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EDITORIAL

It is fifteen years since I began editing the Journal with the spring issue in 1991 (Volume 18, issue 1), taking over from my predecessor, Stuart Cole at the former North London Polytechnic¹.

It has been an enjoyable experience editing the Journal and has given me greater insight into the world of transport economics. I am honoured that I have been able to serve the Transport Economists' Group in this way.

I have now decided it is time pass the editorship on to a younger person. Your Committee have already started to make improvements with a redesign of the cover, which was done by our friends at Steer Davies and Gleave. Peter Gordon takes over as editor who, I am sure, will develop the Journal further. It is always with some sadness that one moves on but I am sure that the next editor will give good stewardship.

Laurie Baker
Editor

¹ Professor Cole is Director of the Wales Transport Research Centre at the University of Glamorgan and a member of Transport Economists' Group

Reports of Meetings

A vision for the development of rail in London

Ian Brown, Managing Director – London Rail

Arup Head Office, 13 Fitzroy Street
28 September 2005

This talk has not been reported but members will have received a copy of the presentation by email. Below is a brief summary of the talk.

Historically, National Rail services have tended to be nationally provided and nationally planned; as recently as the now dissolved Strategic Rail Authority. Whilst there is undoubtedly a national strategic role in determining rail services as evidence of the new DfT Rail group, there are serious concerns about the accountability of National Rail services and opportunities missed for integration into city transport plans.

Transport for London was set up against just such a background i.e. National Rail services remaining controlled by the SRA and train operating companies seeing issues such as fares, except regulated fares as their risk. The challenge is growth, both in the form of new rail projects such as Crossrail but also in the form of increasing the capacity of the existing rail system at a realistic cost. There has to be a client for this. TfL has changed its organisation to include a rail group led by Ian Brown as its Managing Director.

The population of London continues to grow and this must be planned for if London's contribution to the UK economy is to be maintained in the form of a viable capital city. TfL is developing a vision for rail services and rail projects in London both in terms of their capacity and the opportunity to integrate planning with Tube and bus services. Ian Brown described TfL's Vision work, setting out the framework for the development of National Rail in London.

See “Transport 2025: Transport Challenges for a Growing City”, which can found at <http://www.tfl.gov.uk/tfl/downloads/pdf/T2025.pdf>

Transport Direct

Creating a National Transport Information Portal

Chris Gibbard
Development Manager: Transport Direct (DfT)

Arup Head Office, 13 Fitzroy Street
14 December 2005

Background

Chris Gibbard began his talk by mentioning that he personally was fond of the Thomas Cook European Rail Guide and enjoyed exploring the Thomas Cook recommended scenic routes. However, this was not the general public's approach to travel information that concentrated on how to travel from A to B. Transport Direct became in its first year a World First but it now needs to move to World Class. The project was initiated by the Department for Transport in 2000, the aim being to improve travel information and to remove barriers by producing a One Stop Shop. There had been debate as to whether travel by private car should be included and how this could be put on a level playing field with the public transport modes (for which the public expect timetables and operator accountability). It was decided that it was right to encourage people to consider what were sensible options. Impartiality was considered of key importance.

Creating Transport Direct

A Consortium was formed to design, build and operate the system. Table I shows the contributors.

Table I: The Transport Direct Consortium

◆ Atos Origin	<i>Prime contractor / lead developer</i>
◆ Atkins	<i>Journey planning</i>
◆ BBC Technology	<i>Web interface (initially)</i>
◆ ESRI	<i>Geographic Information System (GIS)</i>
◆ Kizoom	<i>Mobile and other channel delivery</i>
◆ Microsoft	<i>Development partner</i>
◆ RTEL	<i>Air schedule expertise</i>
◆ Others	<i>Specialists as require</i>

An important decision was to use as many *existing* data and services as possible, Microsoft.net being chosen as the system core. The aim as far as the technology was concerned was for it to be comprehensive, easy to use and fast. It was envisaged that users would basically divide into those wishing to investigate an unfamiliar journey in full and those with one particular question. It was clear that the project would only be a success with the full support of the public transport operators and much time was expended in discussion and asking for advice, impartiality again being stressed. It was also considered vital that the package should fit in with the existing range of e-services, such as that of NHS Direct. There was to be emphasis on presentation. (Presentation issues for those with disabilities include matters such as making the font size changeable by the user and using appropriate colour contrasts). Already some public kiosks offer access to Transport Direct.

Joining up the modes

Transport Direct passes queries to local area data bases, such as those in the ten Public Transport 'traveline' regions into which the country is divided. The 'Wait' instruction to the user covers the interaction with the local information. The combining of public and private modes was not a trivial task, as may be seen from the difficulties experienced in matching ferry links with both road and public transport access. Linking with air was even more challenging and the links between air terminals and the appropriate nodes had in each case to be specially derived. The inclusion of walking and cycling is not yet satisfactory; walk trips do not necessarily follow the digitised road network and digital maps of cycle networks are generally unavailable. Table 2 lists the locational questions.

Table 2: Location Based Travel Planning

- **The complexity of life requires awareness of location and the ability to travel between places**
 - ◆ **Where I live**
 - ◆ **Where I work**
 - ◆ **Where I shop**
 - ◆ **Where my children go to school**
 - ◆ **Where I get healthcare**
 - ◆ **Where my family and friends live**
 - ◆ **Where I go for leisure**

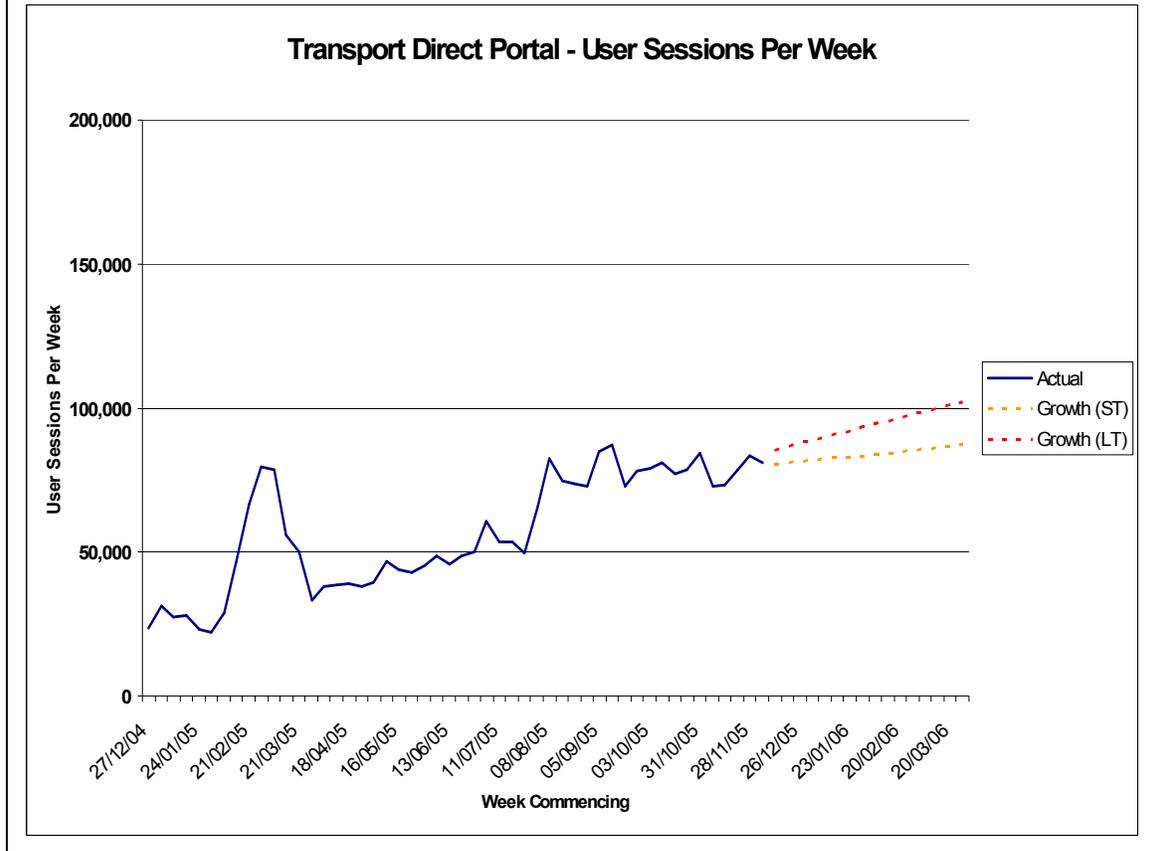
- **Where we are is inevitably a compromise, and mobility is the key to reducing hassle!**

Funding and Take-up

The budget for the three year development programme was £57m, of which £49.2m is expected to have been used by March 2006. Almost £30m of this will have been on the Portal. Among the causes contributing to the expenditure are the sending of 'hit squads' to Local Authority areas to codify bus schedules to individual bus stops.

Figure 1 shows the User Sessions per week, as recorded in 2005 and as forecast for the following quarter. The initial publicity in March 2005 resulted in a large increase which was not then sustained. Later more targeted promotions have since resulted in a steady increase in patronage and the target of 10 million user sessions by the end of 2006 seems achievable. Various methods of web advertising are being used and techniques such as 'page landing' allow links to be inserted in relevant other sites. Much business use has been observed.

