### 14th BUSINESS MEETING

The 14th Business Meeting was held at the Museum of British Road Transport Coventry on 19th September. Chairman Professor John Hibbs opened the proceedings by commenting that the Conference was now in its seventh year and could congratulate itself on work well done.

He went on to report on the Chartered Institute of Transport Library. Although the management of this library is still not sure how best to deal with its collection of historical periodicals, he was certain that the collection will be defended, and he stressed that all visitors are welcome to the Library in Great Portland Street.

Professor Hibbs felt that the problem of the CIT Library was now a lesser concern, and drew attention to what he considered a major problem which was about to come, that of computer held records and the "Millennium Bug." He felt that in the interests of historical research, the Conference should alert its members, both Corporate and Associate, to the need to ensure that all records currently held on computers should be transferred to hard copy. The problem was a complex one, involving all types of devices containing microchips. Old computers and old software were an obvious area for concern, but modern computers said to be millennium proof could still be affected by outside problems with public utilities. Anything of importance held only on computer should be transferred to a paper record.

The Chairman next raised the matter of the forthcoming Colloquium, and spoke of the need for a good bibliography of books solely concerned with the history of roads. Ian Yearsley drew attention to the fact that the National Tramway Museum Library at Crich holds a number of books on the subject. Others mentioned individual titles, and Professor Hibbs asked if he could be provided with a list of suggestions so that he could draw up a bibliography for distribution to those attending the Colloquium.

It was then the turn of Professor John Armstrong to give a report of progress made by the Working Party for the proposed history of the road freight industry. Although writers have not yet been asked to start work, much progress had been made with the general planning and proposed headings, and an initial meeting had been held with officers from the Science Museum, with a view to that body being involved as publisher for the intended work. There

was a possibility that the Museum would lend its support, and a response was due imminently.

Next, there was a discussion concerning what format should be adopted at the 1999 Symposium, which the Conference proposed to hold on the subject of research. Various ideas were put forward, one that invited speakers should give short keynote speeches, to be followed by "workshop" sessions at different desks. Another suggestion was that the Corporate Members should each send a speaker to briefly outline the facilities they offered for research. It was decided that a meeting of the Steering Committee should be convened to consider the best way to organise this event. It was resolved that the date should be the 16th October 1999, and the venue should be Coventry, rather than York, as had previously been proposed. See also page 5.

Ron Phillips reported on the Newsletter, and Ian Yearsley on reaearch matters. One important task recently completed by Ian was an index with over 30,000 entries of items contained in some 40 journals on the subject of urban road transport, covering the period from 1880 to 1940. Copies of this index have been lodged with the Nat6ional Tramway Museum, London Transport Museum, and one is shortly to be placed in the National Railway Museum at York.

L.Gordon Reed raised ther matter of the FTA, and its influence over Government legislation in the three Acts passed in 1966,1967,and 1968. He felt that this fact should be documented whilst those involved were still alive. Mention was also made of the sociology of passenger transport, an issue which was to be raised in the afternoon in a presentation by Roger Atkinson. The morning session concluded with a resololution to hold the next Business Meeting and Conference AGM on Saturday, 27th February 1999. The Chairman expressed the sincere thanks of the Conference to the MBRT for continuing to be host to our meetings.

In the afternoon, Professor John Hibbs read a short paper on the subject of the Regional Traffic Commissioners, Ron Phillips spoke on the subject of the necessity or otherwise of the lowbridge bus, and Roger Atkinson concluded the session with a well observed and amusing presentation on a current sociological issue concerning public transport. These are all alluded to elsewhere this edition of the Newsletter.

**Q. Which is the most common make of heavy goods vehicle on British roads today?**

**A. Turn to page 13 of this Newsletter.**

October 14th 1998

## 2nd COLLOQUIUM Aspects of Road History

The Conference held its Second Colloquium at the Museum of British Road Transport, Coventry, on Wednesday October 14th. The chosen subject was the history of roads, and delegates heard and discussed four papers on distinct aspects of road construction and technology. Much was explained, and many new questions posed, perhaps for future discussion.

The Chairman, Professor John Hibbs, opened proceedings with a short address of welcome to the speakers and delegates, with apt references to William Wordsworth and Charles F. Klapper, both of whom had referred to roads and highways in their work. The lesser widely known of the two had defined a highway as "a path for passing and repassing of the citizens for their business or pleasure". It was indeed for our pleasure and edification that we then heard the four speakers on their chosen subjects.

Roger Cragg opened proceedings with a talk on the history of road making. He pointed out that today the three requirements for a good road are:

- a smooth, non-skid surface
- a waterproof surface
- a design which spreads wheel load

After the introduction of the wheel in Europe in approx 1500 B.C., log pavements were adopted in certain marshy locations. Where possible, routes followed high (i.e. the driest) ground. The Romans were the first to construct roads with stone surfaces, although they did not use a standardised form of construction. They were aware of the importance of good drainage, and built many roadways above the level of the surrounding ground. (This was of military advantage as well.) In Britain the Romans had developed a network of 8,000 miles of road before they departed in 410 A.D. There then followed a period of some 1300 years during which the art of roadbuilding was lost.

About 1750, there was renewed interest shown in road construction, and three very similar systems were developed by two Britons and a Frenchman, Pierre Tresaguet. The former were John Telford, who also is famed for engineering, and McAdam, more an observer and pragmatist, who devised a simple and successful method of surfacing roads which made his name famous throughout the world. (Of him, more was said by our third speaker). Telford was notable in laying down the rules for both the construction and the repair of highways.

Roman and eighteenth century roads were made of various layers of stone, with the largest stones at the bottom. The separate layers were compacted to

form a waterproof and smooth path. Keeping the subsoil dry was very important, and side ditches and drainage channels were also part of the roadbuilders task. In towns, of course (and on some Roman roads) stone slabs or interlocking dressed stones (setts) were placed on top of the road bed.

The opening of the Liverpool-Manchester Rly (1830) gave a further impetus to road building, but the main form of traction remained the horse. It was the widespread introduction of the motor vehicle on pneumatic tyres which caused the next surge in road building and the search for a better surface. The tyres of early cars tended to throw up stones and the speed of passage raised clouds of dust (i.e. road surface). A "glue" for the top layer of stones was found in a by-product of the coal gas industry - tar, and later by a by-product of the oil industry - bitumen. Both these substances are viscous when heated, so they act as a lubricant to stones when laid, and when the stones are rolled. They then form an elastic and waterproof coat for the top surface.

Roger then turned to modern examples of the application of scientific method to road building. He discussed the road trials at Alconbury Hill (A1) in the sixties, modern ways of calculating road life, based on the number of axles likely to pass, and the merits of concrete against tarmac as a top surface. He also pointed out the different effects the speed of vehicles has on a roadway. Delegates then raised a number of issues, which included the merits or otherwise of cobbles or setts as a road pavement, rutting in the slow lanes of motorways, and damage to road surfaces caused by the braking of heavy vehicles.

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### Concrete and Cabbages

One of the remarkable things about the change-over from trams to trolleybuses in Singapore was the agreement with the local highway authorities to re-construct the roads with suitable foundations and smooth surfaces to permit the trolleybuses to run successfully. Many early bus and trolleybus systems were forced to give up because the vehicles cut up the road surfaces and damaged underground pipes or cables.

The Singapore authorities were worried in particular about rutting, fearing that the heavy solid tyred trackless trolleybuses would cut tracks in the roads, because of their regular pattern of running. In its 1927 report, the highway authority recognised the need for "substantial roads, with smooth durable surfaces" and stressed the importance of dealing with underground services, and the provision of adequate foundations.

