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Low Cost Airlines and Scheduled Airline Operations

Nigel Dennis, Senior Research Fellow, Transport Studies Group

Talk given to Transport Economists' Group
University of Westminster
24 November 1999

There is currently much interest, in this country, in the comparatively recent development of so-called 'low-cost' airline operations but, as Dr Dennis explained, there had been examples of such operations for some time in the USA. There the outstanding and long-lived success of Southwest Airlines had rarely been successfully emulated by other carriers. The speaker's purpose of the talk was to:

- give some background to the present rapidly changing scene in this country and elsewhere in Europe,
- explain the 'real' cost and revenue differences between the operations of the new 'low-cost' carriers and the conventional operations of the well-established major operators, and
- give some thoughts on what the future might hold for the 'low-cost' carriers.

Low cost carriers first seriously appeared on the American aviation scene in 1971 (prior to de-regulation) when Southwest Airlines started-up as an intrastate carrier in Texas. It has since grown to be the fifth largest US carrier, by passenger numbers, and is one of the most consistently profitable US operators, despite offering the lowest fares in the market it serves. Its significance in the total domestic airline business can be judged from the facts that it uses 262 aircraft (all of the same type - Boeing 737s), employs 24,000 staff and carries 45 million passengers per annum. No other low-cost airlines have managed to do as well, and the speaker reeled off nine airlines which had either failed or had been taken-over after trying to emulate Southwest Airline's success, including such well-known names as Peoplexpress, Pan Am (Mark II) and Continental Lite.

Before going-on to dealing with these islands' experience, Nigel listed the characteristics, as generally understood, of these new 'low-cost' carriers compared with the more traditional and conventionally operated lines. 'Low-cost' airlines are characterised by high-density seating (aided by having no business class seating), thus giving up to 30% more seats than the equivalent aircraft on conventional service. Short turn-rounds at airports were

commonplace (e.g. 20-30 minutes rather than 45-60 minutes), thus giving significantly greater utilisation of the aircraft. Secondary airports were more likely to be able to offer short turn-rounds because they tend to be less congested than the major airports. They also offer lower landing fees, and thus figure disproportionately in low-cost operations. The Boeing 737 tended to be the standard type of aircraft and to represent the minimum size used because of much lower unit costs; there would be no 'in-flight trimmings' and no 'frequent flier' inducements. The absence of 'in-flight trimmings' reduced cabin staff numbers and helped to reduce turn-round times through obviating the need to replenish with comestibles. Added to which, it has been possible to recruit staff who will work for about 50% of the rates paid by the major airlines. Some low-cost operators do not entertain interlining, sell direct to the passenger (i.e. do not employ agents or participate in the computer reservation systems), do not issue tickets, allocate seats or make a free baggage allowance. These simplifications in service reduce administration and selling costs but can be partially offset by the cost of telesales systems and some loss of revenue.

A set of comparisons for the principal elements of cost of the major operator British Midland and a typical 'low-cost' carrier is given in table 1 below.

Table 1: Estimated cost comparison

	British Midland	**Low Cost +20% seats and flights**
Flight & cabin crew salaries	6.3	3.6
Flight & cabin crew expenses	1.9	0.0
Fuel and oil	6.1	7.3
Aircraft rental/depreciation	15.5	15.5
Training and development	0.8	0.8
Maintenance	8.7	10.4
Airport charges	14.7	4.9
Navigation charges	4.9	5.9
Handling and ground charges	14.4	11.5
Passenger services	6.5	0.0
Insurance	0.6	0.8
Sales and reservations	5.5	12.0
Advertising	3.5	5.3
Commission	7.6	0.0
Cargo specific	1.1	0.0
General and administrative	1.9	1.0
Total	100.0	79.0
Per passenger (index)	100	55
Cost per passenger (£)	83.3	45.8

Notes: British Midland data from CAA Statistics, 1996
Load factors are assumed equal between carriers

This suggests an average cost per passenger for the 'low-cost' carrier is 55% of the cost for the major carrier. It appears that the 'low-cost' carrier can produce 20% more seats and flights for the same operating cost. But one factor working against the low-cost operator is that is difficult to operate a direct sales policy abroad. The broad results of the foregoing comparison is consistent with another study, which suggests a seat cost for Ryanair at 52% of that for BA on the London-Paris route. However, Debonair claimed its costs to be only one third less than those of major airlines, but it employed more expensive aircraft and offered a few more 'frills' than other low-cost carriers.

Table 2: Busiest European scheduled international routes

	Passengers 1996 (millions)	**Low Cost carrier 1999**
London-Dublin	3.34	Ryanair
London-Paris	2.92	Debonair
London-Amsterdam	2.61	easyjet
London-Frankfurt	1.67	
London-Brussels	1.20	Virgin Express
London-Zurich	1.19	easyjet
London-Rome	1.13	go, Debonair
London-Milan	1.07	go
London-Madrid	1.03	easyjet, Debonair
London-Copenhagen	0.96	go
Paris-Rome	0.95	
London-Munich	0.93	go, Debonair
London-Geneva	0.92	easyjet
Copenhagen-Oslo	0.86	
Paris-Milan	0.84	
Paris-Madrid	0.83	
London-Dusseldorf	0.81	Debonair
Paris-Frankfurt	0.81	
London-Stockholm	0.80	Ryanair
Copenhagen-Stockholm	0.78	
Paris-Amsterdam	0.77	
London-Vienna	0.75	
London-Athens	0.73	easyjet

Source: Compiled from CAA and ICAO data

The dominance of London as a traffic generator and receptor, and the absence of 'head-to-head' competition generally, heavily influence market opportunities in this country, and in Europe. Moreover, most of the busiest routes are domestic rather than international. Domestic air travel in the EU was not fully deregulated until 1997 and this has resulted in rather patchy competition on the

main routes up to now. Table 2 illustrates the major European scheduled markets. The dominance of London as a traffic generator and receptor is obvious and it has become the major attraction for 'low-cost' carriers, albeit operating from Stansted or Luton rather than Heathrow and Gatwick. The service pattern for (successful) low-cost carriers tends to be one only in each market. As much as half the traffic at some major continental airports is connecting passengers, which low-cost carriers are not generally anxious to cater for, and some cities have no low-cost secondary airport - two factors which reduce the opportunities for 'low-cost' market entry.

'Headline' fares have turned out to be lower than the expectations from cost comparisons. For example, Go! offered £40 return to Edinburgh, *from* £60 return to Copenhagen/Milan and *from* £70 return to Bologna/Rome/Lisbon. Ryanair offers *from* £49.99 single to, inter alia, Oslo, Stockholm, St Etienne (Lyon), Carcassone (Toulouse), Pisa and Venice; and *from* £29.99 single to, inter alia, Glasgow (Prestwick) and Dublin. But 'cheap' offers are restricted - including date limitations for booking and a stay of at least two nights, which is not always suited to business travellers. Also, note the distance (additional travelling cost) from some secondary airports to the cities they are meant to serve (e.g. St Etienne, Carcassone, Prestwick). Ryanair claims that its London-Dublin fare of £29.99 only produces £9.99 income for the company because of £20 airport taxes, but this would only recoup about 10-15% of average cost!

The major carriers tend to match the low fares of the low-cost lines in part, with high yielding traffic to balance. Some of the majors' cheap fares are lower than their competitors from the low-cost carriers e.g. £49 return by British Midland to Amsterdam. But business traffic at six times this fare, and filling one third of the aircraft, will suffice to almost cover its operating costs and make the (very) low-priced fares remunerative. The major carriers' cheap fares are also restricted in availability and suitability, particularly, in practice, to business travellers. The recent entrant into the low-cost business ('Buzz') quotes standard fares as well as 'low-cost', but only 20% of 'deals' appear to be available at any one time.

In spite of the publicity the 'low-cost' carriers have enjoyed, and their successful debut onto the travel market, they still represent a small proportion of total revenue in the domestic and European market. Whereas BA (Europe) made around £3.2 billion in revenue in 1997, the four low-cost carriers Virgin Express, Ryanair, Easyjet and Debonair could manage barely £0.5 billion between them.

The big question is: "can low-cost lines maintain their cost advantage over the major lines?" Some are beginning to suffer rapid staff turnover and pilot

shortages, which can be expensive to rectify (e.g. Virgin Express). Ryanair has started to replace old second-hand (cheap) aircraft, and the launch incentives offered on airport charges have started to unwind (Ryanair and Easyjet). In-flight 'frills' are being re-introduced, and charged for, to improve yields (e.g. Debonair). The major airlines in direct competition with the low-cost lines are making strenuous efforts to reduce *their* costs. Nevertheless, the great advantages of the low-cost line remain in its policies of high seating density and reduction of 'service frills', with their beneficial effects upon aircraft utilisation.

The net effect on traffic levels following low-cost entry is illustrated by tables 3, 4 and 5. Table 3 deals with total traffic changes on major routes, table 4 with secondary routes and table 5 with the impact of low cost carriers on a selection of routes to/from London.

Table 3: Change in traffic on major routes following low-cost carrier entry (London to Milan, Rome, Oslo, Geneva)

Service	% of traffic in summer 1997	Growth 1997-1998	% of traffic in summer 1998
Conventional	93 of which	+8%	86 of which
Heathrow	74	+5%	67
Gatwick	13	-1%	11
Stansted	5	+75%	7
London City	2	-5%	2
Low Cost	1	+951%	11
Charter	6	-42%	3
TOTAL	100	+16%	100

There has been a greater total impact on secondary routes (demand up 16% on major routes and 38% on secondary routes) and the traffic of low-cost carriers has grown by an average of 10%, 1997/98. Low-cost carriers took 11% of the traffic on major routes in 1998 and 21% on secondary routes. Charter operations suffered significant falls in traffic on both major and secondary routes 1998 compared with 1997. London-Dublin is an outstanding example of the impact of 'low-cost' operations: overall growth is 2.5 million, representing a quadrupling of traffic in ten years and making it the busiest international route in traffic terms in Europe. Ryanair is the major operator on the route, operating from Stansted, Luton & Gatwick, and no other operator can match its success. Comparing the growth in total travel between the UK and Ireland, Netherlands & Germany, traffic to and from Ireland is now greater than that to and from

Germany. Business travel shows the greatest growth on this sector contrary to the conventional wisdom that business travellers are not substantial users of 'low-cost' operators.