Figure I: Usage



User Feedback

Users are invited to contact Transport Direct and the feedback has been overwhelmingly positive, with three times as many overtly complimentary comments as negative ones. Helpful corrections were initially common but are becoming fewer as errors are eliminated. A quarter of the e-mailed comments are requests for routes, which is not an offered e-mail service. Initial results from a very recent 'pop-up' survey showed that 18% of users were obtaining information for colleagues or friends; 45% were first-time users and 22% were weekly users. Transport Direct was being consulted by 35% of users for business trips and for leisure trips by 40% (but both mainly in business hours). Interestingly 61% believed (erroneously) that the system was faster than any alternatives. An astounding 64% of all respondents (including 32% who had actually made the planned journey previously) stated an intention to change their behaviour as a result of the results of their enquiry. The details of these proposed changes are shown in Table 3.

Table 3: Intended changes to journeys

- **64% of all respondents stated an intention to change behaviour following use of Transport Direct; of these:**
 - ◆ **33% would change public transport mode(s)**
 - ◆ **23% would switch from car to public transport**
 - ◆ **20% would switch from public transport to car**
- **32% of all respondents had made the planned journey before; of these:**
 - ◆ **51% would change their previous behaviour, of which 39% intend to change time or route**
 - ◆ **6% would switch from car to public transport**
 - ◆ **3% would switch from public transport to car**

Data Collation, Contracts and Future Plans

Transport Direct data come from many hundreds of sources, with the main potential for improvement lying with locational and bus service information from the 141 Local Authorities. If, in particular, bus operators and Local Authorities were to adopt Electronic Bus Service Registration and to supply the resulting data to Transport Direct the reliability of the service would be greatly enhanced. Detailed work continues with the Vehicle and Operator Services Agency and with many other key data suppliers such as Traveline regions, National Rail, coach operators, Ordnance Survey, TrafficLink, POINTX, OAG, ferry operators and toll operators. Agreements of greater or less formality, ranging from informal letters to full DfT contracts, already exist with about 60 bodies and between 30 or 40 more are expected to be made in the next two to three years. It is a key policy not to display data without the agreement of the owner.

Work is proceeding on extending delivery channels to include large, television-type screens (including digital) with keyboard, mouse or remote control and also small (hand-held) screens with limited keyboard and various pointing devices. Since the formal launch it has become possible to receive travel news and departure boards on mobile devices and maps of travel incidents and park and ride links have been added to the PC options. Important new additions are the option for price-based journey planning and the inclusion of congestion

influenced road traffic times. After much discussion the default option for the cost of car travel is the marginal cost of fuel. The results of a fare-based search for a rail journey from London to Bradford within a specified two day window showed an adult fare range between £9.50 and £150.00, with the highest fares identified with the highest probability of availability.

Concluding Remarks

Chris Gibbard concluded his talk by pointing out that Transport Direct is up and running and that both private individuals and businesses are benefiting from using it. Data quality and management is the key to good information provision. The audience were encouraged both to experiment with the system (www.transportdirect.info) and to peruse the background material available (www.transportdirect.gov.uk).

Discussion

Questions and comments were then invited from the audience.

The Chairman asked about the difficulties of dealing with interchange times, pointing out that these could be specific to the individual user.

Response: Transport Direct accepts available data e.g. that supplied by National Rail, as true. There are, however, options for the user to override provided times.

Gregory Marchant asked about the assumptions made concerning the willingness of the user to walk.

Response: Some changes in these assumptions have been made since the initial launch. Some problems arise when a town rather than a postcode is given as a location and the journey is assumed to start from a central point. The best option is for a user is to register with Transport Direct and then to log individual preferences.

Francesca Medda (UCL) asked about provision for the blind and for those with walking problems.

Response: Where a local disabled information service exists, as in London, it is used.

Fred Gangemi (SDG) questioned whether the policy of strict impartiality should not be abandoned in order to promote more environmentally friendly travel.

Response: Such a policy might be adopted at some future time. Currently the aim is to give information on the journey duration and cost and to leave the user to decide his or her best option.

John Cartledge asked how the speaker could claim that the initial reaction had been good when the media had been so discouraging. He also complained that 'This information is currently not available' was not a satisfactory message to receive.

Response: Never mind the media, the feedback and consumer research shows that actual users are enthusiastic. More detailed explanations of problems were planned.

Dick Dunmore (SDG) asked about data cleaning and how nonsensical routes were identified. He also commented, from personal experience, on how the system could identify blatant mismatches of actual schedules such as ferry crossings.

Response: All feedback of erroneous or mismatched services is reported to operators.

Nigel Shepherd commented that the technology was impressive and that the political drive was apparent but wondered whether Transport Direct was actually needed.

Response: The project was scheduled for three years with a subsequent review so this question would obviously be addressed soon.

David van Rest asked whether the TfL website was used by Transport Direct.

Response: Yes, Transport Direct queries involving public transport journeys in London were handled by TfL in real time.

Alan Peakall asked whether the project would change the behaviour of Public Transport operators.

Response: Give it time. They are in the market to sell products, but would expect improved access to information to have some effect.

This concluded the session. Speaking as an ex-rail man and one who also had experience in buses, the chairman thanked the speaker for a talk which he personally had enjoyed greatly. The audience response showed that they had also.

Report by Jill Beardwood

Eurotunnel

How did we get here and where to next?

Hugh Ashton
Associate, Steer Davies Gleave

Arup Head Office, 13 Fitzroy Street
25 January 2006

Introduction

Hugh noted that it was 20 years since the Eurotunnel concession agreement had been signed in 1986 and that only the previous day, 24 January 2006, Eurotunnel had carried its 10 millionth truck since opening for business in July 1994. A show of hands showed that most of the audience had travelled through the tunnel and that some were shareholders in it.

Hugh explained his role working for Eurotunnel's lenders and the necessary restrictions on discussion of confidential information. He proposed to use publicly available material to describe the background to the project and "the problem" before describing the characteristics of each of the markets in which it operates.

Background

In 1986, Eurotunnel won the concession competition to build a fixed link across the Channel in the form of a rail tunnel carrying four types of trains. Eurotunnel would use half the tunnel's capacity of 20 paths per hour to operate Folkestone to Calais shuttle services for trucks and cars. The railways, SNCF and BR, bought the other half of the capacity to operate passenger services, which became Eurostar, and bulk and non-bulk freight services. For this capacity the railways pay tolls per passenger and per tonne, subject to a Minimum Usage Charge (MUC) until the end of November 2006. In 1987 the necessary legislation was passed and in 1994, services began, with "le Shuttle" in July and Eurostar in November.

In current terminology, Eurotunnel acts as a railway undertaking. It operates up to 6 truck shuttles per hour (10-minute headway), carrying driver-accompanied trucks and competing with ferries across all routes to and from Britain carrying both accompanied trucks and unaccompanied trailers. It also operates up to 4 passenger shuttles per hour (15-minute headway), carrying high vehicles such as coaches and caravans (single deck front of the train) and

cars (double-deck rear of the train), and competing primarily with the ferries across the Dover Straits.

Eurotunnel also acts as infrastructure manager for the services provided by “the railways”. These include up to four Eurostars per hour between London and Paris, Brussels and other destinations, competing mainly with the airlines. There are also 2-3 Railfreight services per hour (collectively consuming up to 6 paths as a result of speed differences) for bulk and unitised goods, competing primarily with shipping of goods in containers, trailers or trucks.

The technology of the tunnel and the various train services resulted in a number of differences between the economics of the tunnel and the competing ferries.

	Ferries	Eurotunnel
Fixed infrastructure costs	None	High
Variable operating costs	High	Low
Vehicles' flexibility	Truck or coach or car or trailer or containers or new cars	Truck single deck
		Coach single deck
		Car double deck
Vehicles' alternative uses	Worldwide	None
Terminal areas	Flat quayside easily switched between activities and even operators	Truck route
		Coach/high vehicle route
		Car route

The result, Hugh concluded, was the typical railway problem of a relative lack of flexibility.

The problem

1995, the first complete year of operations, produced a number of surprises. The ferries did not remove capacity, and instead there was a price war, reducing the prices that all services, including le Shuttle, could charge. Nonetheless, Eurotunnel took around 30% of the car traffic and 36% of the truck traffic on the Dover Straits. Operating costs of almost £300 million were virtually covered by contributions from le Shuttle and the railways, plus a

substantial element from Duty Free and other activities such as the sale of wayleaves for communications cables.

Near-breakeven in the first year could be considered a strong performance in a changing market, but the problem was that Eurotunnel faced not only £300 million operating costs but also £700 million financial expenses.