Another hazard to be dealt with was that of the street vendors, who during the cabbage season were wont to strip off the outer leaves of their wares and throw them into the carriageway. These leaves would become compressed by the solid tyred trolleybuses, producing a greasy surface likely to cause skidding.

Ian Yearsley next gave a presentation entitled 'Rolling Friction - Road and Rail Surfaces'. He took us to London, using maps and overlays to show that horse drawn trams and horse drawn buses operated in different sectors of the metropolis. Before looking at why this might be, he discussed the known facts regarding the costs of operation of each type. Each horse bus required an establishment of 11 horses, whose capital cost exceeded that of a new bus. The horses required frequent replacement, but the bus was expected to have a life of 30 years, and carried an average of 27 passengers. The horse trams (average capacity 46) required a similar establishment of horses, but the horses lived for slightly less time than their bus counterparts. (The London General knew this, as they provided animals for their own buses and the North Metropolitan trams.)

He discussed why this should be, when it was known that steel wheels on rails caused less friction than iron shod wheels on the road surfaces of the day. He opined that the answer lay in the effort required to start the car moving, and pointed out that horse trams stopped more frequently. It was also revealed surfaces on the roads of London in the latter half of the nineteenth century would not necessarily have been unsmooth, as many streets were paved with wood (some had a mixture of sand and bitumen, known as 'sand sheet'). Another overlay compared the horse bus routes and streets paved with wood blocks. He also spoke of the Paris tramway line which experimented by removing the flanges on most of the car wheels to reduce resistance, and showed that in the early days of tramways, much resistance was caused by grit from various sources lodging in the rails.

Other matters touched upon were gauge of tram rails, which carters used as an aid to smoother progress, and the Cart Tracks (lines made of smooth granite slabs), of which the most notable example was that in the Commercial Road. Mention was also made of road camber, which could be an added hazard to the operation of double deck buses. Ian concluded by pointing out that London road surfaces of the period in question required further research before some of the ideas he had expressed could be proved as probable rather than possible.

Delegates now raised various pertinent issues. The design of horse shoes varied greatly depending on the work expected of the animals. Shoes with anti skid devices or materials were widely used. Graham Boyes pointed out that the Commercial Road Stoneway had been built under powers of an Act of Parliament of 1828. He, and others, confirmed that wood street paving blocks were introduced in many towns to reduce traffic noise, and that there was

slipperiness in wet weather. In very wet conditions the wood expanded and caused unforeseen problems, such as, in later days, the distortion of the tramway conduit slot.

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### Horse Buses in London

.....an effect of the Boer War was the requisitioning in 1899 of selected horses for service in South Africa. The Road Car Company reported "some dislocation in the car service has necessarily arisen, which will be at an end as soon as the newly purchased horses are fit to work." At the time the company had 5,013 horses for 437 pair-horse cars and two single horse cars, while the London General Omnibus Company owned some 14,000 horses and 1,300 buses.

.....an unusual type of bus, introduced by Andrews, had the springs outside the four wheels, which were painted red instead of the almost universal yellow; the wheels were so placed to enable the bus to use the tramway tracks and to some extent avoid the rough roads of the day.

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After lunch, Brenda Buchanan of the University of Bath asked the question "John Loudon McAdam - The Colossus of Roads?"

It was pointed out that J. L. McAdam only engaged in active promotion of road building in the latter part of his long life (he died in his 81st year). Born in Ayrshire, he spent significant periods of his life in America and the West of England, and it was here that he influenced the construction and repair of turnpike roads in the Bristol and Bath area. Before this, however, he had become interested in roads, covering, between 1789 and 1814, an estimated 30,000 miles in Britain). When he died in his native Scotland, his obituary was to state that his chief reward would be that of having added a word to the English language (as current in 1998 as it was in 1837).

It was McAdam and his family, in particular his son Sir James McAdam, who were responsible for the laying down of good surfaces on many of the major roads of the time. Sir James was appointed to many of the metropolitan toll road trusts, and was also the surveyor of numerous radial roads leading north, west, and east from London. It was he who was drawn in caricature as the "Colossus of Roads", and he who could be said to have been a professional road builder. His father "was very conscious of himself as a gentleman", and made no great fortune.

In 1816 McAdam had published his theories (originally presented to parliament) under the title "Remarks on the Present System of Roadmaking" It had run to nine editions by 1827 and was widely disseminated. Although his system appears simple and cheap, McAdam insisted on the important particu-

lars such as the precise size of the stones, their configuration, and their method of being broken (the stone chopper was to crouch, not stand)

In his later years McAdam achieved a minor ambition in being appointed surveyor to the Bath Turnpike Trust. He was responsible for the re-routing of the last stretch of the Great West Road (A4) before Bath. Dr. Buchanan showed various slides illustrating aspects of the road across the downs, which was re-routed away from exposed high ground to more sheltered locations with easier gradients. There were illustrations and references to items of roadside furniture such as mileposts, finger posts and pumps. The latter were a means to fill watering carts to lay dust as well as to help compact the surface.

An informative and well received presentation, it was praised by a number of delegates, one of whom lived along the Great West Road, and who stated that he would look in future with new appreciation at the highway.

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### Roman Roads

Major Roman roads were designed to cope with the heavy wheeled and hooped traffic of the day. A sound foundation was essential, and this usually began with large stones embedded in the subsoil. Where the site was poorly drained or low-lying, more support could be gained by driving in piles.

Above the foundations a series of layers of rammed gravel made up the surfacing though this could be augmented with stone if it was available. Drainage was vital if the road was to be able to cope with traffic and the elements, and this was why the road was raised, with side ditches to carry the water off the verges. The whole effect is rather hard to appreciate in Britain today, apart from a few exceptional sites, such as Ackling Dyke in Dorset. Much more impressive are the roads in North Africa, Tunisia in particular, where modern road surfaces form no more than a thin central veneer on an otherwise unaltered Roman road.

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The final presentation was Richard Storey's account of the British Road Federation, an association of many different groups - vehicle makers, road users both commercial and private - in fact a very mixed group of lobbyists seeking the improvement of roads for many different reasons. The roots of the BRF were an association of cyclists founded in 1886 and calling itself the Road Improvement Association. At the time, they were the equivalent of today's private motorists.

One hundred years or more later, the BRF is a body with a much more important membership, but still seeking the same general aim, but whereas in 1886 the need to improve roads was inarguable and the need for new road building not very controversial, today

the picture is different. Richard painted a picture of constantly shifting ground over the years, charting the dates when key members joined and the issues of the various decades, some long forgotten, others that are forever present. An example of the latter is congestion, and it was sobering to learn that only two countries in the world suffer from interurban congestion, namely Britain and Spain.

It was fitting that Richard's contribution was concluded with some remarks from a delegate who represented the BRF.

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### Extracts

1 **CONCRETE AND CABBAGES**

Singapore, History of its Trams, Trolleybuses & Buses. by F.W. York & A.R. Phillips (DTS Publishing, 1996)

2 **HORSE BUSES IN LONDON**

by Herbert J. Reinohl (Buses Annual 1965, Ian Allan)

3 **ROMAN ROADS**

The Buildings of Roman Britain

by Guy de la Bedoyere (Batsford, 1991)

## STEERING COMMITTEE MEETING

January 20th 1999

### "Getting into Research"

At a meeting in Birmingham on January 20th, the Steering Committee discussed the possible form of the next Symposium. The date was to be arranged for a Saturday in October, and the chosen venue Coventry. The theme was to be the most effective way of starting to research a chosen topic.

It was thought best to have a morning session with two presentations, followed by discussion time, and an afternoon session of several shorter items, with discussion time, and perhaps some time for delegates to speak individually with speakers at the end. It was also decided to have some displays of what our various corporate members have in the form of records, as well as some information of what is held at certain libraries and collections.

