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Container Port Development in the United Kingdom

Paul Davey, Hutchison Ports (UK)

University College London
25th May 2005

The Chairman opened the meeting by introducing the speaker, Paul Davey.

A graduate of Cardiff University, Paul Davey has been involved with shipping and transport for over 25 years. He began his career in the merchant navy as a Deck Officer with the Blue Star Line. He joined the Port of Felixstowe in 1988.

Paul has held a number of commercial and corporate management positions at the Port of Felixstowe and latterly with its immediate parent, Hutchison Ports (UK) Limited ('HPUK'). He is currently the company's Corporate Affairs Manager responsible for its public relations and public affairs functions.

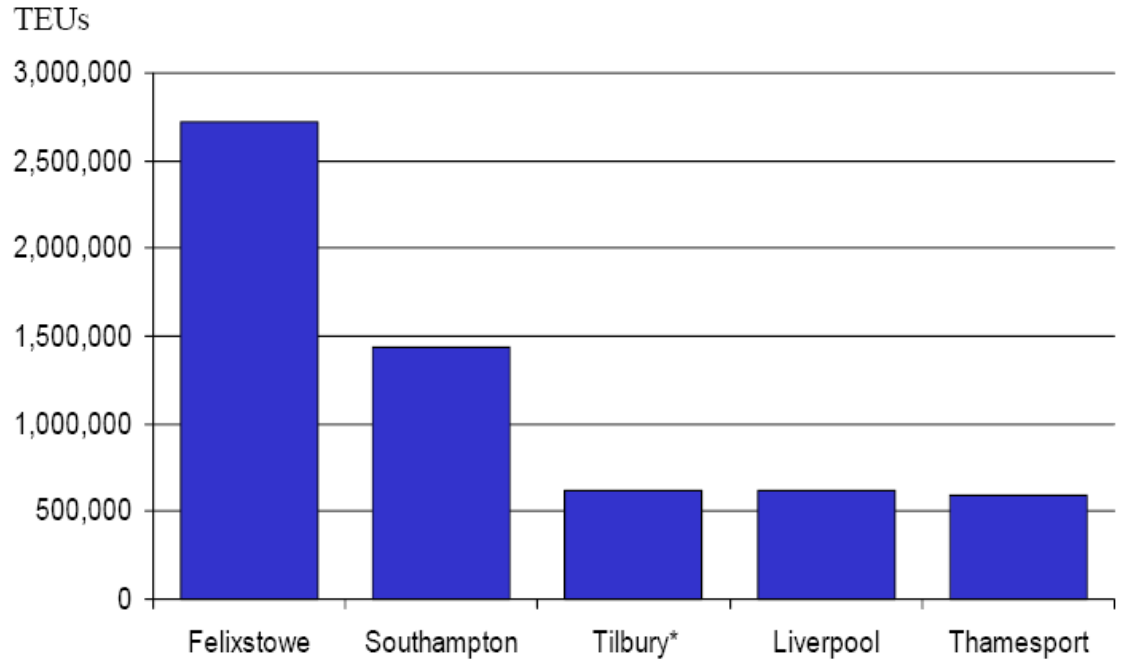
In addition to his role with HPUK he is Manager of the EU Port EEIG (a European Economic Interest Grouping comprising the six largest port operators in Europe), and a UK representative on the European Sea Ports Organisation (ESPO).

Paul commenced by outlining the role played by Hutchison Port Holdings as the world's leading international container port developer and operator. It operates 219 berths in 39 ports located in 19 countries and handled over 47 million TEUs in 2004. Its major European operations are at ECT in Rotterdam and Felixstowe, Harwich and Thamesport at the mouth of the River Medway in the United Kingdom.

Felixstowe handles approximately 2.7million TEUs per annum, nearly twice the throughput of the second largest port, Southampton and about a third of the total UK throughput. This places it fifth in Europe, behind Rotterdam (8.2m) Hamburg (7.0m) Antwerp (6.1m) and Bremerhaven (3.5m).

2004 was Felixstowe's best year to date, with a 24% growth in incoming container volume from China.

Figure 1: UK Container port throughput, 2004

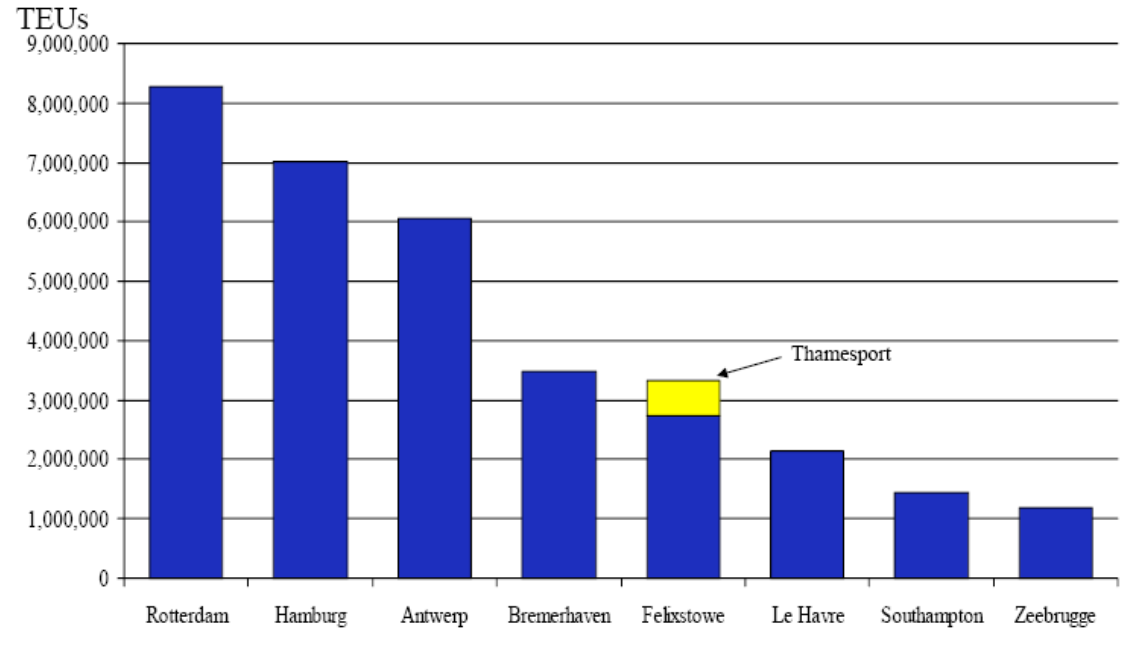


Source: Containerisation International/HPUK

* 2003 Data

Compared to European ports:

Figure 2: European container port throughput, 2004



Source: Containerisation International

Paul then discussed the total growth in the container flows handled by the major UK container ports. Throughput grew by an average of 7.8% p.a. in the decade from 1991 to 2001 and is forecast to continue to grow at 5% p.a. over the next twenty years. Growth is associated with increased GDP – an increase of 1% in GDP corresponding to between 2% and 2.5% growth in TEU volume. The estimated current capacity is about 7 million TEUs and is forecast to be reached by the end of 2006.