Hugh said that there was no single cause for these problems and that it was widely acknowledged that a number of things “went wrong”:

- Capital costs had risen: while much of the engineering had been achieved within budget, some additional costs had been incurred, and high interest rates and other delays meant that the accumulated debt had risen. Eurotunnel entered the market with an asset base of around £10 billion compared with around £1 billion for the ferries.
- The ferries remained in the market and continued to reduce both tariffs and costs.
- The economics changed. The existence of Duty Free in the early years meant that Eurotunnel had to offer customers facilities in which to shop, extending overall journey times relative to the ferries, where shopping passed the time on board and the marginal cost of cars, after the profit from sales, was negative.
- Eurotunnel’s product was initially unreliable, either through technical problems or when demand peaks led to queues and delays.
- Eurotunnel could not be operated as an un-booked toll facility: peaky demand, and the need to maximise profits, required a move to the ferries’ approach of advanced booking with different prices for different lengths of stay.

Other surprises followed, illustrating how many markets are less stable than would be desirable when making a long term investment.

1996: a fire on a truck shuttle resulted in repairs to the tunnel and disruption of services for 8 months.

1998: P&O and Stena Line, the principal ferry operators, introduced a joint operation, increasing effective frequency but cutting the cost base for 16 ships to 13.

1999: In July, Duty Free for travel within the EU ended, reversing market growth as the large day trip market went into decline. Demand for car trips fell 25%. In September, a Red Cross centre at Sangatte became home to

asylum seekers who tried to board services. Even with costly preventative measures, which remain in place, the problem was not adequately resolved for 3 years.

2000: Norfolkline entered the market with a Dover-Dunkirk freight ferry.

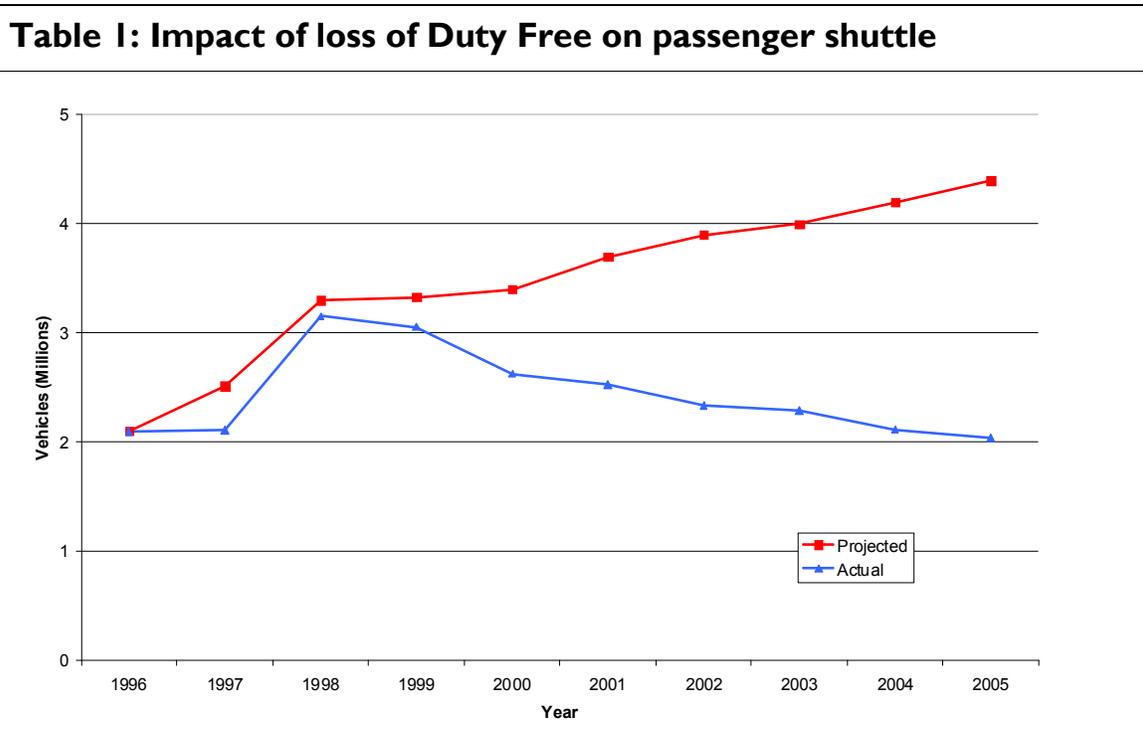
2002: In August, P&O bought out Stena Line.

2004: In May, Speed-Ferries opened a Dover-Boulogne 200-car catamaran service, offering a base fare of £50 return even in summer.

2005: In November, Hoverspeed withdrew the last of its catamaran services between the former hoverports.

The remainder of Hugh’s talk related to the individual markets which the tunnel serves, in particular comparing traffic through the tunnel with the assumptions in the 1997 prospectus issued to support the debt restructuring.

Passenger shuttle

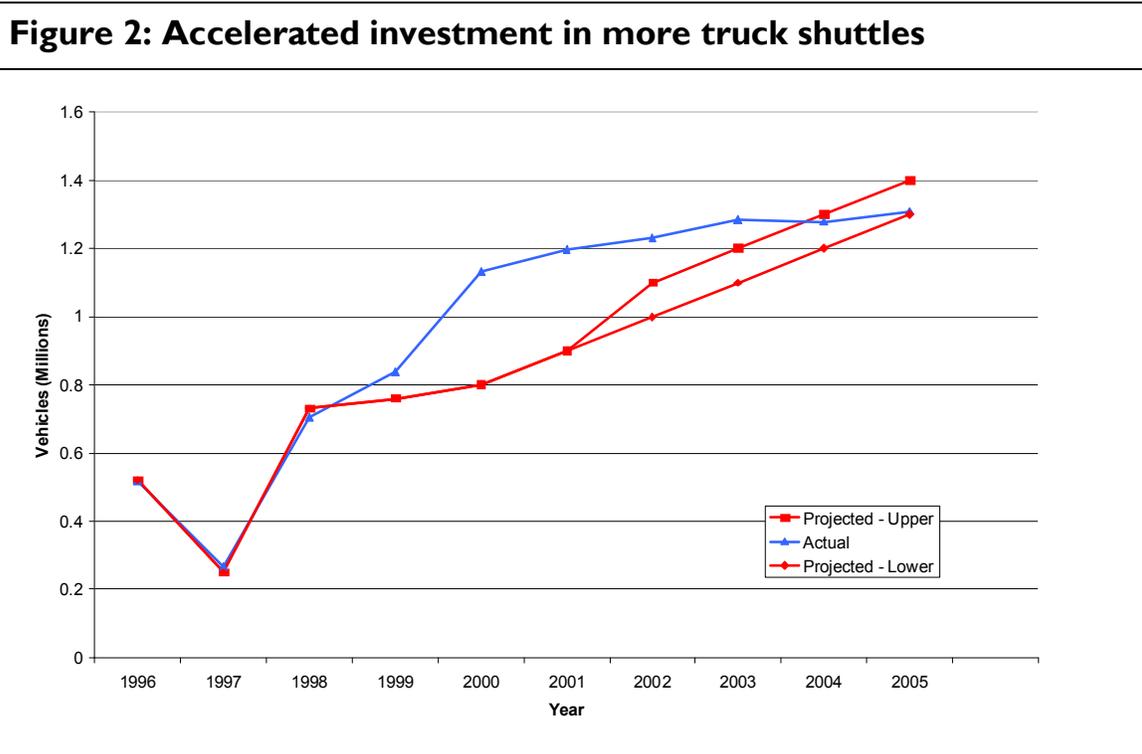


Passenger traffic grew broadly as projected until 1999, since when the total market has been in decline. Most of the fall has been in low-value day trips, reflecting not only the end of Duty Free but also changes in exchange rates and tax regimes reducing the attractiveness of shopping in France. However, demand for longer stays has been affected by “destination competition” as the

low cost airlines create a wide range of options for short break leisure travel. In parallel the ferries have streamlined their offer, with passport checks carried out before departure, a shorter crossing time from larger and faster vessels, and driving straight out onto the road on arrival.

From the initial “turn-up-and-go” toll concept Eurotunnel moved first to the ferries’ system of pre-booked prices depending on length of stay, with yield management to make best use of capacity, but has now added elements of the airlines’ “fluid pricing”.