Table 4: Change in traffic on secondary routes following low-cost carrier entry (London to Lyon, Toulouse, Venice, Pisa and satellites)

Service	% of traffic in summer 1997	Growth 1997-1998	% of traffic in summer 1998
Conventional	81 of which	+15%	67 of which
Heathrow	38	+26%	34
Gatwick	43	+5%	33
Stansted	-	-	-
London City	-	-	-
Low Cost	-	n/a	21
Charter	19	-19%	11
TOTAL	100	+38%	100

Table 5: Impact of low-cost carriers

Route to/from London	Carriers	Airports	Market Share 1997	Market Growth 1995-1997
Nice	Easyjet	Luton-Nice	27%	12%
Barcelona	Easyjet Debonair	Luton-Barcelona	21%	71%
Stockholm	Ryanair	Stansted-NYO	13%	41%
Amsterdam	Easyjet	Luton-Amsterdam	5%	33%
Glasgow	Easyjet Ryanair	Luton-Glasgow Stansted-Prestwick	20%	31%
Edinburgh	Easyjet	Luton-Edinburgh	10%	31%
Aberdeen	Easyjet	Luton-Aberdeen	10%	26%

Notes: Compiled by TSG from CAA statistics.
Data is for six months period: June-November (International), May-October (domestic)
Market growth for all London scheduled traffic was 15%

Moving to another major route comparison, which has seen the intrusion of another major competitor in the shape of Eurostar; the impact of low airfares has been greater on London-Brussels than London-Paris. The former enjoys a

much greater contribution from ‘low-cost’ carriers (Virgin Express & Sabena) with ‘hub’ connections, than the latter. Generally airfares are lower than Eurostar on the London-Brussels route whereas the reverse is the norm on London-Paris. Consequently Eurostar has made much greater inroads into air traffic on London-Paris.

There are hints of possible future moves to broaden the market for low-cost carriers: although early low-cost operations showed an absence of ‘hub’ operations, Virgin Express and Ryanair have started to offer onward destinations in connection. Moreover, some continental charter companies are now offering low-cost, scheduled services - Monarch being the only UK carrier to follow this trend. Finally, what about long haul, low-cost? (To date almost all has been short-haul). There are problems. Mixed configuration aircraft make it difficult to calculate and match marginal costs. It appears that ‘hub’ feeds into and out of long haul, low-cost operations are essential for success, which could prove disproportionately expensive for the low-cost carrier.

Summing-up the financial success, or otherwise, of low-cost operations, the speaker listed eight companies as follows, in descending order of success:

Ryanair	good
Easyjet	can possibly break even
Virgin Express	difficult to assess as yet
Go!	query registering a one-third of turnover loss
Buzz	starts in January 2000
Debonair)	
Color Air)	have ceased operations
AB Airlines)	

Following this very comprehensive review of the current experience of low-cost airline operations, Dr Dennis dealt with a wide range of questions from an obviously appreciative audience.

Robin Whittaker enquired if the speaker had looked at the cost impact on airports of these low-cost operations. Would they continue to offer lower charges when marginal cost started to rise?

Dr Dennis said that it appears that the airport authorities concerned first take the opportunity for marginal use of available capacity. There will naturally be a jump in costs once spare capacity is filled. Airports will need to differentiate their product between the various categories of user. Airlines are more likely to

negotiate on-going low charges where an airport has few other commercial services to fall back upon (e.g. Prestwick, Beauvais).

Derek Done was concerned as to how one defined ‘low-cost’. There were some surprisingly low charges by major operators on selected routes. Did the speaker think there was a future for ‘low-cost’ operations in long haul?

The speaker thought that the continental major airlines were more inclined to match low-cost operations by providing low-cost capacity than were the UK operators (e.g. Lufthansa on Stansted - Munich). Spoiling tactics were typically the response of the UK major operators. The general position of the charter lines was good as they enjoyed high utilisation of their aircraft, block booking kept ticketing costs low and they achieved high load factors. However, the peripheral markets were quite a different matter. Major airlines can often provide competitive rates for the leisure passenger, but are surrounded by restrictions. Ironically, it is the business passenger who often sees the greatest saving from using low-cost new entrants.

Stephen Bennett asked about the role of the Regulator in relation to low-cost operations. Was it effective?

The speaker said that the low-cost operators were the children of de-regulation and were reaping the benefits of liberalisation. However, predatory behaviour by the major carriers may lead to recourse to the European Commission. Aggressive behaviour is quite characteristic of the low-cost airlines and British Midland, for example, may find itself squeezed between the major operators and low-cost carriers. The primary ambition of the regulatory bodies was liberalisation, which was politically motivated.

Peter Gordon finally commented on British Airways position. They appeared to be turning-away traffic by reducing capacity - this may be the wrong policy for short-haul as average costs per passenger may thereby increase. How much of this traffic will transfer to Go! is obviously the unknown factor. There is the danger that BA will cease to be the dominant carrier on short-haul.

The meeting concluded at this point: the chairman thanked Dr Dennis for an interesting and stimulating talk and members expressed their appreciation in the usual way.

Reviewed by Don Box

Road Charging Options for London

Reg Evans, Technical Director, Halcrow Fox

Talk given to the second annual joint meeting of the
Transport Economists' Group and
Institution of Civil Engineers' London Association
University of Westminster
26 January 2000

Introduction

The talk described the work undertaken by an independent group of transport professionals brought together by the Government Office for London (GOL). The ROCOL (*ROad Charging Options for London*) study was initiated to prepare a report on how the new powers for road user charging and workplace parking levies in the Greater London Authority (GLA) Act 1999 could be put into practice and what their impact might be. The group was not asked to recommend to the Mayor whether the powers should or should not be used.

Study Team

The group was assisted by studies carried out by a team of consultants led by Halcrow Fox. The other consultants working with Halcrow Fox were Oscar Faber, Sureway Parking, Newcastle University, Ernst & Young, Accent Marketing Research and the Institute of Transport Studies at Leeds University.

Objectives of the study

- Provide authorities with an impartial view of methods of implementing road user charging and workplace parking levies, and their costs and benefits.
- To set out to Mayoral candidates and their advisors, the implications of using the new powers in the GLA Act 1999.

The Requirements of any scheme are that it needs to be:

- Feasible - capable of being implemented and operated within the powers, resources, administrative capacity and influence of the GLA.
- Effective - in reducing traffic congestion and raising revenues.
- Acceptable - in terms of support for its introduction and, subsequently, compliance by the public at large, business and other organisations, and transport operators.

- Capable of implementation in the Mayor's first term, taken to be by summer 2003.

Road User Charging

The study considered a wide range of road user charging options, which included various geographical areas ranging from Greater London, Central and Inner London (North and South Circulars) to Central London (Inner Ring Road) and using a range of technologies, from paper permits to full electronic road pricing. Charges ranged between £2.50 and £10 for cars and light goods vehicles with treble charges for heavy goods vehicles.

Other characteristics that were looked into were:

- Time periods covered - peak versus all day, days of week
- Exemptions, concession and discounts - the economic case for exemptions is weak.
- Licence issue and payment methods
- Enforcement
- Complementary measures
- Time to implement

Central Area road user charging

Basic information on the type of traffic in central London was extracted. This indicated the following characteristics:

> *There are about 900,000 vehicle trips per weekday between 7 a.m. and 7 p.m. from or within the area bounded by the Inner Ring Road. Most of these (about 80%) are trips that cross the boundary into the central area, i.e. 720,000 trips. The remaining trips (180,000) are made within the area. However, of these only a ¼ are made by vehicles that have not crossed the boundary earlier in the day. Thus, only 50,000 vehicle trips are truly internal.*

It was therefore decided that since most of the traffic has crossed the cordon, a simple cordon entry licence could be considered with enforcement only at point of entry. However, entry before the 7 a.m. would incur no charge and the vehicle could be driven about central London all day without being charged.

On the other hand, an area licence scheme would require any non-exempt vehicle during the charging period to pay the charge. It was decided that this would be used as the main scenario to illustrate a road user charge because of its greater scope for enforcement.

Any scheme would need to cope with traffic that diverts around or away from the charging area and those who switched to public transport. The central London example offers the most suitable diversion routes and public transport alternatives, and was the most practical location as the starting point for road user charging in London.

The main components of the illustrative scenario were:

- An area licence that would be operational between 7 a.m. and 7 p.m. on weekdays
- The Inner Ring Road as the boundary: Marylebone Road, Euston Road, Pentonville Road, Tower Bridge, Elephant and Castle, Vauxhall Bridge, Victoria and Hyde Park Corner. This includes the City of London and parts of Westminster, Camden, Islington, Hackney, Lambeth, Southwark and Tower Hamlets.
- A charge of £5 for cars and light goods vehicles. Charges were trebled for heavy goods vehicles.
- There would be no exemptions, except buses and emergency vehicles.

A summary of the impact is given in the following table from the study:

Table 1. Estimated traffic impacts and economic benefits of a £5 Area Licence for Central London

Impact	**Central London**		**Inner London**	
Change in traffic levels	Base vehicle km	Change	Base vehicle km	Change
am peak (7 a.m. – 10 a.m.)	0.8m	-10%	5.9m	-3%
14-hour (6 a.m. – 8 p.m.)	3.6m	-12%	25.5m	-3%
Change in average traffic speeds	Including junction delays		Including junction delays	
am peak (7 a.m. – 10 a.m.)	15 to 18 km/h		21 to 22 km/h	
14-hour (6 a.m. – 8 p.m.)	16 to 18 km/h		22 to 23 km/h	
Economic benefits per year	£125m to £210 million			
Area licence annual operating cost	£30m to £50m			
Overall annual benefit	£95m to £160 million			

The modelling assumed that the freed-up space would be available for all traffic. For those continuing to use their vehicles there would be improved traffic conditions. The benefits for commercial vehicles are shown in table 2 below.

Table 2: Estimated annual benefits to commercial vehicles an Area Licence for Central London	
Benefits to commercial vehicles	**£5 charge for LGV £15 charge for HGV**
1. Journey time and reliability benefits	£80m to £120m
2. Vehicle operating cost benefits	£10m to £15m
3. Charges paid	-£70m to -£80m
Net benefits (1 + 2 - 3)	£20m to £55m

These estimates show the benefits that could be available to cars and commercial vehicles. Freed-up road space could be allocated to buses, cyclists or pedestrians instead if this was thought to be more valuable.

The costs and revenues of a road user area licence in central London are given in table 3 below. It indicates that there would be net annual revenues of between £230m and £270m for a daily £5 charge in central London.