Port development to meet this increasing demand must also take account of increases in the capacity, length, width and draft of deep sea container vessels. These are increasing in size to take advantage of economies of scale. Fifteen years ago, the largest carried about 3,500 TEUs. Vessels carrying over 8,000 TEUs are now operating and vessels up to 10,000 TEUS capacity (almost up to the limit for the Suez Canal) are under construction. Outline design sketches have been made for vessels of over 15,000 TEUs capacity, which would be close to the limits of current marine technology and to the maximum size which could navigate the Straits of Malacca. They would also be limited to a handful of ports worldwide.

There are currently 24 vessels in the 8,000 – 10,000 TEU range in operation but over 150 on order. This represents about 30% of current capacity. By contrast, in the UK only two berths at Felixstowe and one at Southampton can currently handle this size of vessel.

To meet the current demands, HPUK has extended the existing Trinity III terminal at Felixstowe North and has plans to build a new port at Harwich, and to reconfigure the old Landguard Terminal at Felixstowe South.

The proposed Harwich International Port (HIP) is awaiting the decision from a Planning Inquiry. Bathside Bay to the north of Harwich would be reclaimed to provide a terminal with a capacity of 1.7 million TEUs p.a. It would have a rail terminal with a capacity of 0.5 million TEUs p.a.

Felixstowe South is awaiting the result of a separate Inquiry. This will provide an additional 1.5 million TEUs capacity. Both will have sufficient length, depth (min. 15m alongside) and crane outreach to be capable of handling all container vessels currently afloat.

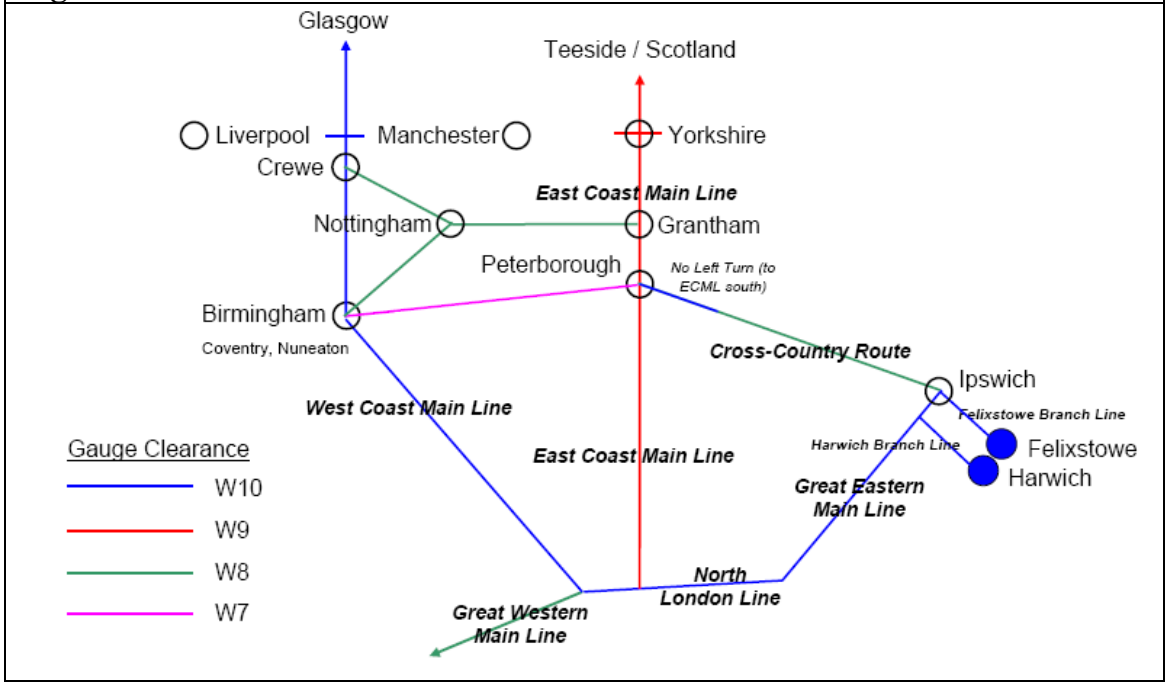
Planning Inquiries in the UK place great emphasis on environmental impact. In planning these developments, HPUK has tried to minimise the impact. In addition, it plans to re-provide the wetlands reclaimed in Bathside Bay at a site just north of Hamford Water on the Walton Backwaters south of Harwich.

The developer also has to demonstrate how landside transport capacity can be provided. The Felixstowe project includes finance for road junction improvements on the A14 Felixstowe – Midlands road and the Harwich project improvements on the A120 Harwich – Colchester Road.

Expansion of rail freight is limited partly by the air gauge on UK rail lines. Only the North London Line and the West Coast Main Line currently have the W10 gauge, which is required to take 9ft 6in high containers on flat trucks.

These containers currently represent 25% of traffic but given the average life of containers (about 8 years) and the demand for maximum height boxes, 65% of containers are expected to be this height within ten years.

Figure 3: The rail network



The East Coast Main Line and Ipswich to Peterborough Line are proposed for upgrading to W10 gauge in 2008 – 2010. Felixstowe (which has its origins in a dock and railway company) is very committed to providing rail access. Rail projects include improvements to increase the capacity of the Felixstowe – Ipswich branch and the Ipswich Freight Yard.

Paul Davey fielded a wide range of questions from the floor, both from members and from visitors with specialised knowledge of his industry. The key topics raised related to inland transport connections, port competition, port efficiency and the role of ports in the local economy. His responses are summarised below under these four main headings.