Truck shuttle

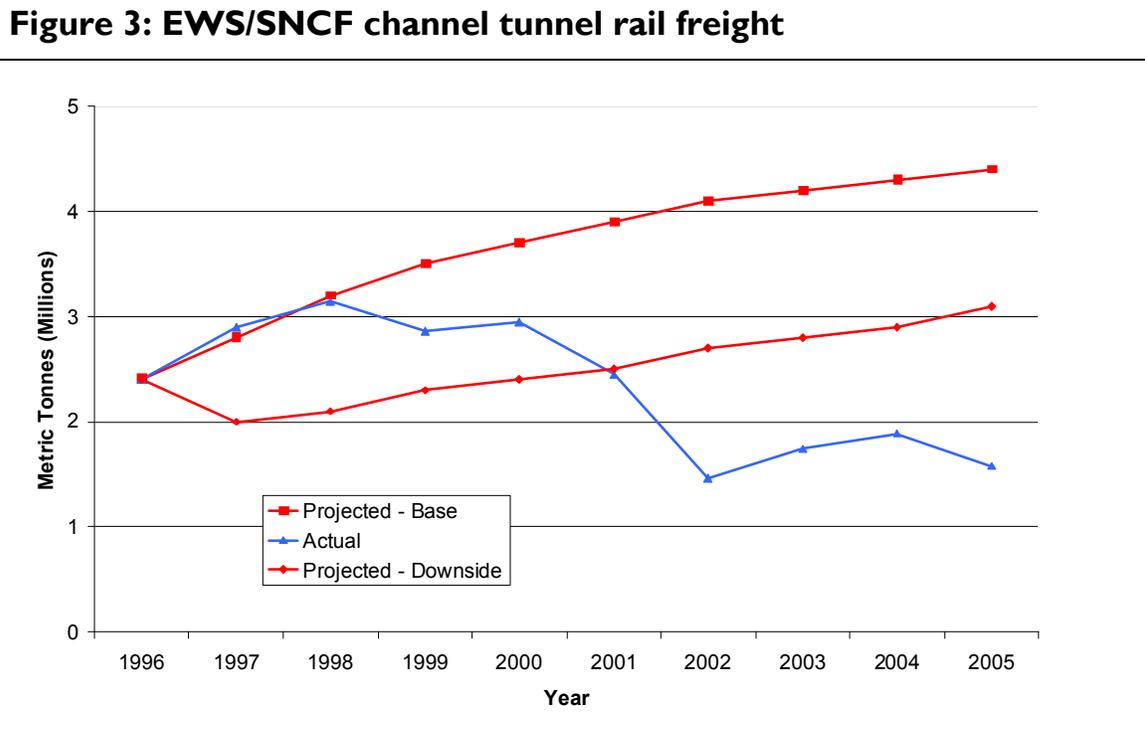


The truck shuttle has been relatively successful, with the rolling stock fleet expanded faster than initially planned to accommodate the prevailing strong market growth and attempt to pre-empt increases in capacity by the ferry operators. Eurotunnel can now control the potentially disruptive effects of asylum seekers and offer a service which is both more reliable and more frequent than the ferries.

From an original model of turn-up-and-go, with accounts for big customers, it has now repositioned as an “account-only” premium mode, offering its higher quality only to account customers who commit to providing a volume of traffic. It carries around 40% of the traffic across the Dover Straits, which handle almost all accompanied trucks, and the market, driven by trade and GDP,

grows by 4-6% per annum. In the longer term, further expansion of the rolling stock fleet may be needed.

Rail freight

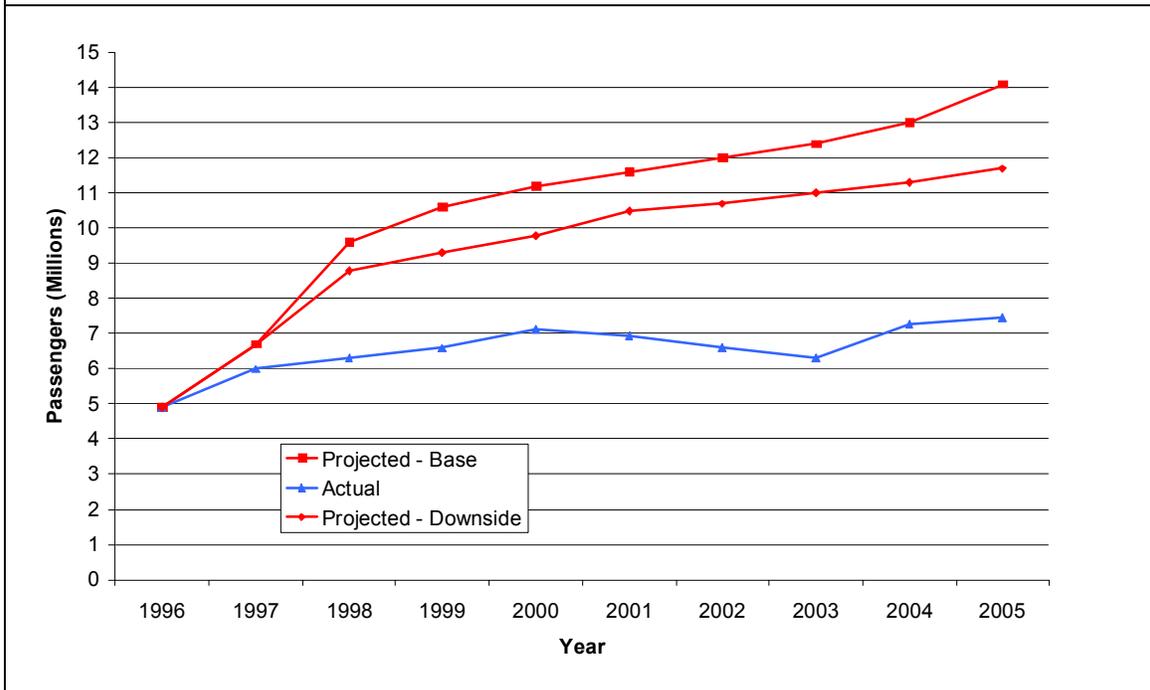


Hugh indicated that rail freight has been a disappointment. While the underlying demand remains, road transport costs continue to fall and, despite EU liberalisation measures, organising to provide reliable alternatives across several railways remains difficult.

Despite effective marginal tolls of zero under the MUC arrangements, traffic barely reached 3 million tonnes per year before being hit by disruption from asylum seekers and, more recently, uncertainty over the end of the MUC. EWS has now given notice of market withdrawal at the end of November 2006 and the future of rail freight beyond that date looks uncertain.

Eurostar

Figure 4: Eurostar – interrupted slow growth



Hugh characterised Eurostar as having interrupted slow growth. Traffic has never reached forecasts: demand is growing at longer distances, where the unforeseen low cost airlines can be faster and cheaper than rail, but stagnant between Southeast England and Northern France and Belgium, markets which Eurostar already dominates.

CTRL Stage 1 has provided some growth, the end of the MUC should have only limited effect and CTRL Stage 2 will provide a further opportunity to squeeze airline share of the London/Paris/Brussels market. Opportunities for growth, however, may be limited to niche leisure markets.

As the markets have developed Eurotunnel has had to adapt to maximise its operating profit. The current position is that, even with past financial restructuring, Eurotunnel cannot completely service its financial costs, and the gap will widen again after the MUC ends in November 2006, full interest on the Company's debt becomes payable and principal repayments become due in early 2007.

Discussion

Graham Zeitlin (ex-Freightliner and ex-Railfreight Distribution) felt that Hugh had been too kind to the people involved in planning rail freight services and that

forecasts were “crazy” if not “fraudulent”. They had assumed that the ferries’ customers paid the published tariffs and overlooked the discounts available, leading to a 1986 forecast for 6 million tonnes a year compared with less than 2.5 million tonnes achieved in 1996. Graham also felt that EWS had shown no real interest in the cross-Channel market, especially while owned by Wisconsin Central. He also commented that “70% of European rail freight is under the Alps”.

Stephen Plowden agreed that “we got here through a deception” and quoted a 2003 *Financial Times* article which asserted that the forecasts were never believed but were fixed to get money from investors.

Peter Gordon (AEA Technology) felt that forecasts for Eurostar had also been inflated to make a case.

Don Box (ex-BRB, involved in the project in the 1970s and 1980s including initial work on CTRL) noted that that shuttle traffic generated around half the revenue but might impose more than half the costs. Might the tunnel have performed better if designed for rail traffic only, allowing a smaller bore and lower construction costs and stripping out the complexity of road terminals? Hugh noted that the revenues obtained under the Railways Usage Contract could not be considered commercial and hence distorted the apparent value of each business. The provision for road transport was a requirement of the concession and Eurotunnel had even been obliged to examine the case for adding a drive-through facility, unsurprisingly concluding that this would not be economic.

Robert Cochrane (ex-BRB) recalled that even in the 1970s the Channel Tunnel project could only reach a public sector rate of return.

John Smith had carried out a cost-benefit analysis for the tunnel in 1972/3, when there had been no inkling of low cost airlines and destination competition. A key assumption had been that if Eurotunnel priced down to its low marginal cost, the ferries would leave the market. Hugh pointed out that Eurotunnel has had to price way above marginal cost to generate a margin to pay for its assets. Yet falling costs were all around: Irish Ferries now operate a ferry with the capacity, in “lane-metres”, of 7½ Eurotunnel passenger shuttles.

John Cartledge (London Transport Users Committee) asked whether the tunnel might ever be abandoned, and whether other flows were as imbalanced as those of the passenger shuttle? Hugh pointed out that Eurotunnel now generates around 100% margin on operating costs and could easily support continued operation. Car traffic was around 80% British vehicles, truck traffic was around more evenly balanced, with around 55% of loads originating on the Continent, but he did not have equivalent numbers for Eurostar and rail freight. In practice, the “origin” of the traffic may determine the sales channel and payment currency, but nearly all traffic is round trip and crossed in both

directions. The imbalance in demand which most affects the business is the different daily, weekly and annual peaks of demand, by direction, of each type of traffic.

Richard Batty (*Network Rail*) asked what lessons could be learnt for the future. Hugh suggested that the key lessons were to have clear objectives, not to believe that competitors' posted prices reflected a cost floor or that costs would not fall in future, and to do proper "blue sky" thinking about the risks.