Table 3: Estimated Revenue & Costs for a Central London Area Licence	
Area licence charge for Central London:	**£5/£15**
1. Annual revenue from charges	£230-£280m
2. Annual revenue from penalty payments	£30-£40m
3. Annual operating and enforcement costs	£30-£50m
4. Net annual revenues (1 + 2 - 3)	£230-£270m
5. One-off set-up costs	£30-£50m

These annual revenues could be used by the Mayor to fund substantial transport improvements in London, as long as they are additional to existing funding. It os a requirement of the legislation that funds raised are spent on the Mayor's transport strategy.

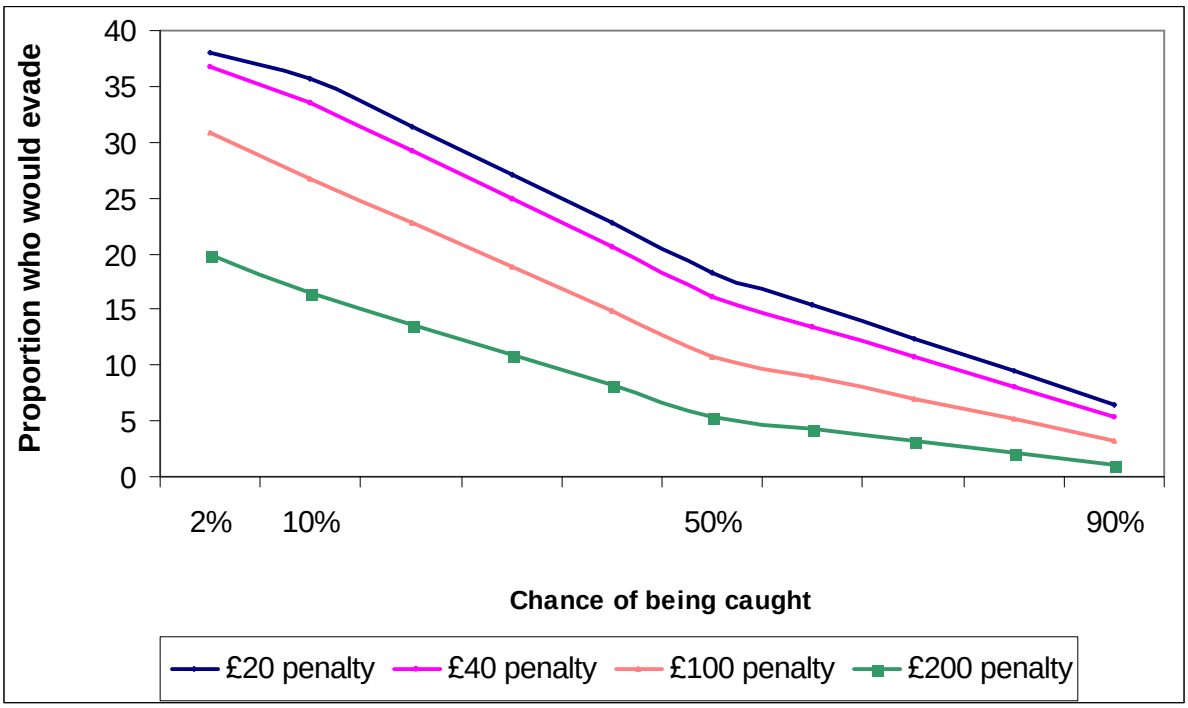
One of the key issues is enforcement: to be feasible the system has to provide a level of detection to keep non-compliance levels below 10%, otherwise any scheme was considered unacceptable. Thus, as figure 1 shows, the combination of a £40 penalty and an 80% chance of being detected, traced and served penalty notices will lead to a violation rate of less than 10%.

The type of traffic in Central London is estimated to be:

20% are going through central London
20% park on-street
60% park off-street (consisting of commuters and non-commuters)

Therefore on-street enforcement will only catch 20%, missing most of the vehicle flow.

Figure 1: Proportion of London drivers who would evade a £5 area licence at different penalty levels



The chance of being caught with the illustrative scenario enforcement strategy is indicated by the grey vertical line. Source: *ROCOL consultants*

Technology options

- Simple paper scheme with manual enforcement.
- Simple paper scheme and vehicle database with manual enforcement.
- Virtual paper and vehicle database, Automatic Number Plate Recognition (APNR) system with digital cameras and supplementary manual enforcement.
- Tag and beacon - could not be done until 2003 (trials in Edinburgh and Leeds with national standards in place by 2005).

Paper vs. Automatic Number Plate Recognition (APNR): table 4 shows the relative costs of a paper licence and an APNR system:

Table 4: Paper vs. APNR

	Paper system	APNR with cameras
Set-up costs	5-15	30-50
Annual cost	30-40	30-50
Level of detection	20%	80%
Timescale	< 2 years	3 years
With complementary measures	> 2 years	3 years

Complementary measures need to be associated with any scheme to make it:

Feasible: e.g. diversionary route improvements

Effective: e.g. public transport capacity improvements

Acceptable: e.g. quality improvements to public transport, fare reductions and environmental schemes

Licence issued

- Sales outlets - retail, telephone, internet
- Assumes pre-payment but allows post-payment
- No discounts on seasons

Sales are estimated to be 14m licences per year with the mix likely to be -

daily licences	12m
weekly licences	1.5m
monthly licences	0.7m
annual licences	0.1m

There would be around 250,000 vehicles using an area licence on a typical day, which are likely to be 33% holders of an annual licence, 30% monthly, 11% weekly and 27% daily.

Workplace Parking Levy

The GLA legislation is very prescriptive, giving very little flexibility for the scheme. It is a charge to the occupier of the building for the maximum number of workplace vehicles parked. This gives an enforcement issue over vehicles belonging to customers of the business. Occupiers may wish to pass on the costs to those who park, or companies may simply absorb the costs. All land uses are

included within the workplace-parking levy: schools, hospitals, leisure, industry, offices, etc., but not non-workplace vehicles.

The estimated number of private non-residential (PNR) parking places is uncertain but thought to be around:

	Spaces	Car Parks
Central London	36,000	2,000
Extended central area	50,000	2,600
GLA Area	430,000	20,000

The parameters that must be considered in designing a workplace-parking levy scheme are:

- Area covered.
- Hours of operation - main objective is to discourage car commuting therefore the working day (07.00-19.00) was considered the most appropriate.
- Scale of levy - off-street parking charges in central London range between £12 and £15 per day. An annual charge of £3,000 is equivalent to £12 per day. This annual charge was used in the illustrative core scenario.
- Exemptions - none were assumed for the illustrative core scenario, although they could be considered for certain categories of road user, small companies or parking provision within planning standards.
- Issuing licences - an annual licence would specify the maximum number of controlled vehicles that could park at each site at any one time. Licences could be handled by Transport for London or the local borough involved.
- Enforcement would be done by a representative of the licensing authority, who would have the power to enter sites.
- Complementary measures.

The study found that with an annual levy of £3,000 per workplace vehicle within the extended central area about a quarter of workplace parking spaces would no longer be used. The illustrative work suggests that this could reduce traffic in Central London by about 4% in the morning peak and 3% over the 14-hour day, with a smaller impact in Inner London. Table 5 shows the traffic impacts and costs and benefits of a £3,000 levy.

Table 5: Estimated traffic impacts and economic benefits of a £3,000 workplace parking levy for extended Central London area		
Traffic impacts	**Central London**	**Inner London**
Change in traffic levels am peak (7 a.m.-10 a.m.) 14-hour (6 a.m.-8 p.m.)	Vehicle kilometres -4% -3%	Vehicle kilometres -2% -1%
One-off set-up costs	£5m	
Total annual revenue from charges	£90m to £110m	
Annual operating and enforcement costs	£5m	
Economic benefits per annum	£45 to £90m	
Overall annual benefit	£40 to £85m	

Acceptability

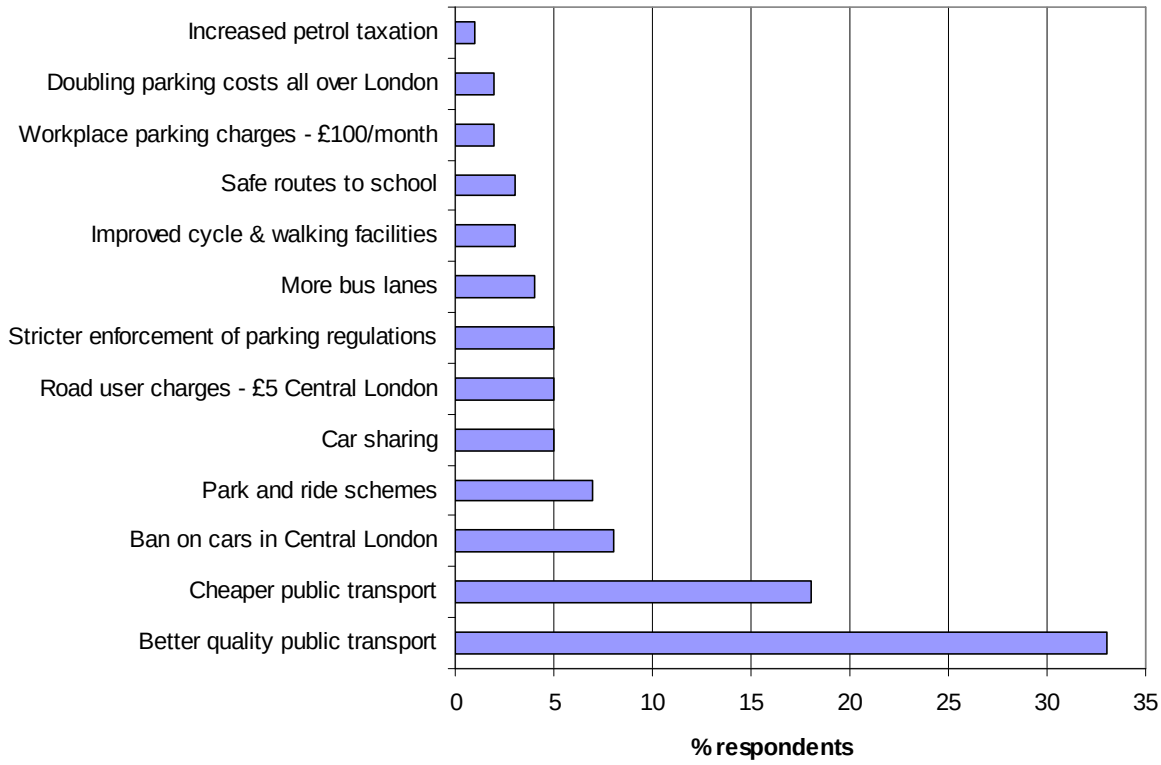
An important part of the work was the programme of market research surveys that examined the public's current attitudes to charging options in London and their likely behavioural responses to a scheme.