On rail connections and capacity, he said that 21% of containers landed at Felixstowe (320,000 boxes p.a.) leave by rail. The developments are based on this percentage rising to 26% of the increased total throughput.

Rail capacity calculations assume that line upgrading to W10 gauge will go ahead and that freight will retain the existing allocation of paths in the face of demands for increased passenger services. On this basis, capacity will be sufficient up to 2018.

One factor in inland transport efficiency and cost was the severe imbalance between imports and exports, particularly of higher volume goods which are transported by sea. The two main exports from Felixstowe are waste products for recycling or disposal and "fresh air" (i.e. empty containers!).

Improvements in inland empty container tracking could improve container utilisation and back loading, but the fundamental problem would remain.

He was asked about the possibility of greater use being made of short sea shipping to bypass crowded roads and railways and overcome driver shortages, leading to a higher level of transhipment. He said that an increase in transhipment was likely, particularly in the later years, as deep sea traffic concentrated on modern deep water ports and inland transport routes became congested.

This raised the question of competition between UK ports and ports in continental Europe for the deep sea traffic.

Although Felixstowe / Harwich is not a continental port of entry, it is well located to serve the most populous and richest part of the United Kingdom, the London conurbation. There is certain to be at least one port in this region served by deep sea shipping lines and HPUK consider it has significant advantages over potential competitors.

As to competition, Felixstowe is at least as efficient as the large continental operators. Charges are lower even in money terms than in 1991.

The difficulty is that continental competitors (Rotterdam, Antwerp, Hamburg) are owned by local authorities and are indirectly subsidised using a range of mechanisms on the basis of the wider economic gains they provide for the local community.

In contrast, the UK ports are privately owned and must seek private sector rates of return on their investment. Moreover, they are expected to finance local transport infrastructure improvements to satisfy planning authorities.

Turning to port efficiency, he said that productivity in Europe lay between that in the USA and the extremely high levels in the South China ports.

In the USA ports productivity (as measured by containers handled per metre of quay or per hectare of yard p.a.) was only a half to a third of that in the UK. This was mainly a result of restrictive practices. On the Continent, some terminals were putting their faith in automation to reduce manpower requirements, but the first generation equipment had revealed some problems which were now being resolved.

Finally, he discussed the impact of a port on the local economy. A lot of research work has been carried out in Rotterdam where the port (which is a bulk materials port and petrochemicals centre as well as being a container port) accounts for about 5% of the Dutch GDP.

Felixstowe directly employs 2,800 and the Harwich International Port would add another 300. The total employment as a direct result of port activities in the region of the 2 ports has been calculated to be in excess of 15,000.

The Chairman Robert Cochrane closed the meeting by thanking Mr Davey for coming at such short notice and giving such a timely and informative presentation.

Meeting notes prepared by Robert Cochrane

Controlled competition in the bus industry

Tim Larner, Director, *pteg* Support Unit

University College London
22 June 2005

Background

The deregulation of buses outside London under the Transport Act 1985 has not prevented a further decline in demand, by 2003/04 at around 75% of 1991/92 levels outside London. In contrast demand in London had risen by around 15% by 1999/2000 and by almost 50% by 2003/04, doubling in size relative to the rest of the demand. In contrast to broadly stable real motoring costs, real bus fares have continued to rise by around 27% in the PTE areas and 20% in other areas, although Tim noted that it was unclear whether rising fare drove falling patronage or vice versa.