Tom Cohen (*Steer Davies Gleave*) asked what the financiers might do next. Hugh said this was highly uncertain, given the large number and variety of institutions involved.

Alan Peakall (*shareholder*) noted that the share price had recently risen around 20%, and then another 33%, but that Eurotunnel had no idea why as it had announced that it could be insolvent in early 2007. Hugh suggested that the market could react to rumours when so little of the way forward was clear.

Report by Dick Dunmore

Interactions between rail and road safety

Andrew Evans and Puff Addison
Centre for Transport Studies
Imperial College and University College

Arup Head Office, 13 Fitzroy Street
22 March 2006

The TEG welcomed Professor Evans and Puff Addison who had stepped in with very little notice to speak to the Group on the interaction between safety for rail passengers and the modes to access the railway network.

Introduction

The objective of the talk was to present results on interactions between rail and road safety, which is an ESRC investigation that looks at:

- ‘Whole journey’ risks of journeys for which national rail is the main mode and
- The effect on safety of inter-modal transfers between rail and car

However, it did not look at the physical rail/road interactions such as at level crossings². In summary, the talk covered access modes for rail journeys, casualty rates by mode and the overall risks of rail journeys, including access. It then looked the effect on casualties of switching modes between rail and car and changes if rail fares are raised to fund rail safety measures and the effect on casualties.

Travel data

The principal data sources used were the National Travel Survey (NTS) 1999-2001 for journey patterns, especially those with national rail as ‘main mode’. The NTS records all journeys made by respondents on seven consecutive days beginning on a random day of the week. Multi-mode journeys are recorded in ‘stages’ and the ‘Main mode’ is mode with longest stage. Walk stages of 1 mile or more were recorded on all days and on the 7th day walk stages were also recorded for distances between 50 yards and 1 mile

² Michael Woods talk to TEG on 23rd November 2005 “*Level Crossings – the economic issue*”, published in the Spring 2006 issue of The Transport Economist

In 1999-2001, 5,749 journeys were recorded with national rail as main mode, of which 1,791 (31%) wholly within London, 1,663 (29%) had one end in London and 2,295 (40%) had both origin and destination outside London.

The principal finding of the journey statistics can be seen in table 1, which is importance of walking as access mode for rail journeys:

- There are 1.06 walking stages per rail journey (compared with 0.71 access stages per rail journey by all other modes combined)
- 0.91 kilometres is walked per rail journey, which is just under 5% of all walking (there is probably another 5% in access to LUL journeys)

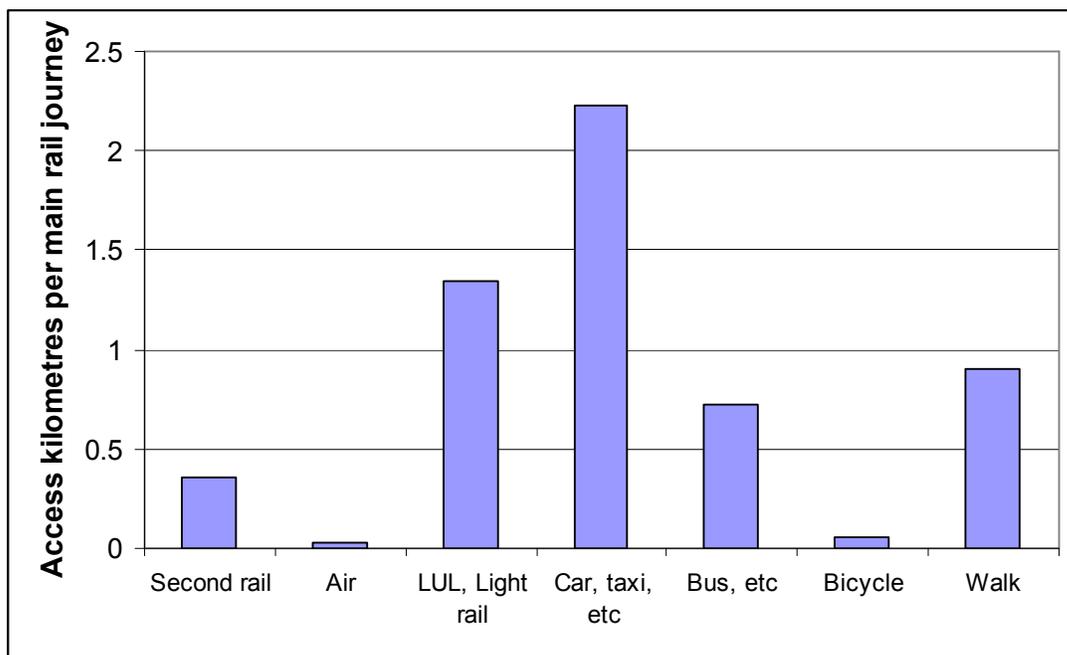
Mode	Within London	One end in London	Neither end in London	All Great Britain
Main rail	1.00	1.00	1.00	1.00
Secondary rail	0.00	0.02	0.02	0.01
LUL, LRT	0.28	0.42	0.02	0.22
Car, taxi, etc	0.13	0.50	0.32	0.31
Bus or coach	0.20	0.14	0.13	0.16
Bicycle	0.01	0.02	0.02	0.02
Walk	1.24	1.05	0.92	1.06
Total	2.87	3.14	2.43	2.77

Table 2 and figure 1 show the average distance travelled where the main mode is national rail. This shows that longer distances were travelled by LUL and light rail to access national rail within London but that car dominated where rail journeys were partly or wholly outside London. The national average showed that walking was the third longest after car and LUL

Table 2: Average distance travelled (km) on journeys with national rail as main mode

Mode	Within London	One end in London	Neither end in London	All Great Britain
Main rail	16.57	77.58	44.92	44.74
Secondary rail	0.01	0.24	0.71	0.36
Air	0.00	0.00	0.08	0.03
LUL, LRT	1.27	3.03	0.16	1.34
Car, taxi, etc	0.43	3.69	2.56	2.22
Bus or coach	0.59	0.64	0.90	0.73
Bicycle	0.03	0.05	0.08	0.06
Walk	1.08	0.87	0.79	0.91
Total	19.98	86.12	48.21	50.38

Figure 1: Average access distance for rail journeys: Great Britain 1999-2001



Casualty data

Data were assembled from a number of sources: the DfT's modal passenger fatality rates 2003, Road Casualties in Great Britain 1999-2003, HMRI rail fatality data³ from 2000/01 to 2003/04, RSSB major injury data between 2000 and 2004 and SRA data on rail passenger-km. Almost all casualty rates are based on actual data that has not smoothed by models, but results checked for reasonableness.

The data were confined to accidents involving vehicles (i.e. excludes non-vehicle accidents⁴), with casualties divided into those to travellers and those to others⁵. Casualties are measured as fatalities and fatalities plus weighted⁶ serious injuries.

Table 3 shows the casualties that occur on each mode in Great Britain. Casualty rates for car travellers are about 10 times greater than those for national rail travellers, measured either by fatalities or by fatalities and weighted injuries. Casualty rates for walkers are about 15 times greater than for car travellers and 150 times greater than for national rail travellers. Rail travel imposes greater risks on 'others' than on travellers; the reverse is true for car travel

Mode	Fatalities only			Fatalities & weighted serious injuries		
	Travellers	Other	All	Travellers	Other	All
National rail	0.279	0.456	0.735	0.478	0.508	0.986
LUL, LRT	0.379	0	0.379	0.651	0	0.651
Car, taxi, etc.	2.696	0.875	3.571	5.354	1.921	7.275
Bus or coach	0.272	1.437	1.709	1.497	2.476	3.973
Bicycle	25.3	0.594	25.9	82.5	1.882	84.4
Walk	41.7	0	41.7	89.2	0	89.2

³ Rail fatality data deliberately exclude period in which Ladbroke Grove 1999 occurred

⁴ Note that there are approximately 100 pedestrian fatalities / year not involving a vehicle.

⁵ For private modes 'others' are pedestrians; for the public transport modes 'others' are pedestrians, staff and third parties.