94% of people think there is too much traffic in London, with 60% saying it causes a problem. Figure 2 illustrates the people's response to the question on the most effective solution to reduce traffic levels. It shows that people naturally prefer the "carrots" rather than the "sticks" e.g. better quality and cheaper public transport.

The public was asked what they would want the revenue from charging spent on. Table 6 indicates the spending package preferences.

Table 6: Spending package preferences by respondents	
New mayoral traffic task force	23%
Selected improvements on London's major roads	28%
Major new rail or Underground line	33%
New Mayoral PT security task force	39%
New trams	39%
New super bus routes	52%
Lower bus fares	62%
Upgraded Underground/rail services	64%

Figure 2: The most effective solution for reducing London's traffic levels



Conclusions

If the Mayor wanted to introduce charging, it could not be done in isolation. It would have to be an integral part of the Mayor's Transport Strategy. There are three main considerations in implementing a scheme:

1. Timetable for design, consultation and implementation is dependent on the timetable for the Transport Strategy.

2. There are inter-relationships between the design of a charging scheme and associated measures, which depend on the revenues generated. Also a decision will be required on the use of freed-up road capacity.

3. The co-operation of the boroughs will make any scheme easier and quicker to implement.

The study produced good indications of the net economic benefits of implementing either a road user or workplace-parking charging scheme. Public opinion was generally in favour, if the revenues are spent on improving alternative modes. The detailed consultation on any scheme will set the scene on implementation.

Discussion

Peter Gordon (University of Westminster) was concerned about the data used for the study, particularly noting the figures shown for passengers arriving at Marylebone.

Reg Evans said that the LTS model that had been used is the only detailed multi-modal available for London. It was validated substantially in 1991, and a 2001 state had been assumed, but recent changes in rail system usage had not all necessarily been picked up. The model output represents a three-hour morning peak period.

Stephen Bennett (railway consultant): looking at the finance side, it is clear that benefits accrue because of price inelasticities although there were no costs of complementary measures included. His question was "what sort of advice could be given about the prices?"

The speaker stated that there are several different sub-markets: goods vehicles are most inelastic to price but are likely to get most of the benefits and could reschedule their journey times. Car trips have different elasticities depending on trip purpose and income group - therefore there is a concern about low-income groups in relation to high income, which will be of concern to mayoral candidates. It is not possible to simply speak of a single market.

Tim Elliott (Mouchel): looking at cost and benefits, the taking of £250-300 million out of the London economy it is difficult to see the benefits, with reduced profitability and disposable income.

Reg argued that there is a net economic benefit due to faster travel times, reduced vehicle operating costs, etc. - the benefits are the typical ones from a cost-benefit analysis and the costs are the resource costs of operating. Revenues are generated that have to be spent on schemes to further the Mayor's transport strategy.

In the short term, Tim Elliot thought what was demonstrated is that a lot of money is raised, taken out of the pockets or profits, which could have severe effects on viability. In the long term, he agreed, there could be a net benefit.

Reg reported that some businesses said they would move outside the charge area, but the working group was sceptical that this would happen. Most charges would be paid by car drivers and most people who pay would get a benefit in reduced travel time. A charge of less than £5 per day is seen as worth paying rather than not travelling by car. The previous congestion charging work did address the impact on the London economy - it was not a great concern that business would suffer or move out. There has been a positive response to road user charging from

London First who see improvement in traffic conditions, the environment and accessibility as important criteria.

Iain Simmons (City of London) asked (1) how much of the revenue raised comes to London or is the total amount of money available inelastic, and (2) why did the client not ask "is it achievable"?

Reg Evans: All of the money raised has to be spent on the Mayor's transport strategy, but it is not certain that the money raised would be additional to the funds that would be available to the Mayor. The perception of the client and the working group was that the balance is probably positive, i.e. it is feasible, effective and acceptable. The question is do you leave roads for cars to travel faster or use it for other modes. Public acceptability had been examined and shown to exist. Political acceptability was not part of the study. A road user charging scheme in Central London probably was achievable in the Mayor's first term.

Geoff Warren (Merton, London Borough) asked if a scheme is achievable in outer London during the Mayor's first term of office.

The speaker thought it very unlikely that outer London would have a scheme in the short term, and that central London charges will not substantially affect traffic in outer London. Public transport improvements would need to be implemented in central and inner London first, before further development into outer London.

Janet Knight of the Institution gave a vote of thanks for the excellent talk tonight, saying she did not envy the job of the Mayor. She also thanked Peter White and Martin Lawrence for organising the second joint meeting at the University of Westminster.

Report by Laurie Baker

Reference:

The study report: "Road Charging Options for London: A Technical Assessment" ISBN 0 11 753541 9 may be obtained from The Stationery Office, price £40.

The report may also be viewed as a "pdf" file on:

http://www/open.gov.uk/glondon/

The Potential to Reduce the Number of Short Car Journeys

Roger L Mackett, Centre for Transport Studies, University College London

Paper presented to the Transport Economists' Group
University of Westminster
22 March 2000

Introduction - Scope of the project

The study was commissioned by the Department of Transport, Environment and the Regions to consider ways that could help to reduce the number of short trips by car. This involved examining existing data sources, carrying out surveys of the short car trips made by a sample of travellers to see which could be made by other means, and estimating the proportion of such trips that might be induced to change.

A 'short' journey was defined as one of less than 5 miles.

Objectives

The objectives of the study were to:

a) To examine what can be gleaned from existing data to achieve the project objectives.

b) To study in detail the short trips made by a sample of travellers to determine which trips might realistically have been done by walking (as part of public transport journeys as well as a mode on its own) or by cycling, and the measures required to induce a change.

c) To make a quantified estimate of the proportion of short trips of various lengths that might be induced to change mode from car to cycle or walk or to public transport at various levels of policy intervention.

d) To infer, from this, the range of traffic reduction that might be achieved by measures to encourage cycling and walking.

The pattern of short car trips

The number of trips per person per year by distance and main mode for 1995/97 are available from the National Travel Survey (NTS), and are summarised in Table 1.

Table 1: Number of journeys under 5 miles per person per year, 1995-97				
	Under 1 mile	**Under 2 miles**	**Under 5 miles**	**Total**
Car	48	159	370	637
Walk	236	280	291	293
Bicycle	5	11	16	17
Local bus	3	15	45	62
Other	1	4	17	43
Total	**294**	**472**	**741**	**1,052**

Source: NTS 1995/97

Car is used for over 60% of short trips, but only 16% of trips of that are less than one mile. Walking is the dominant mode for very short journeys but is less important for longer journeys. There are very few cycling journeys of any length. As shown in Table 2, the proportion of journeys undertaken by car has increased over the last fifteen years. It is the shorter trips that are growing fastest.

Table 2: Modal share by car by distance, 1989/91 and 1995/97			
	1989/91	1995/97	% Change
< 1 mile	0.14	0.16	13.2
1-5 miles	0.45	0.50	11.9
> 5 miles	0.80	0.85	7.7
Total	0.54	0.61	11.6

Source: NTS 1995/97

Methodology

Five areas were selected for the surveys, covering both urban and rural areas - London, Leeds, Ipswich, Hereford and Dorset, which were carried out by Steer Davies Gleave. All trips over a two-day period were recorded for all members of 1,117 households. 397 people who made short trips by car were selected for in-depth interviews about the short car trips that they had made.

The data were put into an Access data base and classified by trip purpose, trip length, sex, age, car ownership, time of day, and area.

Key issues for analysis

For the set of real short trips made by car:

- Why did people use their cars for these short trips?

- What alternatives did they see?
- What would make them transfer to the alternatives?

The reasons the car was used

Various reasons were given for using the car, as shown in Table 3.

Table 3: Main reasons given for using the car

Reason	% car drivers	% car passengers
Heavy goods	19	22
Lift for family	17	8
Short of time	11	6
Long way	11	22
Convenience	10	21
Further trip	9	1
Needed for work	5	2
Bad weather	5	6
Dark out	4	4
Social	4	3
Taking old or ill	3	1
Car essential	1	0
Felt unwell	0	3
Walking the dog	0	0
Unpleasant route	0	1
Total	**100**	**100**
Number	**1,624**	**263**

There was no single dominating reason for using the car. The two most important were that it was necessary to carry heavy goods such as shopping, and giving a lift to the family.

The interviewers recorded comments, a number of which were pertinent and gave an understanding of the reasons for car usage.

- The car was used because of heavy goods. This was usually shopping, but there are other types of goods to be carried.

For example, a 63-year old man from Dorset said: *"I could have walked I suppose. I had a mower in the car for both journeys so I had to take the car. I could have combined it with another journey I suppose but it's just down the road: I have to look after the cricket pitch."*

- Health reasons for using the car:

  A male respondent aged 72 from Leeds said: *"I can't walk that far due to my medical condition"* and "*Neither of us can use public transport due to our disabilities".*

  Similarly, another elderly man from Leeds said: *"Not worth a bus - too short a journey and would still require two walks, uphill coming back; I'm aged 81."*

- Time constraints:

  "We had a lie in, so there was not enough time to walk. If it was a nice day and we didn't leave it too late, we would walk."

  "If I walk both ways I don't have much time at home to do jobs before I have to go back again for Robert. I do sometimes walk in summer when the weather is nice."

  "We could have walked if we'd had more time, but we nipped there quickly whilst my other daughter was having a guitar lesson. The Blue Pineapple has some good value cards and presents and my daughter wanted to choose them herself."