Figure 1: Bus patronage 1991/92 to 2003/04

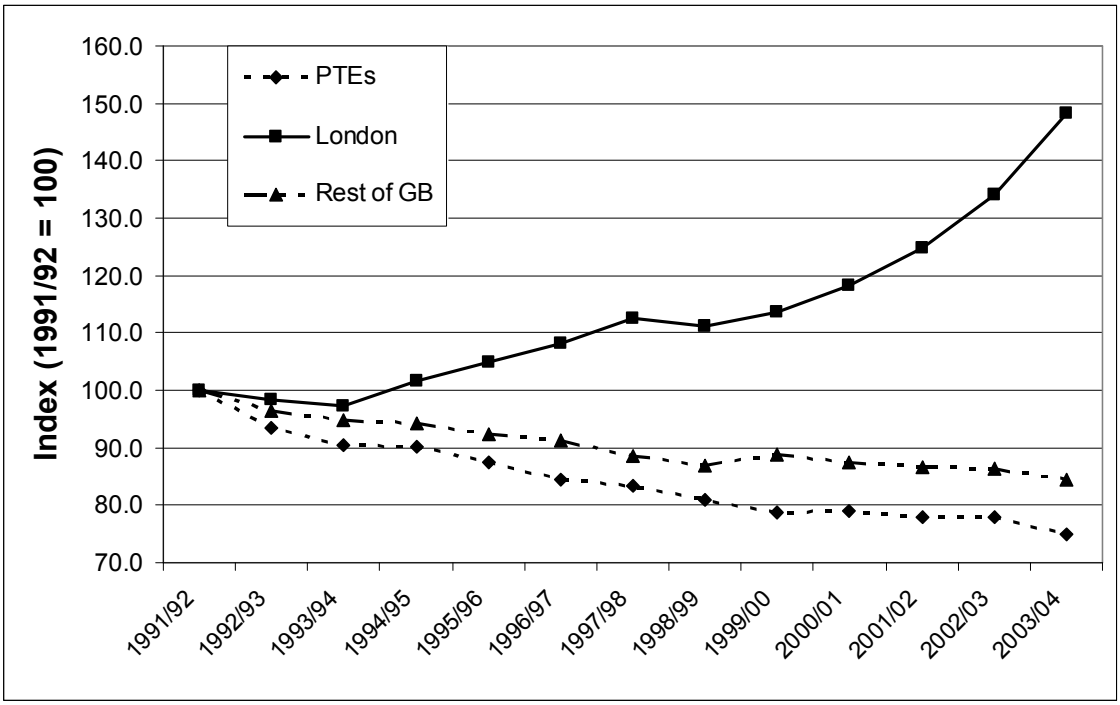


Figure 2: Fares and motoring costs 1991/92 to 2003/04

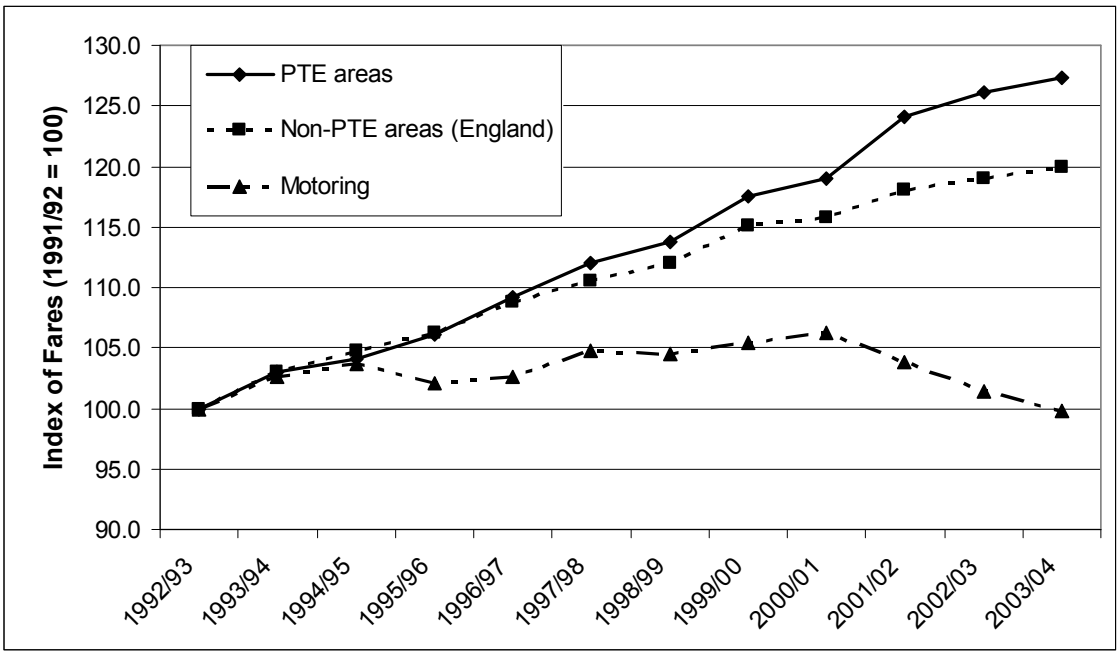
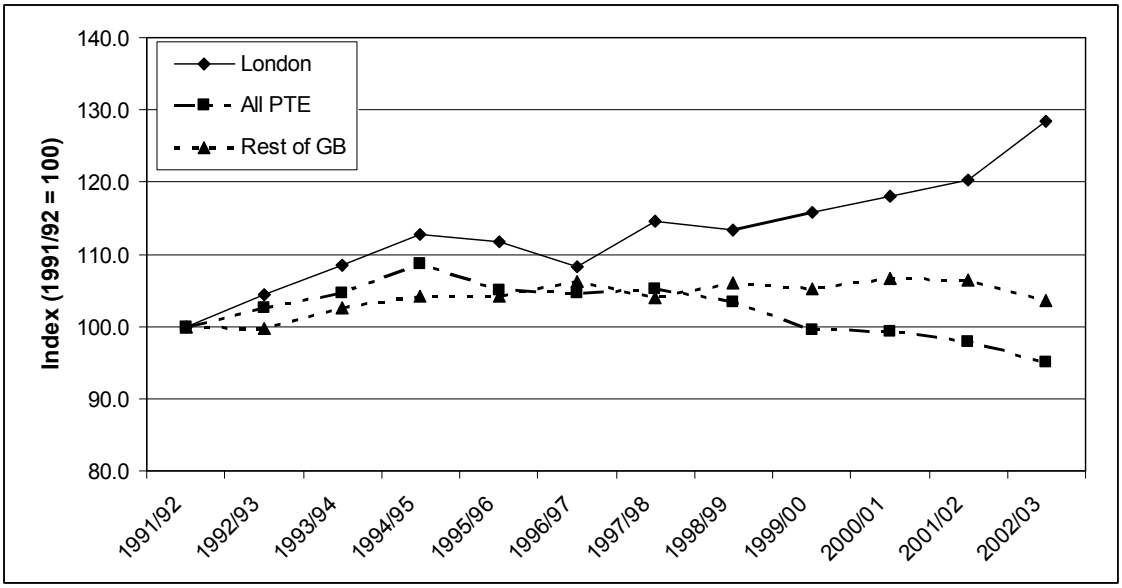


Figure 3: Vehicle kilometres, 1991/92 to 2002/03



At the time of the Transport Act 2000 Government considered it was still felt that bus transport was generally working satisfactorily, despite lobbying from *pteg*. Around 85% of services were operated commercially, although this has since fallen to around 80% and may drop further. Fares were almost all

determined commercially. The outcome was that the Act provided a "First Aid Cabinet" in case of problems. DfT now wanted "*to encourage greater scope for local transport authorities to determine routes, fares, quality standards and frequency of service*" and noted that "*Quality Contracts might offer significant gains*".

However problems were emerging, such as operator staff shortages, staff turnover of 20 – 30%, and low reliability and quality. The pattern of supply in many areas was of territorial operators with competition only arising to defend their territory. Operators added capacity only to keep others out and removed it once they had retreated, all draining the industry further with no sustained gain for the passenger. Capacity provision tended to be flat across the day, reflecting operational convenience rather than varying demand.

Local authorities had little influence over company vision, management stability, staffing, quality, network design or stability of modal integration. The result was a mixture of good, bad and "ugly" services. The good included cleaner buses, guided bus and proposals for bus/tram hybrids. The bad included fines for poor reliability and low customer and staff satisfaction. The ugly included buses with no MOT certificates and poor maintenance.

While East Sussex had considered introducing controlled bus competition, Tim considered that any future approach was likely to come from within the PTEs as other, smaller, authorities generally lack the will and/or the expertise to address the issue. The seven PTEs covering the UK's city regions cover around 13 million people or 22% of the British population. They typically have a population of 1.2 – 2.6 million around a core city of 0.5 – 1.0 million, although some are polycentric. He also noted that the PTEs had endured other political and administrative changes and inferred that the must be about the right size for their functions, noting that they had survived a number of rounds of local government reorganisation since being introduced 35 years ago. There was also something of a vacuum following the significant votes against directly elected Regional Assembly for the North East.