Full details of the speakers, the topics to be covered etc. will be announced at the A.G.M./Business Meeting to be held on Saturday 27th February 1999, and will be circulated to those present, and will in addition be circulated with this edition of the Newsletter when dispatched by post.

Some aspects of research will also be discussed in the afternoon session of the February meeting, when those present will have the opportunity to discuss an aspect of nineteenth century transport - the horse drawn omnibus.

# Co-operative Transport

1 - The London Co-op Fleet  
35 years ago

In 1964, the London Co-operative Society had a fleet of 2,889 motor vehicles serving a densely populated and heavily congested area, with 117 dairies, bakeries and coal depots each having its own fleet of delivery vehicles. Of the fleet, 1750 were battery powered short-range vehicles, and 600 were light (5 cwt - 1 ton) vans. The actual fleet breakdown was:

Electric vehicles	1750
Petrol powered	819
Diesel powered	381

This gives a total of 2950, greater than the first figure quoted, which is assumed to be the number of vehicles required for daily service.

The internal-combustion engined fleet was made up of the following types:

5cwt -1ton vans	600
1ton-3ton	287
4ton-6ton	111
over 6ton	33
prime movers	68
coaches	9
funeral fleet	63
tankers	29

The makes of vehicles used included tankers on Scammel chassis, diesel driven lorries on Commer, Ford, AEC and Albion chassis, petrol driven lorries and vans on Bedford (5tons) Karrier (30cwt) and Morris (25cwt) chassis, Ford and Volkswagen light vans, Daimler and Austin limousines and hearses, and Guy mobile shops. There were also some private cars.

To service this diverse fleet, thirteen depots were established at the following locations.

Depot	Staff	Vehicles
Willesden	13	285
Nursery Lane	22	427
Ealing	11	254
Parsons Green	11	208
Yiewsley	12	175
Romford	19	367
Southend	16	309
Oakthorpe	26	488
Manor Park	16	362
Essex	43	
Central	9	
Cambridge	2	
Buckingham &	2	28 tankers

The first nine depots were responsible for general vehicle maintenance, but extensive body repairs and re-painting were done by a central depot responsible for coach building. In the year 1963 it handled 751 vans, with between 50-70 vehicles being dealt with each month. A three year maintenance cycle on bodywork was the norm, but accident damage in such congested conditions as pertained in Greater London brought some vehicles in more often. Some staff were constantly mobile....six coachbuilders formed a mobile squad to deal with minor accident damage.

Similarly, a special mobile team of mechanics attended to the battery vehicles, which were essentially bound to their home operational depot. Only when these were in need of major attention were they taken away to an area maintenance depot, replaced in the short term by a spare vehicle. To reduce the need for float vehicles in the petrol and diesel fleets, the maintenance schedules were drawn up for periods when the vans and trucks were in their "off-peak", early in the morning or late in the afternoon. Nevertheless, there was a general 10% vehicle float. The staff worked to a three-shift pattern. Some men worked 6 a.m. to 2 p.m., and others 2 p.m. to 10 p.m. These served the area depots and dealt with routine matters on vehicles in service. A day shift from 8 a.m. to 5 p.m. worked on major repair jobs on vehicles which were off the road. To ensure regular attention,, every vehicle had a "Vehicle History Sheet" on which all work done was recorded

As our recent item on bus operation by Co-op's has shown, the Co-operative Movement dabbled in most trades in one way or another. This was often regarded with suspicion or hostility by others engaged in those trades, and in the case of the wireless trade, the Co-op was denied the opportunity to sell these items in their stores. The answer was, of course, that they Movement produced its own radio, which was aptly called the "Defiant".

To return to road transport, one still widespread activity of the Co-operative is the funeral trade, and their vehicles are to be seen in many towns. Your Hon. Editor was interested to note a hearse in the South of England recently, which appeared to be registered in Scotland. However, as the index letters were CRS (Co-operative Retail Society) it seems likely that this is an example of a "personalised" registration.

"Personalising" is not unique to individual vehicle owners. Many commercial enterprises use it, including bus and coach operators, road hauliers and small firms with odd-ball titles which can be echoed by the vehicle number. Seen recently on a minicoach of A to B Coaches was the registration A2 BEO.

## BOOK REVIEW & FEATURE

### Six Buses and a Tramway to Nowhere

A social history of Kingston upon Hull's first municipal motor bus service, by Rod Berriman MCIT. Published by Local History Unit, Hull College, Park Street, Hull HU2 8RR in 1998. A4 card covers 46pp

This book is a pleasant read, and is the history of an early foray into motor bus operation by an English municipality. Like many early motor bus ventures it failed, and a bus-less period ensued.

However, as the book's subtitle (underlined above) implies, it is also presented as a study of social history. And it is published by an academic institution (Hull College). Clearly the anorak has been discarded for the mortar board.

It is all to do with the fact that Hull had trams (horse and electric) along most of the main roads that led out of town, except the road to Stoneferry. The residents of this unfortunate place campaigned for public transport to be provided, and Mr. Berriman has researched the various initiatives by them. All is told against the background of the early development of the Hull tramway system, the problems of narrow streets at the turn of the century, the battles with the railway to replace level crossings with overbridges, and the vociferous parish council politics of the time.

The buses of the title were purchased second hand from the Mersey Railway Company, who had fallen foul of Birkenhead Corporation, who obtained an injunction against the company running buses on Corporation territory. Their history is told in a separate chapter, so that the narrative of the inauguration and demise of the bus service is kept free of vehicle detail. The Hull Tramways Committee, when they were considering the use of buses, paid a visit to Widnes. This place was in the news at the time, having just begun its own bus service with four top-covered double deckers, the first such vehicles in the world, it is believed. The visitors from Hull noted the covered in upper saloons, and commented as follows upon the vehicles at Birkenhead which they decided to purchase:

"These omnibuses seem to be suitable for our requirements in every respect, except that the upper deck is not covered, a feature of doubtful advantage on a bus. The bodies are London built and the chassis are by the Saurer Company, a firm of good reputation."

It is interesting to note the way in which the use of covered tops is dismissed as being "of doubtful advantage". By this time (1909) most tramways in urban centres had fitted top covers to trams and

thereby doubled the potential load on a wet day (such being quite common in Britain !). That top covers were "disadvantageous" on buses was because most contemporary buses were designed for use in London, and their measurements were proscribed by the metropolitan authorities. As London was the main market for double deck motor buses, manufacturers did not produce a "provincial" design. (1)

Widnes began with an experimental service, using hired (London style) vehicles. It was started during summer months, and fare revenue was used to keep the daily service going, the whole set-up being organised by a committee of local businessmen. When autumn came, the unwillingness of passengers to use the upper deck seats was noted so that, when an order was placed with Commer Cars for four vehicles for a permanent service, top covered bodies were proscribed. This required a redesign of the chassis, to widen the track of the wheels. Doing this gave a much wider floor space between the longitudinal seating of the lower deck. This permitted gross overloading on some occasions, but despite this and the extra height and weight of the top covers, the vehicles performed as well as could be expected of such machines, and none is recorded as having overturned.

Returning to Hull, and the tramway to nowhere. Despite the failure of the buses, road rebuilding en route to Stoneferry caused 360 feet of double tram track to be set into the new carriageway. The work was done by the highways department, who then asked the Tramways Committee to pay for the rails. No trams ever passed that way, and by the time the rails were laid the powers to run trams there had lapsed.