⁶ The weight for a serious injury is 11.24% of a fatality

Figure 2: Fatalities to travellers per billion km travelled by mode: Great Britain 2003

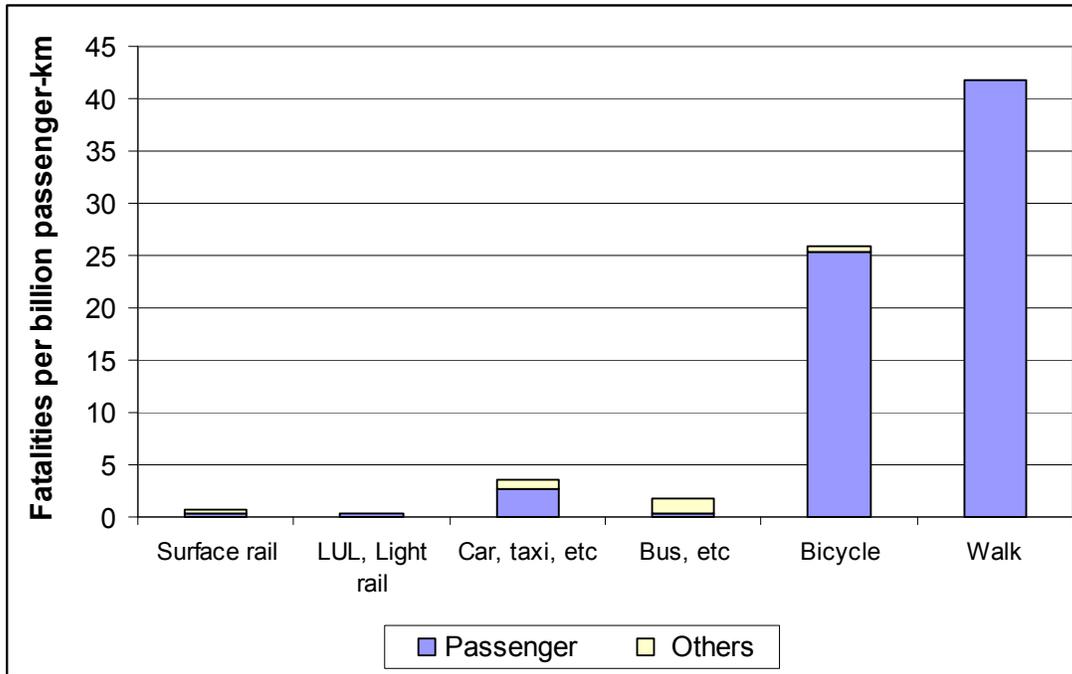
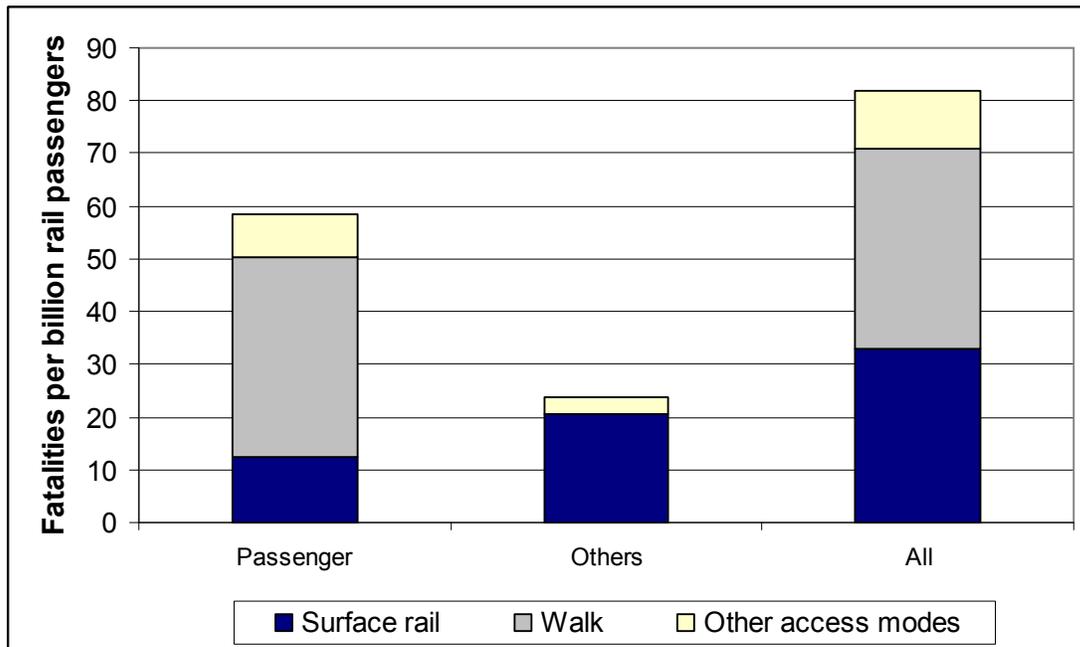


Table 4: Casualties per billion pass-journeys with national rail as main mode: Great Britain

Stages	Fatalities only			Fatalities & weighted serious injuries		
	Travellers	Other	All	Travellers	Other	All
National rail	12.6	20.6	33.1	21.6	22.9	44.5
Walk	37.7	0	37.7	80.8	0	80.8
All other access modes	8.1	3.0	11.1	18.5	6.2	24.7
All stages	58.4	23.6	82.0	120.8	29.1	149.9

Figure 3: Fatalities per billion rail journeys: Great Britain 2003



Overall journey risks

The average distance that is walked to and from railway stations is about 0.9 km per rail journey whilst the average distance on the train is 45 km. Thus, the train to walk distance ratio is 50.

Table 4 shows that the fatality risk to travellers is about 150 times greater per km for walking to or from the station than travelling in a train. Therefore the greatest risk on door-to-door rail journeys is in walk stages and, while other access modes also contribute to risk, walking dominates. If serious injuries are added to fatalities, the risk as walkers is 187 times than travelling in a train.

If risk to others is included, the access risk still exceeds the rail risk

Switching between rail and car

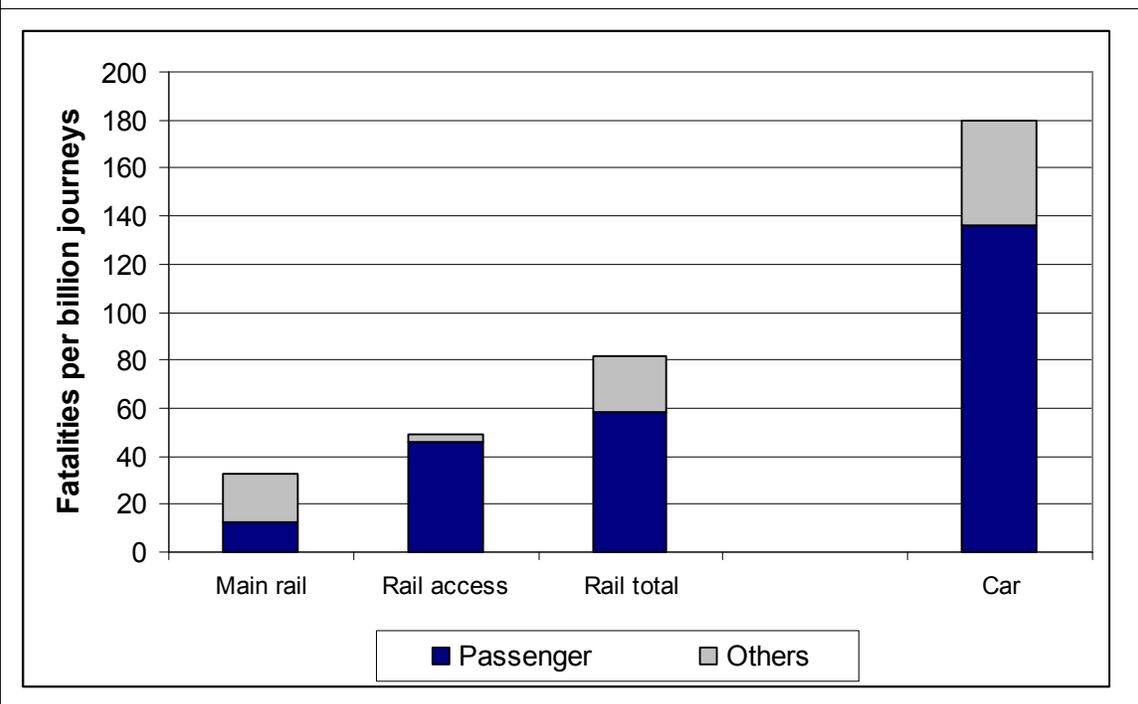
To explore the effect on casualties, the speakers assumed that the average rail journey is replaced by a single-stage car journey of same overall length. (The number of access stages associated with car journeys is only 2-3% of the number of journeys made (source: NTS).

Switching an average journey from rail to car increases the risk by a factor of 2-2.5 on all measures as shown in table 5 below. The reason why the factor is not greater is that travelling by car largely avoids a relatively high access risk.

Table 5: Effect on casualties per billion journeys of switching between national rail and car: GB

	Fatalities only		Fatalities & weighted serious injuries	
	Travellers	All	Travellers	All
Rail				
Main rail stage	12.5	32.9	21.4	44.1
Access stages	46.0	49.1	99.4	105.8
All journey stages	58.4	82.0	120.8	149.9
Car				
Single stage	135.8	179.9	269.7	366.5
Difference: car-rail	+77.3	+97.9	+148.9	+216.6
Ratio car/rail	2.32	2.19	2.23	2.44

Figure 4: Effect on fatalities per billion journeys of switching between rail and car



Effect on overall casualties of rail safety measures

Introducing rail safety measures are intended to reduce rail casualties to travellers or others or both. However, if they are funded from fares they may cause travellers to switch from rail to car but car travel has higher risks than rail travel, even when access risk is allowed for.

It is possible in principle that the intended rail casualty savings could be outweighed by additional car casualties.

Rail/car modal split model

A modal split model has been developed from NTS data for travellers that are presumed to have a choice between rail and car. This excludes travellers who are presumed to be captive to rail because they do not hold a driving licence or are from non-car owning households, which account for 39% of all rail journeys.