Tim outlined the rationale for introducing greater control including the fact that support was already rising and would rise further with the introduction of free local bus travel for the disabled and those over 60 from April 2006. He also noted that the current regulatory regime, reliant on the Traffic Commissioners, is ineffective.

Time stressed that renationalisation is not on the PTE agenda, which means reliance on the three regulatory options currently available: Quality Partnership Schemes and Quality Contracts (both introduced in the Transport Act 2000) and stronger regulation through the Traffic Commissioners.

Quality Partnership Schemes

Under Quality Partnership Schemes the local transport authority makes a scheme, setting out a range of facilities offered (such as bus lanes and bus shelters) and the standards required of operators to be allowed to use them for a period of at least five years. The operators then decide whether to cooperate, or rather whether to operate.

Tim identified a number of problems. If services of the required standard are not forthcoming, the authority then has to tender for them. Even if they are forthcoming, operators may merely reshuffle their resources so that poorer vehicles are used elsewhere. The authority still has no control of service levels or fares, so Quality Partnerships are no help in improving the integration of fares, services or modes. The outcome is that, five years after the Act, no Quality Partnerships have been introduced and the law has not been tested, although the Department for Transport has a working group examining the issues.

Quality Contracts

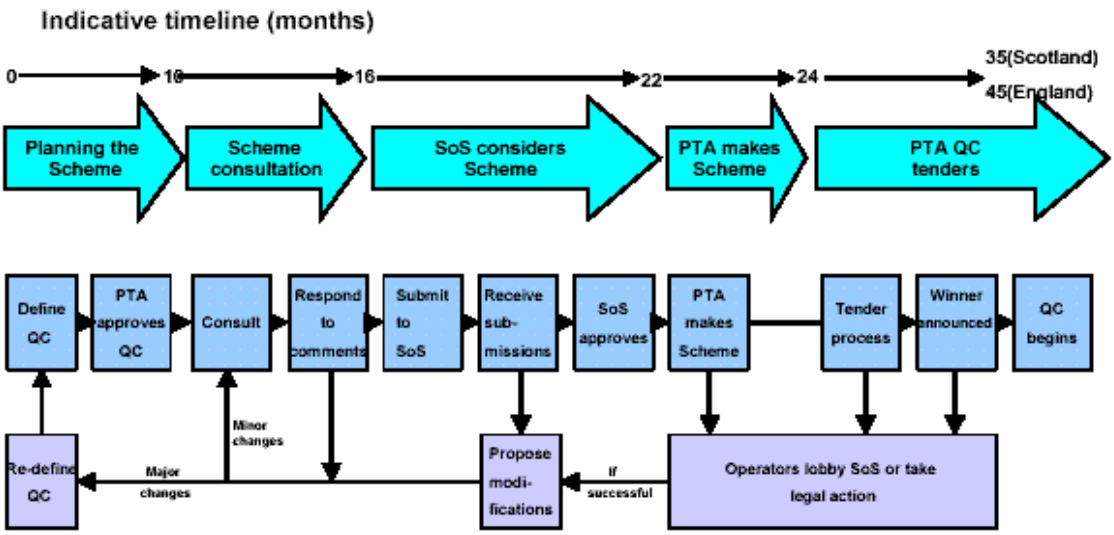
Quality Contracts offer the local transport authority greater powers to control every aspect of bus services including quality, schedules and fares. However, after the authority designs a scheme it must then consult and submit it to the Secretary of State for approval. If approved the scheme is "made" and bus services can be put out to tender. However, the process takes around three years, assuming that modifications arising from consultation or operator lobbying do not result in a delay to repeat some steps. Tim noted that the process had been described as "a massive game of snakes and ladders" (see figure 4 below).

Tim noted that a Quality Contract could be "radical" and should be effective, as one would expect that a bad scheme would not get through the consultation and approvals processes. There were potential problems, however, including the transitional disruption of moving from a deregulated to a contracted market, particular with operators condemned to lose their business over a 6 – 12 month period. How do you get one operator out and another one in?

Further difficulties include the hurdles written into the legislation, requiring that a Quality Contract be the "only practicable way" of achieving objectives, a very high hurdle which could be lowered. Why not let the local authorities decide themselves, given that they have to demonstrate that proposals meet an "EEE" (economic, efficient and effective) test? Schemes could in theory last ten years, but contracts could only last five, meaning that a new Scheme could in effect be needed every five years. Operators were also producing "spoiler" responses: when Merseytravel suggested a scheme, a local operator produced an alternative

package, but there was no mechanism of holding it to it when the Quality Scheme proposal was dropped.

Figure 4: Chart showing quality contracts process



As with Quality Partnerships, the actual outcome remains unknown, as no authorities have attempted to introduce a Quality Contract scheme.

Stronger regulation through the Traffic Commissioners

Tim also noted that many of the PTEs are frustrated by the Traffic Commissioners low level of enforcement of operators' provision of their registered services, rather than just monitoring safety, but that this could in principle be improved. There are only six staff monitoring all services in the two Traffic Areas that cover the whole of the North of England (roughly Liverpool to the Wash). He suggested that they could set higher entry standards and have greater levels of monitoring, focusing more on customer needs. In addition, penalties could be higher and recycled into transport, rather than just being fines returned to the Treasury. This would help improve quality, but only to a limited degree as it would still offer no powers over integration of fares, services or modes.

A way forward

Tim concluded that, nearly five years after the Transport Act 2000, we have:

- Insufficient competition for tendered services
- Low spare capacity within the industry
- No approved Quality Partnership Schemes, because they are ineffective
- No approved Quality Contract Schemes, because they are too difficult and risky

He discussed the idea of Quality Partnerships "with teeth" but was not sure that the concept could work. The local authority provides facilities but still can only hope that they will be used: operators can always walk away. He also raised the question of why there could not be local fares regulation.

He concluded that a better way forward might be a simplified Quality Contract scheme procedure. Network integration is a powerful argument for taking control of, and simplifying, ticketing and coordination. Unlike in London, where exact timetables are specified, PTEs could go for "loose fit" specification of services, enabling them to meet their accessibility targets but leaving detailed timetabling to the operators.

In conclusion, Tim hoped that the Transport Innovation Fund (TIF) could fund one or two initial Quality Contracts.