The author concludes his narrative by saying that the political storms and irate letters to the press of Edwardian times are still with us. In 1909 the residents of Stoneferry were demanding to be included in the transport network: today, the probable cause of a similar furore would be a desire to ban heavy lorries or commuters cars from a housing estate. What is interesting about this book is the balance struck between detailed transport history and observation of the concerns of the time.

The only criticism is the quality of photographs, which demand a better method of reproduction in these days of scanners, computer enhancement and such like. There is also a conversion table from old pence to new. Why cannot the reader accept that a half penny was "a small amount of money"; being told it is worth 0.21p is not really helpful. Do French history books tell us the value of a *sous* in euros? ARP

Note (1): It is of interest to note that the Chief Constable of Hull refused to licence a private bus "because it fell short of London's requirements"!!

## BOOK REVIEW

**TRAMWAY ADVENTURE, 50 YEARS OF TRAM-CAR PRESERVATION 1948-1998**, by L.A. Yearsley, published 1998 by the Tramway Museum Society, Town End, Crich, Derbyshire DE4 5DP. A5 format, 28pp. illustrated in colour, £3.50.

We do not normally review books on the subject of preservation, but this one is the history of preservation, of tramcars. Ian Yearsley chronicles the tramcar preservation movement from a tour on the moribund Southampton tramway system and the subsequent acquisition of an open top tramcar, to the present day working system at Crich. As well as telling us of the trams involved, and the physical obstacles to be overcome, and the gradual evolution of the site at Crich, with numerous "before and after" pictures, Ian also reveals something of the internal politics of the early days when the Light Railway & Transport League (LRTL), whose purpose was to advocate the modernisation of tramways, was less than enthusiastic in supporting a splinter group wishing to save relics from the past. Eventually those seeking to preserve trams were able to form their own separate society, with its own publications, the latest of which is the present booklet. All the illustrations are in colour.

Of course, the National Tramway Museum site at Crich is not just used for running trams, there is an excellent photographic collection and library, with full time staff. (See also page 2, paragraph 7) ARP

**OLDHAM CORPORATION TRAMWAYS** by Arthur Kirby, published 1998 by Triangle Publishing, 509 Wigan Road, Leigh. 27cm x 21cm (sub-A4) 110pp, 107 photographs, maps. £13.95

This is a beautifully produced book, with an excellent selection of black and white photographs. It has 51 sub-headings plus 4 appendices, rather than conventional chapters, giving it the look of a glossy magazine. The photos are scattered throughout in no particular order and rarely related to the adjoining text, and are often accompanied by banal captions ("A tram stop sign can be seen on the tram stand-ard") After the first pages, the photographs are not even related to the point in time to which the story relates (a Manchester Pilcher car is seen on a page relating to 1923). Dipping into the text reveals more eccentricities. All pre-decimal prices are followed by the 1998 equivalent in brackets. Thus the original penny fare becomes 40p. This is surely a folly. Books of this nature will be more read in the future than today. The rolling stock list is free of illustrations, and any attempt to find a picture of a car from each

class is foiled by the idiosyncratic disposition of the photographs.

There are some interesting facts to be found. For example, in 1916 the women's uniform was made to a design registered by the General Manager, and took two forms, an 'on duty' version and an 'off duty' version, the latter with longer skirt. The Tramways Committee and the Electricity Committee were separate bodies. The former often requested a reduction in the price charged for current (it turns out that the tramways were charged at a higher rate than industrial users, despite providing their own distribution network) A reduction was refused on a number of occasions, then granted provided the tramways increased their consumption of power, at which point the process of tramway abandonment was begun! An interesting circumstance for which the author presents no reason (nor even conjecture). Would it not have been appropriate to ascertain the personnel of the two committees, and to have studied the views and policies of the Electricity Committee?

An even more intriguing unanswered question appears in the following extract on the subject of Fare Collection.

"In December 1901 it was decided to introduce metal tokens for use by Corporation staff, as appropriate, for tram travel. In December 1902 some tickets were withdrawn following complaints about an 'objectionable advertisement'. The Committee 'expressed its surprise on learning the nature of the advertisement.' " We are left with too many 'whys' and hardly any 'wherefores' ARP

**BASSETTS OF TITTENSOR -100 YEARS OF TRANSPORT 1897-1997** by Ron Rhillips and Gordon Baron, published 1997 by Bassett Group Holdings, Transport House, Tittensor, Stoke on Trent ST12 9HD. 26cm x 18cm, 168 pp, fleet list and illustrations.

(Reviewed by Gordon Knowles)

One of the contributors to our October 1997 Symposium was Leonard Bassett, joint managing director of the Bassett Group, who told us the story of his family business over the last century. His talk was a brief version of the fine history published by the Group and co-written by our own Ron Phillips. This review I trust will suffice as such, and also as a summary of the presentation at the Symposium by Leonard Bassett.

The book consists of eight chapters dealing with the village and the family, beginnings of the business, expansion in the thirties and forties, nationalisation and the rebuilding afterwards, the coach business, consolidation and change in the haulage sector, and quality assurance into the millennium, plus a fascinating chapter on Reg Bassett's hobby, running



a very successful dance band during the war years and right through into the late seventies. It is impossible to identify by contrasting styles which co-author wrote which chapter, but I did detect a little repetition of the story here and there indicating more than one hand at work, but this does not detract from the book's interest.

Tittensor lies along the A34, a few miles from Stone in Staffordshire, and had been the home of the farming Bassett family for generations. The location, on a north-south trunk road and almost in the centre of England, made it handily placed to set up a business to move goods to and from the industrial midlands to Liverpool, so much so that eventually local offices were set up in Birmingham and Liverpool. But in the beginning the first Bassett we learn about, Joseph, went into agricultural contracting and then road building, with steam driven vehicles taking over from horses at an early date. Leonard John, one of Joseph's seven children, was the only one to follow him into the contracting and haulage business. He bought one of the new petrol driven lorries to carry general goods in the area. Most of the houses and farms in the village up to the First World War were part of the Trentham Estate, but following the demolition of most of Trentham Hall, many local properties came up for sale.

Thus Leonard John became the owner of Ivy House, where he had lived since his marriage, and the former blacksmith's workshops behind. He installed petrol pumps for public use, and kept the haulage vehicles at the rear. Reg, his son, started serving petrol and helping out with the lorries before he had left school. It was obvious he would continue in the family firm, in fact, of all the family, Reginald Guy Bassett was to make the greatest impact, and he was to remain in harness until the day of his death in 1991. Leonard John had poor health in his later years and was forced to leave the running of the business largely to his wife Mary: he died in 1935 aged forty-eight. The firm, by now known as L.J.Bassett, was left under the financial control of Leonard John's widow, with the young Reg (aged 22) taking over the day to day running. His younger sister, Hilda, was to complete her education and later join the family business in the office.

Reg was not required to join up during WWII as transport was an essential service. He continued to develop the business along the lines he himself started after his father's death. By now, the lorries were painted in what still remains the Bassett livery of two shades of blue with red chassis and wheels. Foden and Bedford trucks were the chosen models.

The firm's most difficult time was that between

1949-1954, when the hard won "A" licence trunk routes were taken over by B.R.S. Coach operation, then set up as a "sideline", has ever since remained as an integral part of the business. In February 1945, Grayswood Transport Limited, named after Reg's home, allowed Reg to stay in the local haulage business, and after the loss of many vehicles to the B.R.S., the yard was split between Bassetts (for the coaches, Grayswood vehicles and a few now operating in Reg's own name as sole proprietor) and B.R.S. who took over the long-haul contracts. Eventually the B.R.S. vehicles were grouped elsewhere, and the yard reverted to sole use by Bassett vehicles.