- There were some interesting reasons for car use:

  A woman aged 34 taking her son to school said: *"I don't walk because Robert is a bit grumpy and I have to virtually drag him.*

  A respondent in Leeds said: *"I really wanted these home-made sausages as they are special – X's* (well-known shop) *sausages are not so good."*

  On a similar theme, a woman from Leeds said: *"Could have walked to X* (well-known shop) *which is nearer but I don't like their champagne and it was special for my husband's birthday the next day."*

  Also in Leeds: *"It is the nearest place to buy a nice take-out sandwich: we work on an industrial estate with only grotty greasy spoon cafés. These is a pub nearer but they do not do take-out and we work at our desks as we eat."*

- Then there were the difficult cases to change - the 63-year old man from Dorset said: *"Look, I know walking is better for you but I've always used the car: it's easier, cheaper and just so much more convenient."*

  A 58-year-old man from Dorset stated: *"There aren't any buses and I wouldn't use them anyway - I have my car to use.*"

  Similarly, a man aged 66 living in London said: *"I could walk, but I always use the car as it is heaps easier.*"

The survey asked about the reason for driving, which are summarised by the user's sex, as shown in Table 4. It can be seen that women were more likely to be using the car because they were giving lifts to members of their family, because they needed to make a further trip, or because it was dark out.

Table 4: Main reasons for driving the car by sex (%)

Reason for car use	Male	Female	Total
Heavy goods	19	18	19
Lift for family	12	21	17
Short of time	11	12	11
Long way	14	8	11
Convenience	12	9	10
Further trip	8	10	9
Needed for work	7	4	5
Bad weather	6	4	5
Dark out	2	7	4
Social	4	5	4
Taking old or ill	3	3	3
Car essential	2	1	1
Felt unwell	1	0	0
Walking the dog	0	0	0
Total	**100**	**100**	**100**
Number	**796**	**828**	**1,624**

The relative likelihood of reducing car use for various trip characteristics was calculated, and is set out in Table 5.

It can be seen that people were more likely to reduce use of the car for journeys if they were escorting a child to school, or to a lesser extent, if they were on

personal business, and that women and younger people were more likely to consider other alternatives. Two-car households were also more likely to consider driving less, households with three cars or more were less likely to do so. Trips in the morning peak would be the easiest to change whilst those before it would be the most difficult. Trips in rural areas would be less likely to switch away from the car than those in urban areas.

Table 5: Likelihood of reducing car use		
Factor	**High**	**Low**
Trip purpose	Education escort Personal business	Business Commuting
Trip length	Long	Short
Sex	Female	Male
Age	Young	Old
Car ownership	2 cars	3+ cars
Time of day	Morning peak	Before 0700
Area	Ipswich London	Hereford Dorset

The alternatives to the car

Users were also asked what alternatives they considered, as shown in Table 6. These have been split between car drivers and passengers. No alternative could be identified for 22% of trips by car drivers and 24% of car passengers. Walking and bus were the alternatives mentioned most often, for about 30% of car trips each. Cycling was mentioned as an alternative by 7% of car drivers and 3% of passengers.

When the travel for various trip purposes was considered, it was found that escorting children to school was the purpose for which alternatives could most easily be found, and business and work trips were the ones for which it was most difficult.

Table 6: The alternatives considered by car users (%)		
	Car drivers	**Car passengers**
No alternative	22	24
Modal alternatives		
Walk	31	30
Bus	31	34
Cycle	7	3
Taxi	3	5
Train or tube	2	1
Public transport (not specified)	2	1
Motorcycle	0	0
Tram	0	0
Other alternatives		
Somebody else make the trip	2	0
Would not make the trip	2	2
Total	**100**	**100**

The results can also be split by age and sex as shown in Tables 7 and 8.

Table 7: Alternatives by sex for car drivers (%)			
Alternatives	**Male**	**Female**	**Total**
No alternative	28	15	22
Walk	28	33	31
Bus	25	36	31
Cycle	8	6	7
Taxi	3	3	3
Train or tube	1	2	2
Public transport (not specified)	2	1	2
Somebody else make the trip	2	3	2
Would not make the trip	2	1	2
Total	**100**	**100**	**100**
Number	**796**	**828**	**1,624**

Women were less likely to say that they were no alternatives and much more likely than men to cite travelling by bus as an alternative. They were also more likely, but to a lesser extent to cite walking.

Table 8: Alternatives by age for car drivers (%)

Alternatives	**17-29**	**30-59**	**60+**	**Total**
No alternative	15	20	30	22
Walk	25	32	29	31
Bus	40	31	26	31
Cycle	13	8	2	7
Taxi	4	2	5	3
Train or tube	0	2	1	2
Public transport (not specified)	2	1	3	2
Somebody else make the trip	0	2	3	2
Would not make the trip	1	2	1	2
Total	**100**	**100**	**100**	**100**
Number	**150**	**1107**	**362**	**1,624**

Note: *There are five cases where the age is not known.*

People were more likely to say that there was no alternative the older they got. Younger people were more likely to cite using the bus as an alternative.

Actions to reduce the use of the car

People were asked what could be done to make them use the car less, as shown in Table 9. Government or other agencies to various extents can influence some actions. These are labelled `collective actions'. Items in italics are those generally not controllable by collective actions. Specific factors amenable to collective actions were only mentioned in around 38% of cases. Of these, improving bus services was by far the most important quoted in 22% of cases.

Table 9: Actions to shift car drivers to walking, bus and cycling (%)				
Action	**Walk**	**Bus**	**Cycle**	**Total**
No alternative	*0*	*0*	*0*	*22*
No specific action	*39*	*15*	*28*	*21*
Improve bus services	0	69	1	22
Take personal action	*26*	*3*	*16*	*11*
Improve the weather	*17*	*1*	*19*	*7*
Improve dependents' travel	5	7	4	5
Reduce the need to travel	6	2	8	4
Reduce the cost of travel	0	2	0	2
Improve walking facilities	5	1	1	2
Improve cycling facilities	0	0	24	2
Improve rail services	0	0	1	1
Cancel activity	*2*	*0*	*0*	*1*
Total	**100**	**100**	**100**	**100**
Number	**500**	**496**	**114**	**1,624**

The detailed actions which car drivers said would encourage them to shift to bus are shown in Table 10. Improving the route pattern of buses was cited most often (10%), followed by increased frequency (6%).

Table 10: Actions which could stimulate a shift from car to bus by car drivers	
Collective actions	**% of short car trips that could shift**
Improve the route pattern of buses	10
Improve the frequency of buses	6
Make better information about buses available	2
Improve the perception of bus services	2
Make buses safer for use by children	2
Operate buses all night	1
Make bus fares cheaper	1
Non-collective actions	
No specific action	5

Note: *Actions are only included in this table if at least 1% of car trips would shift as a result*

A similar question was asked about shifting to walking, as shown in Table 11. The results suggested that relatively little could be done by collective actions.

Table 11: Actions which could stimulate a shift from car to walk by car drivers	
	% of short car trips that could shift
Collective actions	
Make walking safer	1
Make walking safer for children	1
Improve local facilities and shops	1
Non-collective actions	
No specific action	12
Improve the weather	5
Improve personal organisation	4
Travel during daylight hours	2
Not offer a lift	1

Note: *Actions are only included in this table if at least 1% of car trips would shift as a result*

Few car users cited cycling as an alternative so it is probably not surprising that improving facilities for cyclists would only have a minor effect (Table 12).

Table 12: Actions which could stimulate a shift from car to cycle by car drivers	
	% of short car trips that could shift
Collective actions	
Improve facilities for cyclists	2
Non-collective actions	
No specific action	2
Improve the weather	1

Note: *Actions are only included in this table if at least 1% of car trips would shift as a result*

The overall effects on car use in Great Britain

The effect of all actions that could be undertaken to reduce car use was then calculated, as shown in Table 13. Not surprisingly there would be a greater reduction in the number of trips than distance because only short trips are being considered here.

Table 13: Collective actions to reduce in total car use in GB		
	% reduction in car trips	**% reduction in car distance**
Bus routes improved	5.9	1.6
Bus frequency improved	3.6	1.1
Perception of public transport improved	1.1	0.3
Bus information improved	1.1	0.3
Public transport operates all night	0.6	0.2
Public transport links improved	0.2	0.0
Improve bus services	**12.5**	**3.6**
Local travel made safer for children	2.4	0.4
Transport improved for the old and disabled	0.3	0.1
Improve dependents' travel	**2.7**	**0.5**
Delivery service provided	1.0	0.2
Local shops improved	0.8	0.2
Local facilities improved	0.7	0.1
Telecommuting becomes available	0.1	0.0
Reduce the need to travel	**2.5**	**0.5**
Reduce the cost of travel	**1.4**	**0.3**
Local travel made safer	1.0	0.1
Street lighting improved	0.2	0.0
Improve walking facilities	**1.2**	**0.2**
Facilities for cyclists improved	0.9	0.2
Facilities provided at work	0.1	0.0
Improve cycling facilities	**1.0**	**0.2**
Train frequency and service improved	0.3	0.1
Local train service introduced	0.2	0.0
Improve rail services	**0.5**	**0.2**
Total	**21.9**	**5.5**

In total it might be possible to reduce journeys by up to 22% and distance by about a quarter of this if the collective actions mentioned here were implemented.

Conclusions

It is possible to draw conclusions from both the NTS and the surveys:

Conclusions from the National Travel Survey

- Over 70% of trips are less than five miles in length, and half of these are by car
- The car is used by 16% of trips of less than one mile
- Walking is popular for trips of less than one mile, but is rarely used for trips of over three miles
- Cycling is used for less than 2% of trips in Britain, and most of these are less than five miles long
- Bus is used for 5% of short trips, and 7% of all trips
- The number of short trips is decreasing, but the number by car is increasing.

Conclusions from the surveys

- There are alternatives for most short trips by car
- Most people are prepared to consider alternatives to the car for short trips
- Cars are used for some short trips because of the nature of the trip, and that need would have to be met in another way if an alternative is used
- Many people use their cars for short trips for escorting children, the elderly and the sick
- In some cases, cars are used simply for the convenience they offer relative to other modes
- No specific factor deters many people from using the alternatives
- Car drivers claim that the biggest single factor that would encourage them to use an alternative is improved bus services
- Some factors that deter people from not using the car are not amenable to government action.

Recommendations

- Bus services should be improved in terms of route coverage, frequency and hours of service
- Car drivers should be made more aware of bus services, both specific services and generally

- The perception of the safety and security of children travelling unaccompanied should be increased, for example, by re-introducing bus conductors
- Taxi-sharing should be encouraged
- Demand-responsive public transport services should be introduced especially for shopping and social trips
- Car drivers should be made more aware of the benefits of walking and cycling
- Walking and cycle facilities should be improved, including better street lighting
- Employers should be encouraged to provide showering and changing facilities for their employees who cycle and walk
- The effects of bad weather should be ameliorated by installing more bus shelters and improving the reliability of bus services
- More local shops and facilities should be developed
- Delivery services from shops should be expanded
- Targets for policies and publicity
- Actions should be targeted where they are most likely to be effective:
    - at those using cars to take children to school rather than those on work and business trips;
    - at the young rather than the old;
    - in urban areas rather than rural;
    - at those with multiple car ownership (and therefore those with higher incomes);
    - at drivers making rather longer short trips rather than those making very short trips.