Discussion

Robert Cochrane *asked whether Government's objectives were appropriate and consistent, and whether it should determine how local transport operates.* Tim agreed that there was an inconsistency that the Government sets growth targets but gives authorities no tools to meet them: they need more levers.

Chris Castles *suggested that you could not get something for nothing and that higher quality would mean more subsidy*. Tim admitted that he had not covered this, but he considered that the more pressing question was whether current resources could be used better, particular where services were duplicated but not integrated. In addition, some services were highly profitable: Travel West Midlands had operating margins of over 20%, 5% more than typical London operators, but had few competitors. There were benefits from introducing formal off-road competition for the right to serve the market, in place of sporadic on-road competition in the market. **Chris** *asked whether the issue was one of taking monopoly profits*. Tim indicated that the issues would vary by PTE, and agreed that greater funding would need to be justified.

Hugh Ashton *(Steer Davies Gleave) said that his own work had shown that, in corridors with duplicate services with separate tickets, better services could be provided with 30% lower capacity. He also suggested that contracts could be controlled but sufficiently flexible to have effective integration. He asked whether there was a political will to make the Traffic Commissioners more effective.* Tim though that there was no will to change their powers. Greater Manchester PTE has asked for greater resources but this had been disallowed on the grounds that costs to operators would rise.

Gregory Marchant *asked why Brighton was so successful*. Tim wasn't sure whether the operator or the local authority deserved the credit. Other cities which had been successful seemed to be historic cities with constrained road networks and park and ride. **Robert Cochrane** *asked what Gregory thought explained Brighton's success*. **Gregory** thought that maybe other towns had built too many roads.

John Cartledge *(London Transport Users Committee) thought that a contributing factor to Brighton's success was the autonomy given to the local Go-Ahead subsidiary which had a radically different style.* Tim agreed that there was a certain "zeal" in Brighton, whereas elsewhere the operators' view seemed to be that cutting costs was easier than growing the market. **John** *also asked whether PTEs had been inhibited in taking forward Quality Partnerships by the fact that they could not deliver facilities where they were not the highway authority.* Tim said that West Midlands PTE had nearly introduced a Quality Partnership, but Birmingham City Council had removed a key bus lane. Getting public support for bus was hard and he was not convinced that giving the PTEs highway authority powers would change as they would still be answerable to PTAs which might be equally nervous of upsetting motorists. Transport for London, in contrast, benefited from more "hands-off" control, and had been had been willing to take decisions itself, depoliticising them. **John** *noted that the Mayor does not control the roads but he does control the purse strings: the Boroughs don't get cash if they don't support the Mayor's strategy*.

Peter White *(University of Westminster) thought that part of the problem was the Office of Fair Trading's restriction on operator coordination on, inter alia, headways and ticketing: could this be relaxed*? Tim thought that this was a fair point and that we are not being served well by OfT. However, where integrated ticketing existed, some operators act as if passenger volume was a zero-sum game, introducing cheaper tickets to undercut it. **Peter** *also wondered how a Quality Contract would be monitored.* Tim said that this would have to be part of the authority's specific proposals.

Jeremy Drew *asked whether independent regulation, on the model of ORR or OFGEM, could be used at the PTE level. This could work well when benefits to many (quiet) winners could be lost because of a few noisy losers with local political clout*? Tim agreed.

Robert Barrass *noted that the patronage trends flew in the face of sustainability. How could we accommodate the need to integrate transport modes with each other and with land use changes*? Tim though that flexibility was needed: a criticism in London is that it can take up to 6 months to change a single bus. This might mean that Quality Contracts would need mechanisms for strategic intervention to prevent them fossilising for 5 years. **Robert** *asked how the system would allow this*. Tim thought that it would be capable of doing this as services could be changed within a contract.

Report by Dick Dunmore, Steer Davies Gleave

Economic Analysis and Modelling for the 2004 Feasibility Study of Road Pricing in the UK

Tom Worsley
Head of Rail Network Analysis and Modelling
Department for Transport

Arup Head Office, 13 Fitzroy Street
26 October 2005

Background

Tom Worsley began his talk with the observation that the concept and basic theory of Road Pricing were not new; they had, for example, been discussed in the 1920s by Pigou and by Knight and the mid 1960s had seen the seminal Smeed Report. Since the mid 1980s implementations of differing sorts had occurred in various parts of the world and in 2003 the UK had seen the introduction by the Mayor of London of the London Congestion Charge.

At the national level there has been an increased interest in the role of pricing in the future of transport from 1998 onwards. The 1998 White Paper 'A New Deal for Transport' (the first Transport White Paper since the 1970s and one which claimed that it was possible for *everyone* to benefit) had as its key themes integration between transport modes, integration between transport and land use, better management of roads and better appraisal methods. There was also a commitment to introduce legislation to enable Local Authorities not only to charge road users in order to reduce congestion (implying that congestion was only an urban problem) but also to 'keep the revenue' (a concept not clearly defined) from the first ten years of any scheme. A companion paper 'A New Deal for Trunk Roads in England' reviewed the very large number of existing road schemes and decided whether each should proceed, be withdrawn or be assigned to a grouping for a Multi-modal Study. During this process the Department decided (partly because of the 1996 SACTRA Report's observations on generated traffic and its implications for future increases in congestion) to assess options for charging in a selection of studies.

In July 2000 the government issued 'Transport 2010 – The 10 Year Plan'. This specified targets for matters such as congestion, rail and bus patronage, emissions, safety, cycling, rail freight and bus reliability. It was assumed that about ten of the larger urban areas would implement charging schemes or workplace parking charges and scenarios for limited interurban charging were

also published. The 2002 Progress Report 'Delivering Better Transport' discussed achievements of the first two years of the Ten year Plan, giving some findings from the Multi-modal Studies and reporting progress on Road User Charging in London and Durham. To address the concerns of the Road Haulage industry a study of Lorry Road User Charging was announced, the aim being to compensate for nationally disproportionate fuel duty rates by a charge per unit distance. Finally the 2003 White Paper 'Managing our Roads', published at the same time as the findings of the Multi-modal Studies (and six months after the launch of the London Congestion Charge) outlined options for network management and 'locking in the benefits' of pricing, with the associated technological and land use planning requirements and announced the setting up of a Road Pricing Feasibility Study. The fact that many organisations were to be associated with the Study demonstrated how, over the years, Road Pricing has moved from the margins to being a real option not only in Departmental thinking but taken seriously by the RAC ('Motoring for 2050'), the Independent Transport Commission, the Commission for Integrated Transport and many other similar bodies.