Partial denationalisation followed legislation in 1953. Lorries could now be bought back together with the all-important "A" licences. Reg Bassett set about rebuilding the business, and Tittensor Garages Ltd., a company set up to operate the service station, was renamed Bassett Roadways in 1954. In 1954 new vehicles began to appear in some numbers, mainly Gardner-engined Foden heavyweights. Glamorous names, mainly female, were applied to the cab fronts, a practice which ceased in 1990.

In 1961 a major workshop development was undertaken, largely an "in-house" job. A redundant steel framed aircraft hanger was bought, dismantled, transported and re-erected at Tittensor to provide new workshop and warehouse space. Further land was purchased, and more warehouses and offices were eventually to spring up over the next two decades, all screened by trees from the A34. Reg's two sons joined the business in the late sixties. Ashley, after training at Fodens, took charge of the engineering shop, whilst Leonard, who had trained in accountancy, joined the office. They are now joint managing directors of Bassett Group Holdings Ltd., which consists of four companies, concerned with haulage throughout the UK and Europe, coach travel, warehousing and training. The fleet is currently 55 heavy lorries, 140 semi-trailers and 27 coaches.

An Appendix details the coach and lorry fleet used over the years, including my favourite, a heavy duty recovery vehicle named "Hercules". It started out life in 1940 as a Foden DG6/10 supplied to the R.A.F. Bassetts acquired it along with other similar units in the late fifties, and fitted it with a coachbuilt body and a crane from another war-surplus machine. It was used extensively for many years in the North Staffordshire area, and was rebuilt in mid-second-life, and still exists, although now retired.

The illustrations are excellently reproduced, and the book is a credit to the firm and the authors.

## COMMERCIAL VEHICLE MANUFACTURERS IN THE NORTH WEST

Text of a talk given by Ron Phillips to a Day School on Commercial Vehicle History in the north west, at the Manchester Museum of Science and Technology, 3rd October 1998.

If one plots the location of companies making heavy road vehicles in Britain, one finds various clusters. . As far as oil engined commercial vehicles are concerned there was a cluster in the Greater London area (AEC, Bedford, Commer, Dennis, Ford, Scammell, Tilling-Stevens and Thomycroft which later moved to Basingstoke), the Midlands (Austin, Daimler, Guy, Jensen, Maudslay, Morris), and the North West, with nine manufacturers. Apart from this, there were some isolated outposts, such as Albion in Glasgow and Bristol in the town of that name. Other notable industrial areas (e.g. the North East) concentrated their manufacturing efforts on other products. The north western companies in geographical order, south to north, are:

- Sentinel of Shrewsbury
- Foden of Sandbach
- ERF of Sandbach
- Crossley of Manchester
- Walker Bros of Wigan
- Vulcan of Southport
- Seddon of Oldham
- Atkinson of Preston
- Leyland Motors of Leyland

Sentinel began as a manufacturer of steam driven vehicles and remained pre-eminent in that sphere. It was one of those makers of steam traction engines and wagons that attempted to re-design the vehicles to suit the age of the pneumatic tyre, and moved the essential parts of the steam engine from in front of the driver to below the driver, and finally to a position below and behind the driver. The Sentinel steam lorries of the thirties were fine machines, capable of good speeds, but they were still restricted, of course, by their thirst for water. The very last steam wagons built in this country were made by Sentinel in 1950, for Argentina. The company decided after the Second World War to market a series of lorries and buses with underfloor diesel engines. Of modern appearance and good pedigree, the range failed because of commercial pressure from the large scale manufacturers. Whilst the position of the engine under the cargo deck of a lorry did much to increase the appeal of the cab to drivers long deafened by noisy diesel engines at their elbows, it did little for those obliged to maintain the mud-bespattered engine beneath. When Sentinel ceased to build their range of goods vehicles,

the rights passed to a company trading for a few years as TVW of Warrington, who moved the engine back to its conventional forward position. The bus range lasted only a few years: in 1948 Sentinel produced an integral under-floor engined bus which was favoured by two or three prominent operators (e.g. Ribble) before it was dropped, again a victim of fierce competition and price discounting. The Sentinel factory continues today as a centre of engineering.

Foden, of Sandbach, began in the same way as Sentinel. Its steam road engines and wagons were of renowned quality, but when in 1930 it was faced with the question of how to cope with legislation (essentially designed to abolish vehicles on solid tyres) and the competition from increasingly more efficient lorries with i/c engines, the Company opted to introduce a range of heavy lorries powered by the then new Gardner range of engines. The vehicles were designed for a payload of upwards of 7.5 tons, and appeared with two, three, and four axles. Known as the DG range, the three axle model was built throughout the Second World War, for both military and (limited) civilian use. In the post-war period, Foden redesigned the cab and continued with the updated FG range. Work was put in hand to design and build a two-stroke diesel engine (FD6). Like many new ideas, this failed through lack of time and money to fully develop it. Prewar, Foden had built a few bus chassis, but from 1945 the Company offered both single and double deck buses powered by the Gardner 5LW - 6LW or the new Foden engine. There was even a revolutionary rear engined coach, of which about 50 were produced, but bus production was phased out in the mid-fifties and Foden concentrated on lorry building, keeping inside the "heavy" range, although weights were progressively increasing until the present 38 ton limit. Foden also manufactured earth moving vehicles - dumptrucks. The make has had many staunch customers, and some faithful overseas outlets. A bus chassis was eventually re-introduced for export to Africa, and there was a brief alliance with Northern Counties of Wigan to produce a rear engined double deck bus for the British market in the early seventies. This was effectively still-born. The uneven demand for heavy lorries, and the fact that the Company essentially concentrated its work on the one type of product, led finally to financial crisis and take-over. A modernised factory continues to produce heavy lorries at Sandbach under the control of the American Paccar Corporation.

ERF was founded as the result of schism in the Foden family. The new venture, started in 1932 by E.R.Foden, chose to build lorries in the middle range, using Gardner oil engines as the motive power. As the new company began "from scratch", it be-

came one of the first vehicle manufacturers to adopt a policy of buying in all major components, and merely designing and assembling the vehicles at the factory. The 4LW C14 was for 7.5 ton payload, and the similar 5LW powered C15 was designed to pull a drawbar trailer. Although not so common, there was also a three axle C16/6 with the 6LW engine. Like Fodens, ERF continued to build lorries during the War for both services and civilian use. The range was developed post-war, a new fibreglass cab with an oval grille was brought into use in the fifties, and eventually ERF took over Jennings, a well-established coach building firm from Crewe, hitherto its main supplier of cabs. Like Foden, ERF also introduced a lorry derived bus chassis for the South African market during the seventies and eighties, but its main production was lorries and tractor units. For the same reasons as its nearby relation, ERF eventually was taken over by a Canadian company, and production continues at Sandbach.

Crossley has a somewhat different background. This Manchester based firm which later moved to Stockport, began as a manufacturer of static engines. It later began the manufacture of automobiles, and during the First World War produced a successful military ambulance, many of which saw post-war use as light commercials or buses. Military designs continued into the twenties and thirties, and during the Second World War, a 4x4 tractor unit was built. The Company used its expertise to develop a heavy oil engine (VR6) for use in buses and lorries, being one of the first British manufacturers in this field. A series of bus chassis to take advantage of the trend away from the tramcar was produced, with a small number of lorries built in slack times. A number of fleets in the North West, the most notable Manchester Corporation, became staunch Crossley customers during the thirties. Manufacture of cars ceased in the mid-thirties, and the Company took up bus body building, so that it became primarily a bus building firm, even including trolleybuses with locally made Metro-Vick equipment in its range. The VR6 diesel engine proved to be troublesome in the long run, losing Crossley some goodwill, but nevertheless a new engine and modernised chassis were introduced from 1945, when the factory was moved from Gorton to ex war production premises at Stockport. The company flourished briefly during the post war "bus boom", but eventually lack of orders caused sale of the firm to AEC, and the last true Crossley buses were built in 1951. For the next few years, BUT type trolleybuses and bus bodies were built until final close-down in 1956.