Report by Peter Gordon, Transport Studies Group, University of Westminster

Travel Plans – The Costs and Benefits

David Pontefract, Regional Director, Oscar Faber

Paper presented to the Transport Economists' Group
University of Westminster
24 May 2000

Introduction

This paper discusses the concept, content and cost of travel plans. Travel plans are fairly new in the UK. They have developed out of the wider transport debate on how to reduce the growth in the length and number of motorised journeys, together with promotion of alternatives means of movement. They can contribute to the broader objectives of sustainability and protection of the environment.

What is a Travel Plan

The definition used here is "A package of measures to reduce car use and transport impacts associated with any organisations activities, addressing:

- staff commuting journeys;
- customer, visitor, student trips;
- business travel;
- deliveries; and
- fleet management."

Travel Plans have been known by many names: Green Transport Plans, Commuter Plans and Mobility Management Plans being just a few. The Department of Environment Transport and the Regions in the UK has recently adopted the simple term 'Travel Plan', choosing to drop the 'Green' tag because they should be seen as dealing with more than just environmental considerations, and dropping the 'Commuter' tag because they can address much more than simply the journey to work.

The United States and parts of mainland Europe, particularly the Netherlands, have been involved in developing and implementing travel plans for many years. It is only in the last few years that travel plans have become an important

aspect of transport planning. Government's attitude to travel plans can be seen from recent policy and guidance:

- Transport White Paper - A New Deal for Transport (1998)

  'We will work with local authorities to help them secure widespread voluntary take up of green transport plans'

- PPG13 Transport - Consultation Draft (DETR 1999)

  'The Government wants to promote the use of green transport plans amongst businesses, schools, hospitals and others'

- Guidance on Full Local Transport Plans (DETR 2000)

  'LTP's should set out how the authority will encourage adoption of travel plans by major employers through partnership with business and the wider community'

The common thread with all of these pronouncements is the use of phrases such as 'work with', 'promote' and 'encourage'. There is no talk of compunction. Persuasion is one of the biggest challenges and potentially the greatest barrier to the widespread adoption of travel plans amongst different organisations.

What's in it for Business?

Travel plans are only likely to be widely adopted if organisations can see that there are real benefits for them in preparing and implementing them. There are undoubtedly significant benefits to be had but the difficulty is in convincing people that they exist and can be attained. Examples of potential business benefits include:

- reduction in costs associated with on-site parking;
- helping to overcome local accessibility problems for staff and visitors;
- access to a larger labour pool;
- reduced costs of business travel;
- improvement to an organisation's environmental image; and
- a healthier and more motivated workforce.

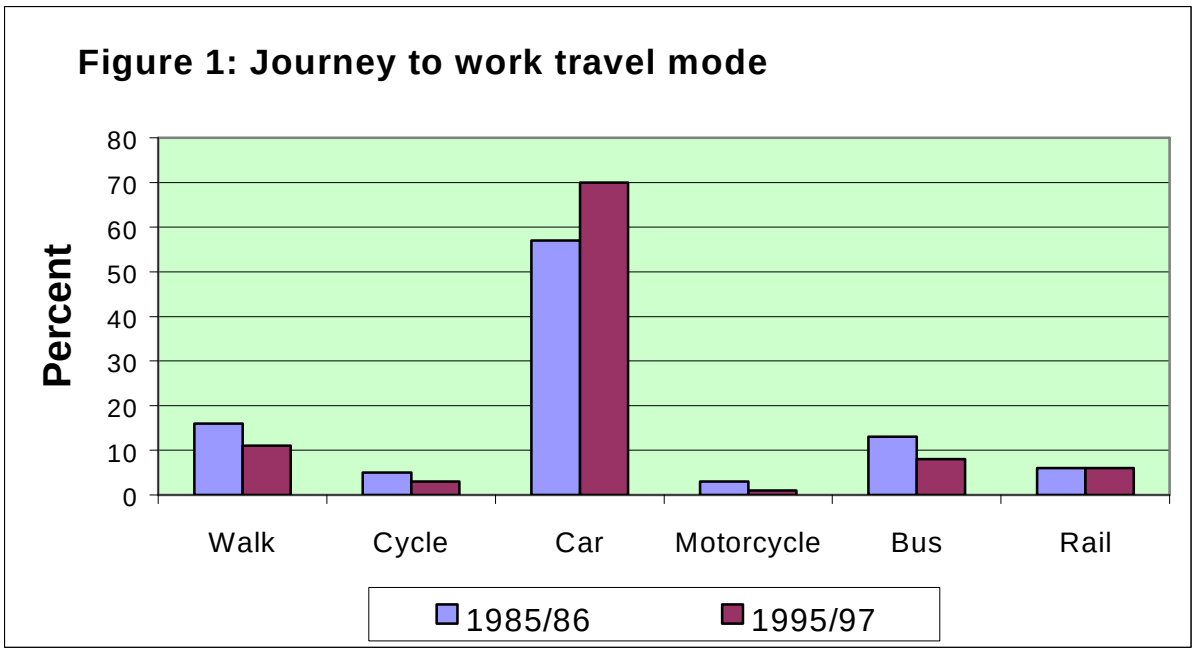
Forward thinking Local Authorities around the country are working hard with local businesses to persuade them of the benefits but under normal circumstances they have no powers with which to require travel plans to be produced.

The one situation where an authority has powers is where an organisation requires the grant of planning permission to undertake development. In such circumstances, and where it is reasonable, the local planning authority can give permission conditional on the preparation and adoption of a travel plan.

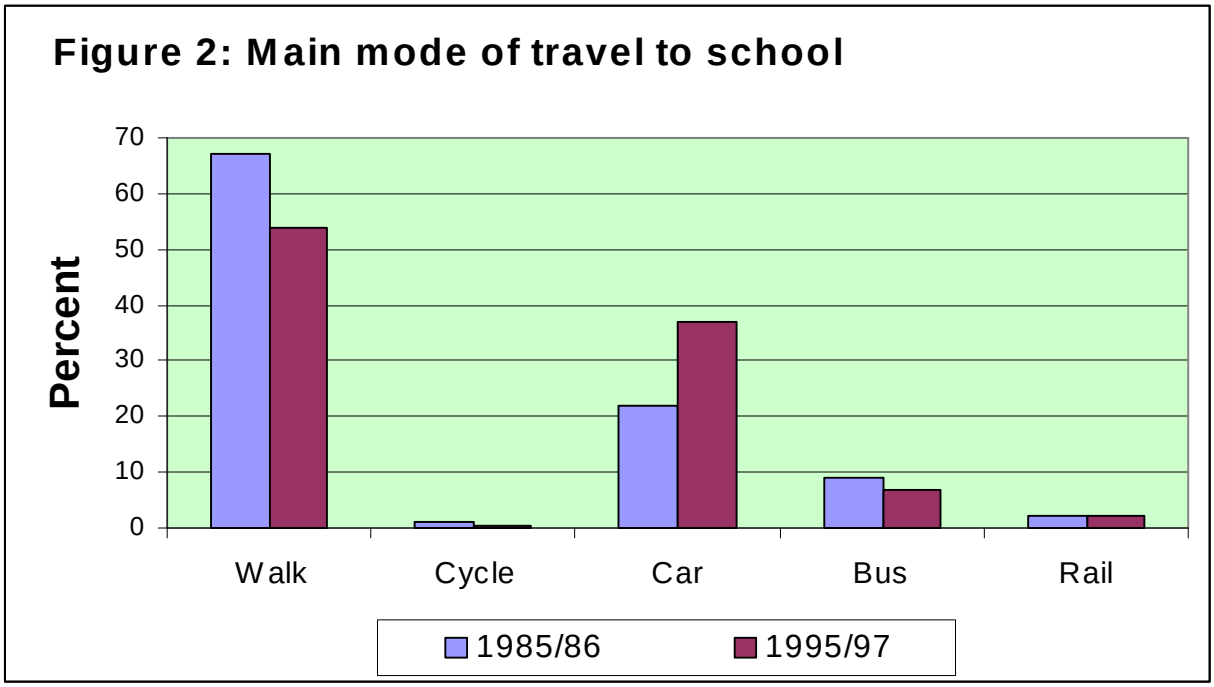
Why do we Need Travel Plans?

We need travel plans to help address the adverse economic, social and environmental impacts of unrestrained growth in traffic.

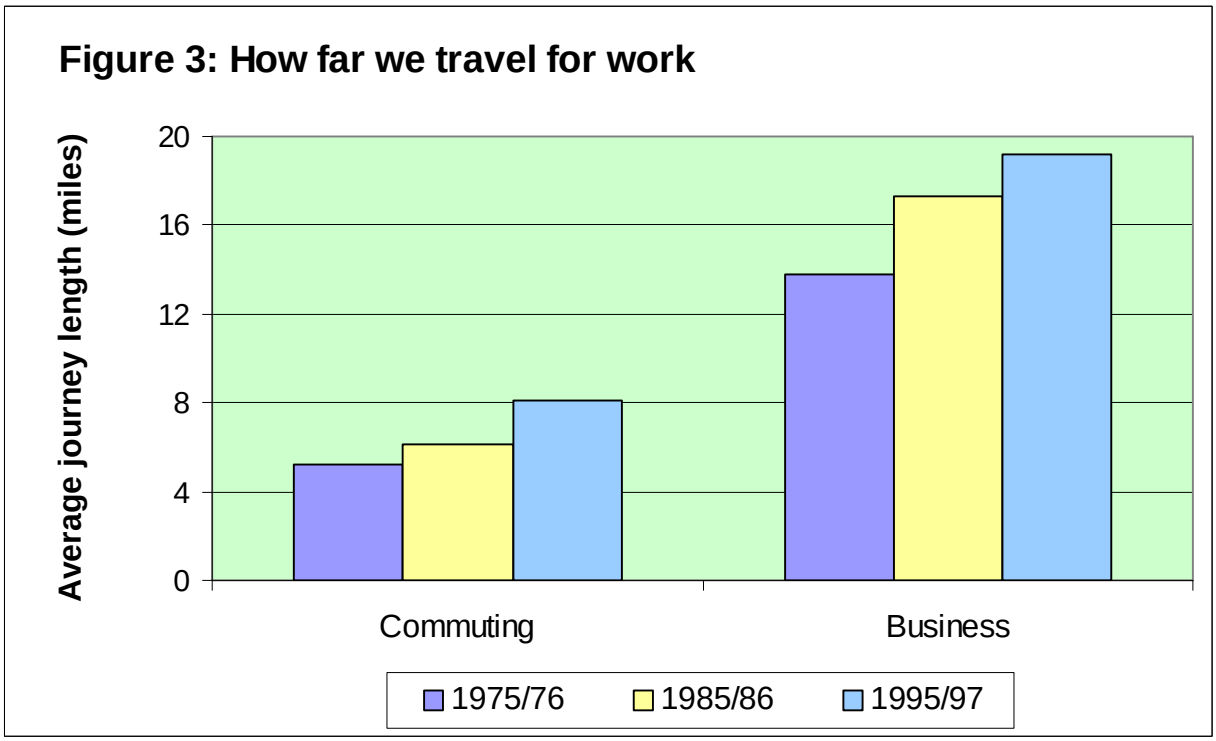
Over the past ten years there has been a significant increase in the proportion of journeys to work made by car and a commensurate fall in travel by all other modes except rail (see Figure 1).