Road Pricing Feasibility Study

Overview

The objective of the Study was 'to examine the possibilities of a new system for charging for road use in the UK'. That system was to have an efficient structure of prices, be fair, respect privacy, promote social inclusion and accessibility, deliver higher economic growth and productivity for all regions and deliver environmental benefits. ('Fair' was not defined). The Steering Group (unlike that for the Smeed Report which consisted of a small elite group of academics) included representatives of Government Departments (DTI, DEFRA, Welsh, Irish, Scots), other interest groups (motoring organisations, the road haulage industry, public transport, local authorities, etc) and, as experts, Michèle Dix and Stephen Glaister. The method of working was to commission reports, analyses and studies, to have frequent meetings to review the evidence and to report to the Secretary of State for Transport. The remit was wide and included modelling the impacts, reviewing existing pricing methods, reviewing attitudes to charging, assessing the impacts, legislative considerations and potential implementation costs.

The Report established a case for pricing, discussed problems of privacy and fairness, considered how road pricing would work, how it would be implemented and options for moving forward. There are technical annexes on the economic case for road pricing, modelling results and analysis, consumer attitudes, social inclusion (ie analysis by income group), environmental and

other impacts, compliance, enforcement and privacy, legislation and devolution and system architecture.

Comparison of costs

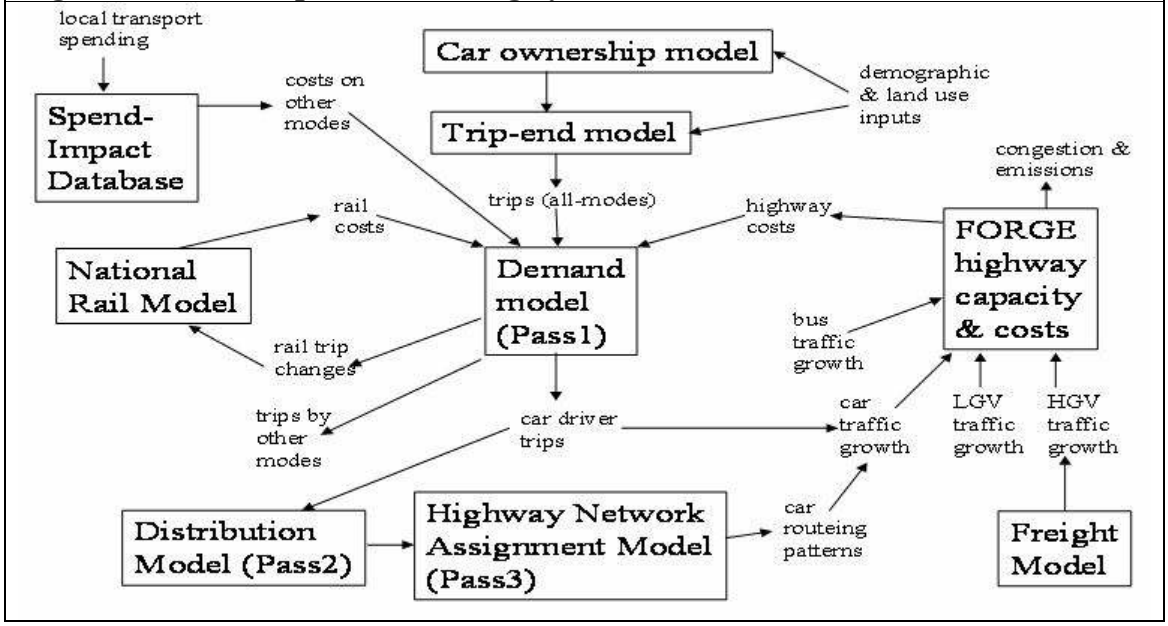
The existing charges for road use are fuel excise duty (£22 bn pa) and vehicle ownership (4.5 bn pa). It was estimated that the average marginal cost of vehicle use is 0.5p/vkm to the infrastructure, 0.5p/vkm-3.0p/vkm to the environment, 10p/vkm-12p/vkm for congestion and 1p/vkm for external accidents.

Modelling and Analysis

Prices were set to the estimated Marginal Social Costs of each type of travel and the responses to the changes were calculated. At each iteration, the generalised costs were estimated with the re-optimised prices at Marginal Social Cost. Calculation of the Marginal Social Costs required knowledge of traffic volumes (and therefore congestion), purposes, Values of Time, speed and location.

The main models used were the DfT's National Transport Model and the Multi-modal Studies regional transport models, all of which were directly accessible but which, inevitably, differed in details of representation. The heart of the road traffic calculations in the National Transport Model is the link based FORGE, which has as source data traffic counts from 20,000 points on links classified by road type and capacity, area type, region, flow direction and 19 time periods. The FORGE data are grossed up for all links and traffic types, speed/flow relationships are used and the effect of policy related changes on volumes, speeds and emissions are then estimated and thus the change in Marginal Social Costs. The Multi-modal Demand model (NTS based) subdivides by person type, household type and journey purpose and allows car driver, car passenger, bus, rail, walk and cycle modes, origins and destinations by area type and trip length distributions. This model calculates the impact of changes in car traffic resulting from the FORGE adjustments on mode choice and trip length and feeds them back into FORGE. Other models in the overall cycle include the National Rail Model (which includes adjustments for overcrowding), freight and LGV models and the Transport User Benefit model. Environmental and accident costs are derived using the Surface Transport Costs and Charges model. The processing-intensive Highway Network Assignment Models (PASS2&3), which determines the distribution of overall traffic growth between regions and between road types, is only run once for each future year. Figure 1 shows the complete modelling cycle.

Figure 1: The complete modelling cycle



The system was run first with full MSC pricing, then with a revenue neutral option and finally with some of the simplified forms of Road Pricing determined only by road type, area type or time of day. The original specification for the full MSC scenario assumed a set of 75 different charges ranging from 0.5p/km to £1.90/km. This was, however, considered too complicated for acceptance by motorists (do rail passengers worry that the operating company may be paying a multiplicity of track charges during a single journey?) and so was replaced by a set of 10 charges capped at 80p/km. The revenue neutral scenario was simulated by setting the 10 charge rates at levels which raised the same revenue as would be provided by fuel duty in the forecast year of 2010. A further set of five runs investigated the effect of reducing the cap by consecutive steps of 10p/km. Finally the simplified cases of pricing only in London and other conurbations, only in urban areas, only by road type, only by area type and only by time of day were investigated.