Walker Brothers of Wigan, who made road vehicles under the Pagefield name, were a general engi-

neering firm with a wide range of products. Much of the output went to the mining industry, but road vehicles were built from 1907 onwards. Early production was small, but an order for 500 War Subsidy chassis 1914-18 established the company in this field. In the twenties, the "Pagefield System" of refuse collection was devised. This allowed a horse drawn refuse wagon to be winched aboard a "mother" motorised vehicle, whilst the refuse collectors and horse continued with an empty wagon brought to them by the "mother" vehicle. One Pagefield unit could service a number of refuse teams. Pagefield also built a small numbers of buses, mobile cranes for road or rail use, railcars, large pantechonicon style vans for refuse collection, and a few conventional lorries. Production of vehicles field ceased about 1951, but the firm continued in engineering until much later.

The Vulcan Motor and Engineering Company of Crossens, (Southport), was a builder of light and medium weight commercial vehicles and passenger cars which, after the First World War, began to build light lorries and bus chassis in the 1-4 ton range. There was also some production of military vehicles. After 1928, a new and ambitious range of models was introduced, including full-sized bus chassis for both single and double deck bodywork, and a small-wheeled chassis for municipal refuse collection or bus "runabout" work. The Company passed into receivership in 1931, but continued to function for six more years, introducing various new models until eventual takeover by Tilling-Stevens of Maidstone. Vulcan vehicle production was moved south, and certain TS products were badged "Vulcan" for sale to foreign markets. The final product under the Vulcan name was a 4 ton forward control model, widely used as a lorry, but with some use as a bus chassis, in the forties. The Crossens factory continued to perform engineering work into the fifties under the name Bankfield Engineering Company. Vulcan had built a few bus bodies, and Bankfield did work on reconditioning bus bodies, notably for Ribble.

Seddon set up business in 1938 in Salford to assemble lorries from proprietary parts. The chosen range was 6-7 ton trucks. Production ceased during the war, but restarted in Oldham after the war with a wider range, including light buses and a 1.25 ton delivery van. In the sixties heavier vehicles were added to the range, both goods and passenger, and in 1970 a period of expansion took place which brought Seddon buses into many British fleets for the first time. The Company had built bus bodies in small numbers since the late forties, and now expanded this side of the business too, under the name "Pennine Coachcraft". The rapid expansion included a takeover of Atkinson in 1970, the new entity being known as Seddon-

Atkinson. As a result, a new range of lorries, moving into a higher weight range previously served by the Preston firm, was introduced under the joint title, but bus production was phased out. This Company was taken over by the American International Harvester Company in 1975.

Atkinson began its association with transport as the Preston agency for Sentinel wagons, but after Sentinel took over its own sales from Shrewsbury, Atkinson began to design and build its own steamers. It operated independently 1916-26, when it entered into agreement with Walker Bros. to develop new models under the Atkinson-Walker name, with many parts being made at Wigan. It was during this period that a number of light locomotives were produced. Also to boost business in this difficult period (for steam vehicles), Atkinson took over the Leyland steam wagon business. Further problems followed, the agreement with Walker came to an end, and the almost bankrupt firm reverted to its original business of repairing steam wagons. A receiver was appointed, the firm was rescued and produced three prototype lorries, whilst keeping itself busy with repairs. It was then reformed, to become Atkinson Lorries (1933) Ltd., assembling its own designs (with Garner engines) and using new premises occupied in 1935. Production was confined to the 7-12 ton range. Only about 100 machines had been built by 1940, but wartime military orders soon came. The factory moved again in 1948 to premises at Walton-le-Dale, manufacturing an extended range, and from 1952, the underfloor engined "Alpha" bus chassis was built. As a result, the Company name was changed in 1954 to Atkinson Vehicles Ltd. Although the bus side of the business did not flourish, the lorry side did. One notable order was for 400 6x6 gritter /snow-plough lorries for the Ministry of Transport. In the mid fifties, when many lorry firms introduced new cab designs, traditional radiators were abandoned. Atkinson did not do this, and when redesigning their cabs produced a new, wider, radiator shell of traditional form which retained the encircled "A" trade-mark. Like others, the Atkinson lorry range was constantly upgraded to match operators needs, and one of the most significant models was the 4x2 tractor unit known as the "Borderer", introduced in 1968. A later version of this under the same name was to become a class leader. After several unwelcome take-over bids, Atkinson was acquired by Seddon in 1970.

Seddon-Atkinson, the new entity, introduced a new range of vehicles, and the Atkinson name and tradition seemed doomed. However, when International took over the business in 1975, it re-introduced the encircled "A" trade-mark, and brought out new heavier duty models, to recapture the market in which

the old Atkinson company had traded.

Leyland Motors has its origins in the manufacture of steam lorries, starting in 1896, when it was known as Lancashire Steam Motors. It started the construction of lorries driven by petrol engines in 1904 and changed its name to Leyland in 1907. The early machines had Crossley engines, until the firm began to design and build its own petrol units. Steam and petrol lorries were produced in tandem, as well as a few fire engines, motor buses and other vehicles, including some petrol driven trams for Heysham. Like other big commercial vehicle firms, Leyland produced a large number of subsidy chassis during the First World War. When this was over, a former aircraft factory at Kingston on Thames was acquired to re-manufacture surplus army vehicles. At Leyland, steam lorry production continued until 1926, but was then discontinued and remaining rights sold to Atkinson. Production of buses and bus bodywork had now become an important activity at Leyland, as new lorry sales were in the doldrums, partly as a result of the Company's own activities at Kingston.

The saviour of the Company's fortunes was the "Lion" bus chassis introduced in 1926. This low loading chassis on pneumatic tyres, with a four cylinder petrol engine, became a best seller, and was sold as a complete bus with Leyland coachwork, or as a chassis to be bodied elsewhere. Many other coachbuilders copied closely the Leyland design. Soon after the four-cylinder "Lion" range, came the six cylinder "Tiger" and "Titan" range. The low loading "Titan" double decker of the new series, with side gangway upper deck low-height bodywork, was to transform the British bus scene. For a while, lorries took a back seat as Leyland strove to meet the huge demand for buses in the 1928-30 period. The famous names of "Beaver", "Hippo" and "Octopus" were applied to lorries sharing the same components as the "Tiger" and "Titan" buses, but these were heavyweight vehicles, and there was a need for a lighter model, which eventually appeared as the "Cub" range made at Kingston.

After refurbishing lorries, this factory had assembled Trojan cars, and built bus bodies. From 1931, the lines were turned over to production of the new 2 ton "Cub", also available as a 20 seater bus. New legislation in the mid-thirties saw a need for a faster more robust "light" lorry, and the "Cub" gave way to the "Lynx" range, although a few models of the previous type were carried on. Vehicle production at Kingston ceased during the Second World War, but was restarted post war when trolleybuses were assembled for a few years. Leyland built trolleybuses in Lancashire during the thirties, obtaining the electrical equipment from G.E.C. A few trolleybuses had

# Was the Lowbridge Bus really necessary?

Ron Phillips puts forward some radical thoughts on a design of bus now extinct but once widespread in Britain. A revised version of the presentation given at the last Business Meeting.

In 1926, Leyland Motors prepared a new and revolutionary double deck vehicle, the first examples of which appeared in the following year. The Company was enjoying the profits from the Leyland Lion single decker, the first of the Company's models to sell in thousands, and which gave a welcome boost to the finances of the firm. The double decker promised more (and did in fact live up to expectations).