This has been paralleled in the journey to school (Figure 2). Whilst walking amongst primary aged children still dominates there has been a big swing towards more children being brought to school by car at the expense of walking, cycling and using public transport.



The problem is not just related to mode of travel there have also been significant increases in the distances travelled both on the journey to work and for travel in the course of work (Figure 3).



Stages in the Preparation of a Travel Plan

The quality of travel plans varies greatly, the worst are no more than a series of bland statements, and the best are well developed, founded on hard data and objective/target lead.

Whilst all travel plans will be different, as all sites will be different, the best will as a minimum cover the following points:

- understanding of current travel patterns & behaviour through data collection and surveys;
- setting of objectives, targets and indicators;
- identification of travel plan measures;
- proposals to raise awareness and market the plan; and
- proposals for monitoring and review.

A Travel Plan Toolkit

As I have stated previously all plans are likely to very different and the best will be framed so that they address in the most efficient way the problems to be overcome and they will consistent of initiatives that not only are targeted to meet the specific objectives of the plan but are both practical and can be implemented.

The final initiatives may be small in number and focussed on a single mode or, particularly with larger organisations, may cover many different aspects. One useful way of categorising initiatives is by travel mode, effectively a 'toolkit' type approach:

- **Car Travel** – car travel initiatives will generally be aimed at reducing either the volume of private vehicles, the distance travelled by those vehicles or their environmental impact. Specific initiatives might include:

    - Car sharing, where the target is to reduce the number of single occupant journeys. This is most successfully done where an organisation assists individuals to find potential car sharers.

    - Emergency ride home. One reason given by people that would not consider car sharing is the difficulties that arise if the car share lift home does not for some reason materialise or if an individual has to go home during the working day in an emergency. These circumstances can be overcome if the organisation offers to arrange an alternative lift home.

- Phase out company cars. The current system of taxation of company cars, with reduction of the value of benefit in kind for higher mileage, encourages greater use. Also having a company car often leads to car commuting even where viable alternatives exist.

- Revise mileage rates. Typically mileage rates paid for travel in the course of business increase with the size of a vehicles engine. A change to higher rates for smaller or more fuel-efficient vehicles will have an environmental benefit.

- Convert fleets to be more fuel/environmentally efficient. Compressed natural gas, liquid petroleum gas, electric or combined power vehicles will result in reduced vehicle emissions.

- **Car Parking** – the management of car parking is complimentary to initiatives relating to car travel. Potential options are:

  - Charging an economic rate for car parking spaces to suppress demand and generate revenue to spend on other transport initiatives.

  - Give priority to car sharers and other 'essential users' to encourage a more responsible use of private vehicles.

  - Offer cash to hand in car parking permits as a one off incentive.

  - Re-allocation of car parking to other uses if measures to reduce demand are achieved.

- **Walking and Cycling** – if people are not going to travel by car but they are still going to travel to their place of work, their place of study, the shops etc they will need an alternative. Walking and cycling are to be preferred because of their minimal impacts and health/fitness benefits but will only be practical over relatively short distances. Possible solutions include:

  - Active promotion of health and fitness benefits.

  - Putting pedestrians and cyclists first on site through positive intervention and priority over private vehicles.

  - Introduction of safe and secure cycle parking facilities to allow bikes to be left without fear of theft or vandalism.

  - Providing changing rooms, lockers and showers.

- Setting up a walking and cycling club to promote their adoption internally and to provide a focus for lobbying of the local authority for more and better facilities off-site.

- Offering discounts on bike hire and purchase.

- Introduction of bike mileage payments.

- **Public Transport** – can provide an alternative to those who have to travel longer distances. Experience, however, shows that it will only be effective if it is attractive, convenient, speedy and competitively priced. Particular initiatives could include:

  - Providing ready access to 'real time' travel information allowing up to the minute decisions on when to travel to be made.

  - Negotiation of public transport fare discounts. Many operators and transport executives are prepared to offer discounts where there is the potential for bulk purchase or new customers.

  - Providing works/office buses where the organisation is large enough and there are sufficient employees living in relatively close proximity.

  - Identifying potential demand and discussing routes and timing changes with operators.

  - Utilising existing park and ride. Many park and ride sites are at their busiest at a weekend with parking spaces available during the week. Where this is the case it may be possible to run dedicated journey to work park and ride services in the morning and evening peak periods to particular locations that may not be well served by existing routes.

- **Management** – not all initiatives need be related to a particular mode of travel, some may be related to the way the travel plan process is managed and could also be related to the way an organisation runs its operations. These could include:

  - Appointing a travel co-ordinator to be responsible for all stages of a plan's development and for its implementation.

  - Setting up of a working group to support the work of the co-ordinator and to bring specialist skills and the views of particular groups. The working group could include individuals from outside of the organisation such as a local authority TravelWise officer and a representative of the public transport operators.

- Appropriate staff can be encouraged and supported in working from home so avoiding the need for any travel at all. In very simplistic terms if everyone who drove to work, worked from home one day a fortnight, total private vehicle travel related to the journey to work would be reduced by 10%.

- Compressing of working hours where two weeks working hours are worked over nine days can have the same effect.

- To assist in minimising the impact of travel staggered working hours for employees and students could be introduced.

- With the changes and improvements in communications technology tele- and video-conferencing can be a real alternative to travelling to meetings.

Costs and Benefits

An organisations first reaction when considering a travel plan is often that it will cost them a lot of money and there will be nothing tangible in return. Widespread adoption of plans will only occur if this is neither perceived or actually the case.

Costs will usually fall under one of a number of general headings:

- Travel plan co-ordinator;
- Surveys and questionnaires;
- Staff time for meetings etc;
- Publicity and marketing preparation & materials;
- Monitoring; and
- The physical measures which support the plan.

It is difficult to be precise about actual costs because so much will depend on the specifics of an individual site, but typically they might be:

- Travel Plan Co-ordinator - £20,000 per year;
- PT timetable racks - £100;
- Rail Planner etc - internet access charges;
- PT subsidies - £10,000 to £250,000 per year;

- Home working - maximum of £1,000 for hardware;
- Cycle stand/locker - £50/£250 each;
- Showers - £1,000 per cubicle; and
- Emergency ride home - £25 per year per 100 staff.

Benefits need to be treated very differently. Many of the benefits of a successful travel plan will not necessarily or directly benefit the organisations involved or its employees. Improvements to traffic congestion and the environment for example will be valuable, important and be for the greater good but they will not change the company 'balance sheet'.

Nevertheless it is still important to identify potential sources of benefit:

- Savings attributable to reduced car park provision and maintenance;
- The opportunity to use car parking land for other uses;
- Homeworking and compressed working can reduce office space required;
- Less travelling can mean a more productive workforce; and
- Savings can be made in business mileage.

Again quantification can be difficult but typical and common values might be:

- Increase parking revenue where charging is introduced - £500 per space per year;
- Saving money on the cost of valuable development land (build on the car park not on new land) - £1 to £20m per hectare dependent on location and land use;
- Tele/video conferencing - up to £70,000 per month saved on business travel (Royal Bank of Scotland);
- Avoiding car parking capital costs - £800 to £5,000 per space;
- Avoiding car parking operating costs - £100 per space per year; and
- Restructuring of mileage allowances - up to £1m per year (Nottingham County Council).

Taxation and Travel Plans

Until recently the Treasury's taxation rules worked against the introduction of travel plans by taxing employees on the benefit in kind value of some fundamental elements of a travel plan.

The situation since 1999 has been much improved and employees are no longer taxed on:

- Using works buses with 17 or more seats;
- Interest free season ticket loans up to £5,000 per year;
- Subsidies for services on which employees pay the same fare as the public;
- Bicycles and bike safety equipment provided for journey to work; and
- Workplace cycle and motorcycle parking.

Additionally employers can now pay a tax-free cycle mileage rate of 12p and are able to give tax-free payments to transport employees home when lift sharing fails.

Further research is currently being undertaken in an effort to identify any further anomalies.

Case Studies

One of the difficulties associated with determining the costs, benefits and effectiveness of travel plans is the paucity of good plans and more particularly quantitative evidence on their effects. By way of example here are a few case studies.

Derriford Hospital Plymouth – is an acute hospital in Devon which developed a travel plan in 1996 in response to parking problems and the need to expand operations both in terms of patient and staff numbers. The Plan consists of:

- 50p parking charge
- £134 Bus Season Ticket Subsidy
- Car sharing database
- Interest free bike loans
- trial park and ride scheme
- taxi sharing scheme
- publicity via 'Travel News'

The Benefits

- modal shift of 400 in 3 years
- saving of £2m on car parking
- increase in staff & visitors but no parking
- 40% increase in bus use
- 120 cars shared each day
- improved pedestrian & cycling facilities

Manchester Higher Education Precinct – Oscar Faber are currently working towards development of a travel plan for five organisations (University of Manchester, Institute of Science and Technology, Royal Northern College of Music, Manchester Metropolitan University and Central Manchester Health Trust) all located within a small area of south central Manchester.

One of the most important decisions is how to deal with staff car parking for the 16,500 employees which is currently not charged at a full commercial rate. To demonstrate the significant additional revenue that could be generated from commercial charging, which could be diverted to funding travel plan initiatives, the organisations have been presented with the following information.