Also excluded are travellers who are presumed to be captive to car such as those making journeys from areas where no rail journey was made by anyone to any destination; these are presumed not to have a viable rail service.

Separate logistic models giving probability of choosing rail were developed for journeys:

- Wholly within London
- One end in London
- Neither end in London
- Great Britain

The models are different, but the sum of the three regional models is not very different from the model for Great Britain as a whole. As there was no regional safety data, a single model for Great Britain was adopted. The model of the probability of choosing rail has significant positive coefficients for

- Journey length
- Car cost
- Household income

And significant negative coefficients for

- Rail fare
- Walk time to station

Modelled elasticity of non-captive rail journeys with respect to fare was -0.49 , which is an important parameter in estimating effect of safety measures on modal transfer.

Illustrative rail safety measures

In order to explore the effect of rail/car modal switching the speakers considered two illustrative types of rail safety measure.

- (1) A measure (1) that reduces rail passenger and 'other' rail casualties by 10%, funded by a 0.5% in fares
- (2) A measure (2) that reduces passenger casualties only by 10%, funded by a 5% increase in fares.

Measure (1) represents a package of varied safety measures, giving reasonable value for money.

- A 0.5% increase in fares would raise about £13 million per year after allowing for modal transfer.
- The package would save a estimated 4.5 rail fatalities and equivalent injuries per year, plus reductions in slight injuries and non-injury accidents.
- It would be within shouting distance of the DfT standard value of preventing fatalities of £1.3 million
- Any package of measures that reduced casualties by 10% would be all-pervasive but smaller measures would lead to pro-rata conclusions.

Measure (2) represents a hypothetical 'big-ticket' system safety measure that reduces passenger casualties by 10%, funded by a 5% increase in fares.

- It was assumed to affect only train accidents. These account for a minority of passenger fatalities and injuries; therefore even large system measures are likely to save only a minority of passenger fatalities.
- A 5% increase in fares would raise about £130 million per year after allowing for modal transfer; this would pay for a capital investment of perhaps £2 billion.
- It would save 2-3 fatalities and equivalent injuries per year, so would be poor value for money by current standards.

Table 5: Effect on casualties per billion of journeys of rail safety measure reducing overall rail casualty rates by 10% for 0.5% increase in fares

	Changes in Fatalities only			Changes in Fatalities & weighted serious injuries		
	Travellers	Others	All	Travellers	Others	All
On National rail stages	-1.27	-2.08	-3.36	-2.18	-2.32	-4.51
On access to rail stages	-0.07	-0.00	-0.07	-0.15	-0.01	-0.16
On replacement car journeys	+0.20	+0.07	+0.27	+0.40	+0.14	+0.54
Total	-1.14	-2.02	-3.16	-1.93	-2.19	-4.12

Figure 5: Effect of rail safety measure saving 10% of fatalities for 0.5% increase in fares

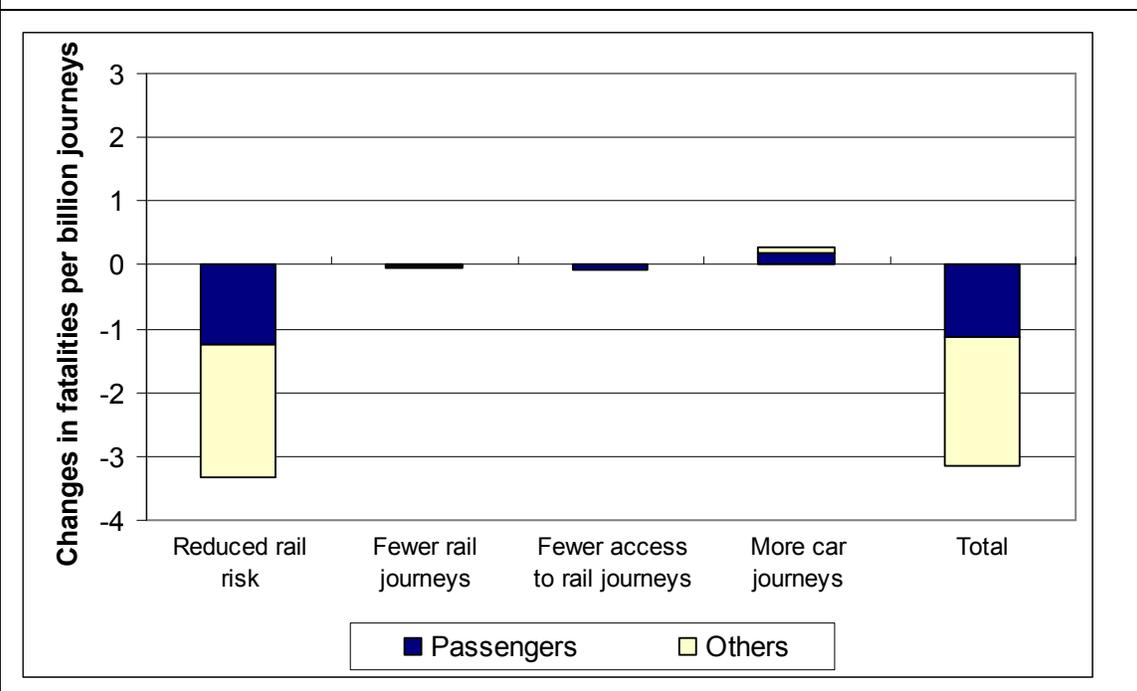
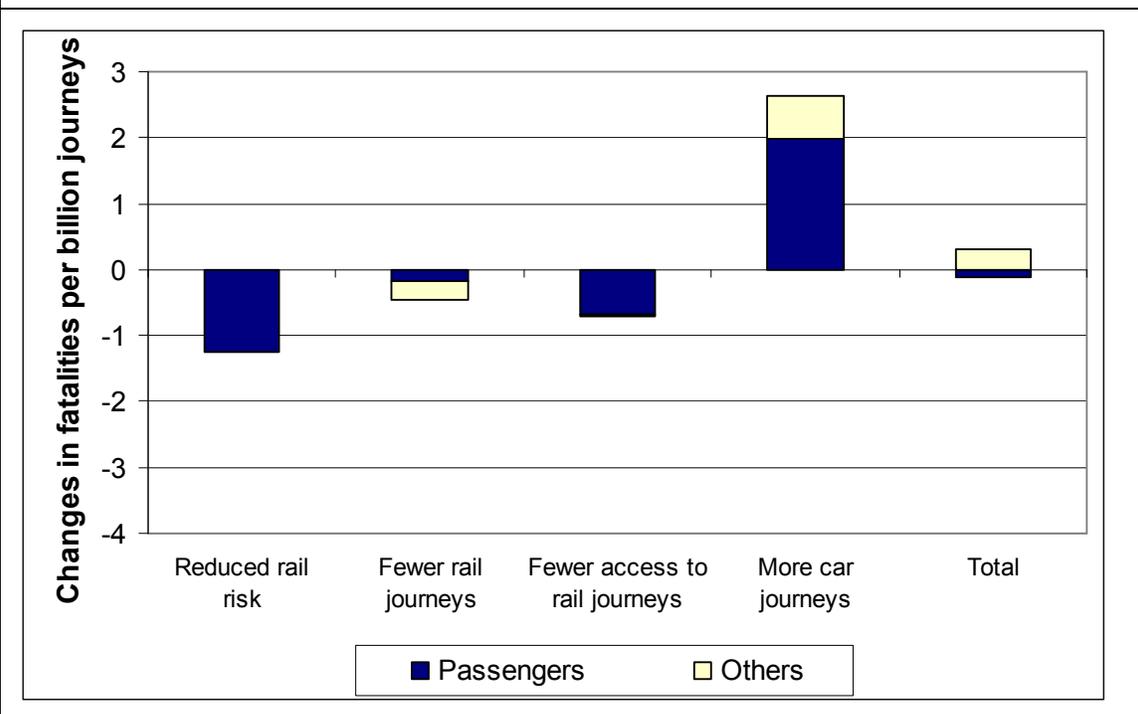


Table 6: Effect on casualties per billion of journeys of rail safety measure reducing passenger rail casualty rates by 10% for 5% increase in fares

	Changes in Fatalities only			Changes in Fatalities & weighted serious injuries		
	Travs	Others	All	Travs	Others	All
On National rail stages	-1.42	-0.30	-1.72	-2.44	-0.34	-2.78
On access to rail stages	-0.67	-0.04	-0.71	-1.47	-0.09	-1.56
On replacement car journeys	+1.99	+0.64	+2.63	+4.00	+1.44	+5.44
Total	-0.11	+0.30	+0.19	+0.09	-1.00	+1.09

Figure 6: Effect of rail safety measure saving 10% of just passenger fatalities for 5% increase in fares



Conclusions on effects of modal transfer on casualties

For measures such as (1) or those that are proportionate to (1), the effects of modal transfer are small though the overall safety benefit is largely as intended.