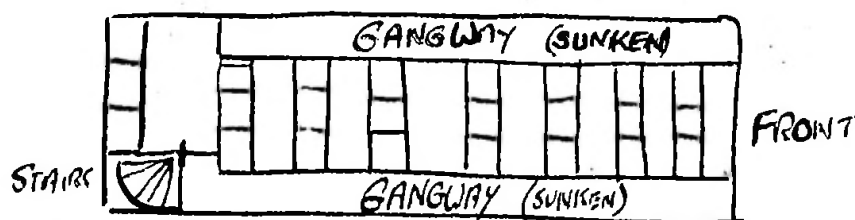
Like the Lion, it was to be the first in its class to have a low frame and pneumatic tyres. But it went one step further, by using an off-side sunken gangway on the upper deck it had a remarkably low height of just a few inches over thirteen feet. The Company was so taken with the idea of what became known as the "lowbridge" body, that all the bodies built by Leyland on the new chassis, the Titan TD1, from its inception in 1927 until at least 1930, were of this type. The body design, known as the "Titan", was patented, and others were only permitted to build such bodies upon payment of a royalty of £50.

Some early customers took the Titan for use on busy routes which had hitherto required single deck vehicles. The Titan represented a chance to replace three vehicles operated by six men with two vehicles

operated by four. Some customers, however, staunch supporters of the Leyland product, made a somewhat retrograde move. For example, Birkenhead Corporation which operated highbridge fully-enclosed double deckers took the new 51 seat lowbridge Titans with open rear stairs and side gangways. It is significant that Birkenhead were to suggest to Leyland that the Titan body be redesigned with an enclosed rear. It was probably Maidstone & District which suggested in 1930 that Leyland should start to offer normal height bodywork on the Titan chassis (this was, of course, available from other bodybuilders, but there were economies to be had if both body and chassis were assembled at the same plant )

As it turned out, a large number of bus operators purchased the lowbridge Titan, and certainly at first these buses were used on routes which had hitherto required single deckers. In the long term, it seems that certain companies or groups of companies made it a policy, for reasons of standardisation or otherwise, to use only lowbridge buses. The Tilling Group was a prime example, with only Eastern Counties, Brighton and Bristol using highbridge machines as a general rule. The BET Group followed a policy of buying lowbridge buses only for routes upon which such were necessary.

There must have been few operators whose territory was so bedevilled by low bridges that there were no opportunities at all for the operation of highbridge vehicles. The Tilling group condemned many passengers to ride for a lifetime on lowbridge buses, when perhaps all the routes from the local depot could have used highbridge vehicles. In Liverpool, Crosville Motor Services had a network of services which had very heavy traffic, and condemned their upper deck passengers to the unpleasant



PLAN OF UPPER DECK SEATING ARRANGEMENTS OF EBOR BUS COMPANY'S BUS NO. 8.

Coachwork:- Willowbrook  
Seating Capacity:- Upper Deck 24.  
Lower Deck 28.

The sketch on the left was drawn by Roger Atkinson, following a short ride on EBOR No. 8 on 14/12/45. The vehicle had come from the Luton Corporation fleet, one of many of this odd dual sunken gangway design used to avoid conflict with the patented single gangway design introduced by Leyland in 1927. One wonders how many passengers would use the nearside gangway.

ambience of a saloon from which it was difficult to see, difficult to breathe the smoke laden air trapped by the low ceiling, and difficult to get out of when one thought one's stop was near. Lower deck passengers too suffered from restricted headroom on one side of the saloon, and very often cramped seating. ( The lower saloon on highbridge buses invariably had 26 seats, but many lowbridge buses had 28 on the lower deck in order to raise the overall capacity of the vehicle ) Yet, because of its policy of buying at second-hand and buying up new bargains from the manufacturers, Crosville had more than enough highbridge buses in its fleet during the immediate post war period to have served Liverpool's needs. These, however, were scattered about the network seemingly willy-nilly, serving to prove the point that many parts of the vast network were free from low overbridges.

In general, municipal operators kept highbridge double deckers, and perhaps had a small number of single deckers for difficult routes. One unusual example is Luton, whose fleet was composed at one time (necessarily) of lowbridge vehicles built to a design intended to evade the patent taken out by Leyland (see illustration). Another unusual example was that of Leigh Corporation, whose entire double deck fleet was of lowbridge design because the depot doorway was too low for highbridge buses. St. Helens was one of the few towns to run lowbridge trolleybuses. In 1950, new highbridge vehicles were purchased for two busy services, so a special arrangement of wiring was erected in advance of the low railway bridge at St. Helens Junction. The negative trolley wire was slewed away from the positive wire to a position close to the kerb, and was lowered. This meant that if a highbridge trolleybus were to approach the bridge, the trolley pole would be depressed and then would activate a cut-out switch on the roof of the vehicle.

London Transport adopted what might be regarded as a "sensible" policy: it refused to use low height double deckers, and kept a fleet of single deck six wheeled vehicles for use on some routes. Only in the Second World War did L.T. purchase some low height utility double deckers, later assisted and replaced by the RLH class of AEC Regent double deckers. These vehicles were restricted to the routes which needed them.

It is clear that what Leyland did in 1927 had a long term effect on British bus operation. The Titan lowbridge bus was an excellent idea for certain routes, but it became, through the influence of Leyland, a type of bus found countrywide in Britain, when perhaps it should have been a design found only in certain areas in which low arches or railway bridges were widespread. The unique "Beverley Bar" buses of the East Yorkshire fleet are another example of the same

thing. The East Yorkshire company replaced lowbridge side-gangway buses with a special highbridge design, able to pass beneath Beverley Bar. But was this necessary? Did every bus in the fleet need to pass through this obstacle? Was the extra expense worthwhile?

Many low bridges have now ceased to be a barrier to buses.....either they have been removed, by-passed, or the carriageways beneath them have been lowered. Yet one hears regularly of buses being decapitated and passengers injured in accidents. No-one seems to have looked at this problem. Why are low bridges not preceded by some form of guard wires or an electric beam which activates flashing signals to stop high vehicles before they strike the obstacle. In these days of over zealous "health and safety" regulations, this is definitely an area that has been overlooked. One recent accident took place in Runcom, which is the only town in England to have a dedicated busway. This was designed for use by single deckers only at a time when double deckers were still abundant, and no-one seems to have thought of the possibility of the driver of a double deck vehicle, not knowing of the height restriction which is not declared on signs at the entrances to the busway, choosing to use it, thinking that it would be free of low bridges, as it was a roadway specially designated for buses.

To conclude, let us look at what might have been. In the light of the impression made by the original lowbridge design. Leyland might have done it again in 1956, when the prototype Atlantean was introduced. This bus, 281 ATC, had a highbridge layout within the dimensions of a lowbridge bus. To do this, the vehicle had monocoque construction and independently sprung front wheels. Neither of these features was well developed enough to proceed with on production models at the time, so the idea was dropped and the Atlantean appeared in highbridge and lowbridge form. Later developments in the sixties gave a highbridge layout on all rear engined chassis, but never as low as 281 ATC. The real point is this. If the design of 281 ATC had been taken one stage further, it may have been possible to produce a vehicle within the four metre height limit which prevails on continental Europe.

British bus makers have been frustrated by this height regulation from introducing British style double deckers into many continental cities. A recent development (1998) in Paris was the introduction of some new open top double deckers (Volvo chassis, East Lancs bodies) for sightseeing work hitherto performed by some low headroom German citybuses purchased second hand.