It is apparent therefore that there is significant scope to generated additional revenue from car parking charges, although the full benefit will not accrue to the organisation as the VAT collected has to be passed on to the Treasury.

Table 1: Manchester Higher Education Precinct - Options for Charging

		Option A		**Option B**	
	Current	**Commercial Rate £2.00 per day**		**Subsidised Rate £1.00 per day**	
	Annual revenue	**Annual revenue**	**Increase in revenue**	**Annual revenue**	**Increase in revenue**
RNCM	£0.01m	£0.06m	£0.05m	£0.03m	£0.02m
UOM	£0.82m	£2.55m	£1.73m	£1.28m	£0.46m
CMHT	£1.04m	£1.72m	£0.68m	£0.86m	-£0.18m
MMU	£0.00m	£0.83m	£0.83m	£0.42m	£0.42m
UMIST	£0.25m	£0.83m	£0.58m	£0.42m	£0.17m
Total	**£2.11m**	**£6.00m**	**£3.89m**	**£3.00m**	**£0.89m**

School Travel Plans – at least as much work has been done in relation to travel planning for schools and there is also probably more data available. High profile examples include:

- Wheatfields School - 30% reduction in car trips & 30% increase in walking within 18 months resulting from the introduction of ‘Walking Buses’
- Royal School Camden - 24% reduction in car use in 24 months with major increase in car-sharing brought about through planning agreements related to proposals to expand the school
- Lingfield Primary - 55 children who came by car now catch one of two new school buses
- Kesgrave School - Increase in cycling from 45% to 61% in three years through continuing development of cycle facilities supported by training and education initiatives
- Huntington School - 45% speed decrease and 25% reduction in flow outside school resulting from the introduction of a comprehensive traffic calming scheme outside the school

Heathrow Airport – is one of the largest organisations in the country, which has adopted a Travel Plan.

The Plan:

- Travelcards offering 80% discount
- cash alternative to company car
- £200 payment to give up parking space
- computerised car share scheme
- partnership with local public transport providers (£5m in 3 years)

The Benefits

- Increase in workforce using public transport - 13% to 19% (92-99)
- Increase in workforce using buses - 6% to 11% (92-99)
- Reduction in staff driving to work - 78% to 71% (92-99)
- future investment of £500m in improving public transport in London and the South East

Summary

The development and adoption of travel plans by all types of organisation has the potential to contribute significantly to the Government's objectives of reducing the growth in the length and number of motorised journeys and the promotion of alternatives means of movement.

Take up by existing organisations has been relatively slow except in cases where they have been a prerequisite of planning approval for development. The primary reason for the slow uptake has been the difficulty in an organisation understanding the benefits that there are for them. The pace of adoption is increasing largely as a result of the work done by DETR and by local authorities in encouraging and persuading organisations of their benefits.

Discussion

Neil Fleming (LT) pointed out that VAT is charged if the company charges for a facility. Peter Collins remarked that the same organisations are always mentioned, and enquired if there is information on the level of penetration and success of schemes.

David Pontefract replied that a University of Westminster study two years ago had monitored take-up of schemes, and found the take-up was fairly low. They are on the increase but still a small number of companies, with some very high profile examples. David is currently doing research on the effectiveness, but the take-up is still "below the bottom rung".

Peter Collins followed up by saying that local authorities have an important role through Local Transport Plans and planning permissions.

John Cartledge (LRPC) opined on the power of example by citing that teachers enjoy free parking at schools and this makes it difficult to persuade parents to reduce car use.

David thought that this is a very real problem. In Manchester, he had talked to education people, but he still thinks teachers are a difficult "nut to crack" with views such as *"I'm a teacher, I don't want to live near students"* or *"I've a lot of marking to carry"*. Local authorities are generally poor examples, central government is better!

Richard Finch (Camden) said that most London councils are developing a plan for their staff. David agreed that London is a good example, noting that the City of York is embarrassed by slow development.

Peter White asked what the position is on subsidies for public transport. David stated that it is taxable, which probably needs relaxing if incentives are to be provided for schemes.

John Cartledge pointed out that subsidies might encourage people to travel more, to which David agreed. Richard Finch added that if people get travelcards, they could be used for other journeys outside work.

Peter Gordon asked if thought had been given for local authorities taxing parking spaces and hypothecating the revenue. David fears that nothing will happen for a few years. There are fears about competition between areas.

Neil Fleming suggested that it would be interesting to see if tax changes for company cars leads to mode changes. David Pontefract thought that large cars will be taxed more first, but that the government has to be wary of the electorate. It does not want to push too hard, too quickly.

TEG NEWS

REPORT OF ANNUAL GENERAL MEETING, MARCH 2000

The Annual General Meeting of the Group took place on the 22nd March 2000 with eight people in attendance.

CHAIRMAN'S REPORT

The Chairman, Peter White, reported that there had been a wide range of meetings on topical subjects throughout the last year. From the last AGM, these talks comprised:

March 1999	*Bus quality corridors* (Malcolm Roberts of Colin Buchanan and Partners)
April 1999	*Sheffield Supertram Developments* (Phil Haywood, SYPTE)
May 1999	*London River Services* (Andy Griffith of London Transport)
June 1999	*Rail rolling stock evaluation* (Mark Wardman, Leeds University)
October 1999	*Railway Regulation in the first five years* (Chris Bolt, former Rail Regulator)
November 1999	*Experience of low-cost airlines in Europe* (Nigel Dennis, UoW)
December 1999	*Financing British Transport Police* (John Bentley of British Transport Police)
January 2000	*Road user charging in London* (Reg Evans, Halcrow Fox)
February 2000	*Bus issues in the Transport Bill* (Peter White)

Particular interest was shown in the Supertram, Rail Regulation and Road user charging meetings.

After the successful first joint meeting with the London Association of the Institution of Civil Engineers held in February 1999, a second joint meeting was held in January 2000 (Road user charging). We intend to maintain this successful development and seek similar joint ventures with other groups.

For some time we have not had a seminar outside the evening meeting programme, but one is now being arranged for June, jointly with the Transport Planning Society, on the theme of developments in appraisal methodology.

Thanks are due to other committee members for their work in maintaining the Group's activities, especially Don Box as Treasurer and Membership Secretary, and Laurie Baker as Publications Editor. It is also appropriate to mark the fact that Peter Collins, Vice-Chairman, retires from his post at LT next week after 35 years with the organisation. We wish him well in his 'official' retirement but nonetheless hope to see him continuing with his role in the TEG. I understand

that existing committee members are willing to stand again for the coming year, but new members to the committee will be very welcome.

The TEG was originally set up as an offshoot of the Society of Business Economists (SBE) in 1973, but for many years contact had been lost with that organisation. However, I have been able to re-establish the link during this year, and notices of our meetings now appear regularly in the SBE monthly members' newsletter.

TREASURER'S REPORT AND ACCOUNTS

The Treasurer, Don Box, introduced his report and the accounts for 1999:

1. The result for 1999 is a large loss of £509, which represents a considerable deterioration of the financial situation compared to 1998. Members will recall that some alarm was expressed in my report for 1998 at the decline in membership and the increases in costs of publication and room hire, which were not envisaged to be experience in 1999. In the event, the decline in membership has increased, the costs of meetings increased, but publication costs have (perhaps temporarily) diminished.

2. The breakdown of expenditure between the main items of administration, publications and meetings, compared with the two previous years is:

	1999	1998	1997
Administration	£873	£744	£829
Publications	£874	£967	£758
Meetings	£1,142	£936	£843

3. The substantial rise in the cost of meetings was partly due to exceptional travelling expenses for visiting speakers, which should not be repeated this coming year, and to room hire. Publication costs are expected to be about the same in the coming year as is recorded for 1999. Administration costs should decline as we make further efforts to co-ordinate postings of notices and journals, and use e-mail for correspondence where possible. (Members will have noticed that this year's subscription renewal notice requests e-mail addresses.) On the income side. Members will have noted on their renewal notice an increase to £18 in the subscription rate.

4. The reduction in costs and increase in subscription rate, and assuming membership is stabilised at the current level, should result in halving the 1999 loss. But to put the finances in good shape, a significant increase in membership is required to the level of three years ago (around 160). Several initiatives are to

be taken to achieve this, including an approach to consultancies, academic institutions and other organisations where we are currently lacking representative members. As recorded in the report for 1998 we are expecting our entry onto the "web" (currently being developed and which will incur some running costs - the initial cost will come from reserves) to help with recruitment.

5. At 31 December 1999 there were 135 members paid-up for the year, which is a decrease of 15 from 1998 level. There were only three new members enrolled for 1999, which gives 18 lapsed during the year. Included in this last figure there were retirements from the "industry" and one death (Ian Harder), which was recorded in the Autumn issue of the Journal.

Income and Expenditure Account for 1999

		£	£
Income			
Subscriptions	1998	-	
	1999	2,295	
Interest		69	
Other		46	**2,410**
Expenditure			
Administration	Secretary	794	
	Other	79	873
Publications			874
Meetings	Room hire	685	
	Entertainment & expenses	319	
	Insurance	138	1,142
Corporation tax			30
			2,919
Excess expenditure over income for the year			**509**

Balance Sheet

Accumulated funds at 31.12.99		
Less: loss for 1999	3,551	3,042
Creditors	509	510
		3,552
Represented by:		
Deposit Account	2,389	
Current Account	1,819	4,205
Less: uncleared cheques		653
		3,552

REPORT OF THE AUDITOR

To members of the Transport Economists' Group: I have examined the records of the Transport Economists' Group and have received explanations from your Treasurer as necessary. In my opinion the Balance Sheet gives a true and fair view of affairs as at 31 December 1999, and the Income and Expenditure Account properly reflects the excess of expenditure over income for the year then ended.

Signed: J C Bentley FCCA

ELECTION OF COMMITTEE FOR 2000

Members of the existing committee were re-elected with the addition of Roger Mackett and Peter Gordon. The committee for 2000 is:

CHAIRMAN - **Peter White**

VICE CHAIRMAN AND SECRETARY - **Peter Collins**

TREASURER AND MEMBERSHIP SECRETARY - **Don Box**

PUBLICATIONS EDITOR - **Laurie Baker**

PROGRAMME CO-ORDINATOR - **Stephen Bennett**

PUBLICITY OFFICER - **Martin Lawrence**

COMMITTEE MEMBERS - **Roland Niblett**, **Roger Mackett, Peter Gordon**