'Big ticket' system safety measures such as (2) are poor value for money, but they seem unlikely significantly to increase overall casualties due to two contributory reasons:

- The access risk avoided with the car and
- About 40% of rail travellers do not have a car option

Discussion

Paul Withrington (Transport Watch) *opened discussion by asking if the "other" category included trespassers.* The answer was no, since they did not want to mix up the statistics and it might have worsened the case.

Mary Ackland-Hood *enquired on whether the money was a one-off and the casualties are year by year.* The figures presented are annual but the capital sums might last a long time such as "big ticket" safety measures. *She also wondered if another way of using "big ticket" money was to re-open stations to reduce the access journey – it would be interesting to see if reducing distance to stations would save casualties.* It might have the effect of encouraging people to walk, which could increase the danger, but it would be interesting to see the results.

Jeremy Drew *suggested the policy response could be to build more car parks to encourage people to drive to the station, which is contrary to conventional wisdom.* There is a contradiction in encouraging walking and cycling but money could be spent on improving access to stations. There are also health benefits.

Robert Cochrane *suggested that there is a huge bias towards deaths in walking statistics to young children- can analysis show light on this?* Serious injury and fatalities is lower for children than for adults. Yes, there is information on age distribution of casualties.

Dick Dunmore (SDG) *opined that railways should sell insurance for the whole journey. Is there scope for looking at incidence of accidents at, e.g., crossing roads?* Yes, it would repay to look at where pedestrian accidents occur. There are clusters of accidents around stations.

Nigel Harris (The Railway Consultancy) *was worried about stations in urban areas since most are on busy roads or high streets, which could give a significant bias.* The speakers agreed that there is a case for more detailed analysis.

Dick Allard (Queen Mary College) *asked if safety is a factor of modal choice decision and whether you could make the public believe it is safe?* There is no evidence for surface railways. The King's Cross Underground Station fire did lead to a loss of 6% at the time

David Spurn *thought it would make more sense to publicise the safety of rail. As far as accidents are concerned, the railways their best but once trust is lost it is very difficult to get it back.*

At this the Chairman concluded the evening by thanking Andrew and Puff for a very interesting and stimulating discussion.

Report by Laurie Baker

TEG NEWS

Report of the Annual General Meeting 22 March 2006 at Arup, 13 Fitzroy Street

Chairman's Report for 2005

Meetings

During the period of my Chairmanship (March 2005 – February 2006), the Group has held ten meetings, one more than in previous years. The rail topics covered were National Rail, London Rail, light rail, the Channel Tunnel and rail safety. The bus topics were competition in the bus industry and innovative long distance bus services. Speakers also covered research into national road pricing, container port development in the United Kingdom and the development of a national transport information portal.

The Group is very grateful to Arup for making their Headquarters available for Group Meetings since September 2005 and to Shirley Brooks for all her help in organising our meetings. The facilities have been excellent and the switch to this venue has assisted with ensuring that the Group's finances remain strong.

Average attendance at meetings over this period was 34, almost identical to the record average of 35 in 2004 - 2005. Total attendance for the year was a record as a result of the additional meeting being held.

The proportion of visitors to total attendees rose. 25% of attendees are now visitors, for whom no attendance or refreshments charge is made. This appears to be associated with the improved publicity for meetings. It tends to lead to a large number of visitors for popular topics and well known speakers.

Specialised subjects also draw a higher proportion of visitors, some of whom may be less likely to become members.

After a strong start after the summer break, attendance fell in mid winter with the exception of the highly topical Eurotunnel presentation. This may have been due in part to the changes in speakers resulting from absence abroad, illness and family illness, but it may also suggest that our overall programme is now slightly too long.

Publications

Meetings and subsequent discussions continued to be reported in the Journal. Reporting duties are now shared amongst committee members, but the main editorial workload has been carried by Laurie Baker. He has carried out a

review which should lead to an even more professional Journal next year. Laurie is standing down as Editor this year and we thank him for all his work over the years.

The move to PowerPoint computer presentations has also allowed us to distribute "Acrobat" pdf versions of presentations which do not include confidential information to members who have been unable to attend meetings. This has been appreciated by members who live far from London or abroad.

Membership and Finance

Our Treasurer and Membership Secretary will be making a separate report, which shows that the Group is in a strong financial position and that recruitment has been strong over the last year. In the past we have relied heavily on a loyal group of long term members both to support our financial position and as contributors to discussion at our meetings. There are now signs that with increased size our membership turnover may be rising.

Future Programme

A date has been fixed (28 March) for the newly appointed committee to agree responsibilities for the coming year and to discuss the programme for 2006 – 2007. A broad range of topics have been put forward and in addition, the speakers who were unable to come due to illness have expressed a wish to present to us next year.

We are also looking into the possibility of arranging a public half day seminar during the year with a panel of speakers with (we hope) a range of opinions and insights into a transport topic of current interest.

Retiring Committee Members

After many years of service to the Committee both as a member and as the Treasurer and Membership Secretary, Don Box is standing down from the Committee. We would like to thank him for all he has done to support our Group and hope that he will continue to attend our meetings and add a practical railwayman's contribution to our discussions.

*Robert Cochrane
Chairman
22nd March 2006*

Treasurer's Report and Accounts

Overview

2005 was a good year financially for the TEG. Attached is a copy of the Group's Income & Expenditure Account for 2005 and Balance Sheet as at 31st December 2005.

The Group enjoyed an excess of income over expenditure of £1,194 - almost double that for 2004. This was down to a number of factors.

As previously explained the Group is subject to a strong financial gearing, i.e. income is directly related upon the number of members, whilst expenses vary only partly with numbers.

Membership

Income was up by £450 last year compared with 2004.

This was due to strong recruitment - in total the TEG had 143 paying members during 2005 - and ensuring that membership fees kept pace with prices. The Group also benefited from keeping more of our money in an interest-bearing account.

Expenses

Expenses were down by around £100 compared with 2004.

The generous hospitality provided by ARUP since the autumn of last year has reduced the costs of holding monthly meetings. This is reflected in the figures (down by £200). Production and distribution of the Journal was down by almost £100 partly due to continued tight control of print numbers and partly to fewer pages bringing editions into a lower postage bracket. Other admin costs were up by some £200 as a result of biannual website fees (~£100), lumpy items such as stationery and servicing a higher membership.

There was no increase in fees to Rebecca, our Admin Assistant, which remained at 2004 levels. However, your committee felt that a periodic review was appropriate and consequently her fees were increased by some 5% from January 2006.

Outlook for 2006

As mentioned at the beginning, the overall financial outlook depends heavily on membership numbers. Some 35 members have yet to renew.

Costs for the normal run of TEG activities during this year should remain around the same level as for 2005; the increase in Rebecca's fees being offset by the full-year effect of reduced meeting expenses.

Gregory Marchant
 Treasurer & Membership Secretary
 22nd March 2006

INCOME & EXPENDITURE ACCOUNT FOR 2005				2004
Income		£	£	£
Subscriptions:	2004 (note 1)			
	2005	3,304	3,304	2,879
Interest			55	27
Other (Note 2)			0	5
TOTAL			3,359	2,906
Expenses				
Meetings			312	536
Administration:	Admin Assistant	756		
	Other	405	1,161	988
Publications			692	785
Other (Note 2)			0	28
TOTAL			2,165	2,308
Excess of Income over Expenses			1,194	598

BALANCE SHEET AS AT 31st DECEMBER 2005

	£	£	£
Accumulated funds at 31/12/2004	3,839		
Plus Surplus for 2005	1,194	5,033	3,839
Creditors (Note 3)		250	340
		5,283	4,179

Represented by:

Deposit Account 3,664

Current Account	2,438	6,102	5,003
Less: 2005 Subscriptions Prepaid		-233	-233
Less: Uncleared cheques (Note 4)			-592
Graham	-450		
Marchant	-137	-587	
		<u>5,282</u>	4,178

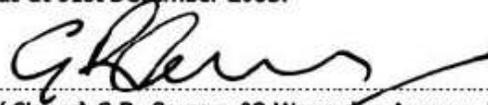
Notes on 2005 Accounts

- 1 No subscriptions were outstanding from previous years
- 2 The Group received no income from other sources in 2005
- 3 Creditors comprise

(a) Journal printing – 1 editions	150
(b) Journal post & packing - 1 edition	100
Total provisions	250
- 4 Apparent errors are due to rounding

REPORT OF THE AUDITOR

I have examined the books and records of the TEG, together with any other necessary information from the Treasurer. In my opinion the Income & Expenditure Account properly reflects the trading result for the Group during 2005 and the Balance Sheet gives a true and fair view of the TEG affairs as at 31st December 2005.


 (Signed) G.R. Carson, 98 Wayendon Avenue, London, W4 4NS.

14 March 2006
 (Date)

TEG Committee in 2006

At the first committee meeting following the AGM the following positions were assigned:

Chair and Meeting Organiser

Robert Cochrane

Deputy Chair

Laurie Baker

Secretary, Webmaster and Programme Co-ordinator

Dick Dunmore

Deputy Secretary

Jillian Beardwood

Treasurer and Membership Secretary
Gregory Marchant

Editor
Peter Gordon

Publicity
Tom Cohen

Committee Members
Martin Lawrence

Francesca Medda