## Regional Traffic Commissioners: Powers & Duties by John Hibbs

A transcript of the presentation given by Professor John Hibbs at the Fourteenth Business Meeting.

There is a pressing need for further research into the early decisions of the Traffic Commissioners under the Road Traffic Act 1930. It is known that they met to discuss various matters, and it is believed that one of them acted as the "senior" member of the group. A first step would be to find if any minutes were kept on these occasions, while another move would be to look at the appropriate numbers of *Modern Transport* to see if there were any comments made at the time.

Here are some of the issues that seem to me to require investigation.

1. **Price Control.** The Act gave the Commissioners powers to fix maximum and minimum fares, and to secure that "fares are fixed as to prevent wasteful competition with alternative forms of transport."

I can find no authority to actually fix fares, yet from an early date (perhaps from the first) the fare table was endorsed as a condition of the Road Service Licence. It would be very interesting to know by what reasoning the Commissioners decided to exceed their powers in this way. Price control was removed by the Transport Act 1980, but again we know little about the reasoning, which was surely illogical: price control is required in the presence of a monopoly, and the monopolistic Road Service Licences remained effective until swept away by the Transport Act 1985.

2. **Duplication.** Most (but not all) express service licences carried limitations to the number of vehicles permitted on any one journey. (When I was with Premier Travel in the 1950s we had limited duplication on Birmingham - Clacton, but none on Cambridge - Great Yarmouth). In general, the limits seem to have been intended to protect the railways, and there was an early appeal decision that turned, as I recall, upon what was a "backbone" service. (Oddly enough, in the 1950s a number of Tilling and Scottish Group companies succeeded in having all duplication limits removed, on the argument that they were in the same ownership - that of the British Transport Commission - as their railway competitors.

3. **Intervention.** When granting initial applications, "grandfather rights" were not always observed. Thus the Eastern Traffic Area Commissioners refused to grant license applications by a number of the small

firms that operated in the Grays / Tilbury area of Essex. (I once had sight of the Chairman's pencilled comments in N&P, that suggested that he had been briefed by the Certifying Officer after some local investigation.) I learned when I was with Premier Travel about the origins of our licence for Birmingham - Clacton, and this makes an interesting story in itself. The service had been started before 1931, by the London based coach operator Empire's Best, whose London - Clacton service survived into post-war years. The railways objected to pretty well all express service applications (there's another appeal case there, which stopped them getting away with an attempt to destroy the coach industry). So this application came before the Eastern Region Commissioners, with fare stages between every significant town en route (even Colchester - Clacton, and Coventry - Birmingham). The Chairman, with no attempt at rationality, removed most of them, saying "You don't want that one, do you?" until the applicant said, "Well, I'd like to keep Cambridge in," or words to that effect. This seems to me to be a good example of going "beyond the laws of natural justice".

A much later example of intervention came in the 1950s, when the Metropolitan Traffic Commissioner (there was only one for the Met, no "Panel Commissioners" - tried to prevent eight foot wide vehicles from use on services in his area. Their use on (unregulated) private hire work soon made the nonsense apparent, but it would be worth writing this up. Another nonsense was the attempt by the South Wales Commissioners to licence private hire ("contract") operations, which I believe was stopped by the then Minister of Transport.

4. **Contraction.** On this one I have strong feelings! By late 1959 I realised that my company, Corona Coaches, was experiencing severe loss of revenue - a wet summer had been followed by easing of hire-purchase restrictions, so that people were buying more cars and motor-cycles, and traffic on the Stowmarket-London service was falling, while the savings from integrating Eddie Long's services were slow in coming through. So in January 1960, I went to the Chairman of the Eastern Area Commissioners with a set of applications to cut mileage, and explained the problem. He was sympathetic, but said he could not give me emergency authority unless I first cleared the applications with the local authorities. This took so long that by April it was too late to have effect (much of the cuts being winter only). Subsequently (and wrongly as I now see it) my accountants pressed me to wind up, and in due course I surrendered all the Road Service Licences. The system had stopped me

acting to save the services, but could not stop me from abandoning them ! (Most of them were acquired, for a consideration, from me, acting as agent for the liquidator, but that is beside the point.)

**Conclusion.** From these random recollections, it seems to me that there is work to be tackled here. If any member feels like taking it on, I would be happy to act as a "supervisor", and to open as many doors as I can. I am sure I have not exhausted the openings for research. JH

A number of points were raised by members in the discussion which followed. Further points which came out from this included.

Whereas the Chairman of the Traffic Court could often see through the smoke screen raised by applicants or objectors, it was often true that a good traffic manager or a proprietor knew the business better than the officials.

Early appointments to the Traffic Commissioners were from business, and not politically influenced

Duplication could be varied, for example, for routes to towns with common factory holidays. The Premier route to Birmingham was limited to five coaches, but the Cambridge - Yarmouth service could have unlimited duplication.....perhaps up to 25 vehicles. A flaw in the legislation did not limit the size (i.e. seating capacity) of the coaches used.

Cross-Subsidy, an issue not raised in the presentation, was another subject mentioned, which requires some study.

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Metro-Vick equipments at the request of the customer. In the post-war period, Leyland and AEC merged their trolleybus and railcar interests, forming British United Traction. After Kingston was closed to trolleybus manufacture, this type of vehicle was assembled at the Crossley factory, then part of the AEC Group.

The factories at Leyland (and nearby Chorley) were used to build tanks during World War Two. Three axle lorry chassis were built for the forces, but no lorries were supplied to civilian customers. Tanks were powered by an engine which was adapted for civilian use after 1945. Of 7.4 litres capacity, it was used until a new engine could be put into production, the 9.8 litre 0.600 unit. "Tiger" and "Titan" buses, and "Beaver", "Hippo", "Steer" and "Octopus" lorries were all gradually reintroduced, and all received the 0.600 engine as standard. To replace the "Lynx" a new light lorry was built with a 5 litre engine: this was known as the "Comet". Leyland still regarded the bus business as a core activity. The first radical design work of the post-war period was the creation of a new range of underfloor engined buses, followed by the "Atlantean", the first complete prototype of which appeared in 1956, and the first production models in 1958. This rear-engined double decker bus continued in production until 1984 (last export model 1986), although there was a substantial re-vamping of the design in 1974. It turned out to be one of the "stars" of the bus business.

In 1951, Leyland acquired Albion Motors of Glasgow. This firm built medium weight lorries, similar to the "Comet", and over the next ten years it was integrated into the Leyland company, still using the Albion badge, and building lorries and buses to complement the range, and all eventually to use Leyland built engines. Arch-rivals AEC were taken over in the early sixties, but continued with a restricted range of vehicles and still using AEC engines until closure in 1979. Bristol, Daimler and Guy (the first two mainly building buses) all were subsumed into the Leyland empire in the late sixties/early seventies. Daimler bus production was transferred from Coventry to Leyland, but just before this happened a new joint venture factory was opened in Cumberland to make the Leyland-National bus, a mass-produced integral vehicle. Thousands were built, but problems in the bus industry saw demand shrivel up, and the factory later went over to bus bodybuilding and railcar production before eventual closure.

**Lack of space prevents the conclusion of this article appearing in this issue. Some notes on the final years of Leyland as an independent company**

### Not the answer, but.....

a reasonable guesstimate. The following survey made in January 1999, of lorries travelling north on the M6 in Cheshire (Juncs. 17-20) between 10h00 - 10h30 showed :

Scania	83
Volvo	56
Leyland/DAF	42
ERF	40
Mercedes-Benz	40
MAN	23
Renault	23
Iveco	19
Foden	8
Seddon/Atkinson	6

total: 340

These ten makes now dominate the fleets used on motorway work.