The main findings are shown in Table 1. It will be seen that the full MSC pricing scheme produces large total benefits of £10.2bn in 2010, with a reduction in congestion of 45% and only a 3% reduction in total traffic (9% in urban areas). Revenues are reduced to £9bn due to the fall in fuel duty. Cost of travel per vehicle km is found to be reduced in about 50% of cases and only 0.5% of vehicle kms would have a charge of £1 or more. Table 2 shows the resulting changes by area type. It will be seen that the greater changes occur in the urban areas; the consequence of both the greater potential for change and the higher charges.

Table 1: Main findings of Study			
Type	**Benefits**	**Revenue**	**Traffic**
Full MSC pricing	£10.2bn in 2010	£9bn (note fuel duty falls)	-3%; urban -9%; congestion -48%
Revenue neutral option	£7.8bn	-£2.2bn (insufficient iterations)	+2%; urban -4%; congestion -41%
Simple options – road/area/time of day	Less than 1.2bn	£8bn	-5%; urban -5%; congestion -2% to -10%

Table 2: Impact by Area Type (change on 10-year plan in 2010			
Area type	**Traffic**	**Congestion**	**Average charge (p/km)**
London	-21%	-51%	14p[1]
Inner conurbations	-11%	-51%	13p
Outer conurbations	-5%	-46%	3p
Urban areas >250,000	-4%	-43%	5p
Urban areas >100,000	-3%	-41%	5p
Urban areas >25,000	-4%	-32%	4p
Urban areas >10,000	-1%	-33%	2p
Rural Highway Agency roads	-1%	-32%	0p
Rural other roads	-1%	-41%	-1p
Total	-4%	-46%	1.9p

[1] This is in addition to the congestion charge

The (almost) revenue neutral case (more iterations would have reduced the revenues to zero) produces benefits and reductions in congestion which are only slightly less than the optimal pricing scenario. None of the simple options produces either much benefit or much relief of congestion.

Table 3 shows the shifts by car drivers to other modes engendered by the MSC pricing scheme. A surprisingly large proportion of car drivers are shown as changing to car passenger but, since the modelling does not explicitly track individual behaviour, this could be a reflection of a greater reduction in the number of low occupancy cars than in high occupancy cars. (Note that the table omits change of route, destination and time of day, which is picked up in the FORGE module)

Table 3: Shifts to other modes resulting from MSC pricing		
Car driver to	**Essential**	**Recreational**
Walk	2%	5%
Cycle	2%	2%
Car passenger	79%	78%
Bus	10%	9%
Rail	7%	7%

In total, with the MSC option the majority of users experience relatively small welfare losses while those with high Values of Time gain. It is notable that the revenues are almost as large as the benefits, a feature of a welfare analysis which allows for differences in the value of time per vehicle by journey purpose.

A combination of network-based models, some with land-use modules, were used to investigate the effect of cordon and other types of Road Pricing. The results were not as conclusive as those from the work already described, mainly due to the difficulties experienced in adjusting prices in line with re-routed trips.

Concluding Remarks

Tom Worsley concluded his talk by remarking that the project had been fortunate to have been overseen by an economically literate group of senior policy makers. The team had been obliged to overcome the fact that none of the models used was initially set up to examine Road Pricing, that those used had differing responses to changes in car share and that no facilities existed for optimising prices on network based models. Issues for future research were the possible extended use of inter-urban tolls such as the M6 option, the optimum segmentation of user types, a better understanding of car occupancy responses to pricing and an investigation of the longer term responses of public transport operators to Road Pricing schemes. There were fundamental questions concerning both the appropriate use of revenues and the rights of citizens to be discussed.

The key point, however, was that the case for road user charging was now an accepted option for reducing congestion and for coping with additional capacity. The question was no longer if road pricing would be used outside of London but when it would be so used.

Discussion

Questions and comments were then invited from the audience.

Peter Gordon *(AEA Technology Rail)* asked whether pricing would not increase peak traffic on rail, whether replacing explicit fuel duty would not discourage economy and whether urban areas would be able to use money from urban pricing.

Response: With road pricing, there is a strong case for applying marginal social cost pricing to public transport travel as well as to road travel and the impact on rail needs to be considered in the light of the appropriate pricing policy. The modelling suggested that there would not be a large number of direct switches from car to rail. All proposals assume that there will always be an appropriate carbon tax on fuel. The use of revenues is a matter for politicians.

Stephen Plowden asked why economists never compare road pricing with other methods (restrictions of capacity, parking, speeds, etc) of tackling congestion or other environmental problems.

Response: Ministers actually see road pricing as a last resort. Local Authorities already have powers over parking, speeds, bus priorities, bus lanes, etc so why haven't these been effective? Also it is not expected that pricing would be introduced in isolation (London coupled the Congestion Charge with traffic calming, more bus and cycle lanes, etc).

Tom Wolfendon *(SDG)* pointed out that traffic in rural areas would suffer unless there was a flexible fuel duty.

Response: Geographically based fuel duty is not an option.

Graham Zietlin *(Independent)* asked whether an alternative method of dealing with the problem of foreign goods vehicles had been suggested. Also whether it was really true that 'everybody' (including the man in the street and possible future governments) now accepted the need for pricing.

Response: As yet there was no official proposal for the problem of foreign goods vehicles. Ministers and transport professionals now accept the need for pricing, the newspapers are not desperately against the idea and the involvement of such a wide spread of organisations in the work should help with public acceptance.

Jim Coates asked what assumptions had been made about fuel tax.

Response: Because charging was set at the Marginal Social Cost for many users costs would be below their current level, for others it would be above. The 'environmental' cost including the costs of carbon.

Robin Pratt *(Deloitte)* asked whether it had been assumed that road capacities were fixed.

Response: There was no reason why capacities should not be changed and the models re-balanced. Equally there was no reason why Local Authorities should not be allowed to specify local Values of Time.

This concluded the session. The chairman, remarking that he viewed Road Pricing in the way Alfred Brendel viewed the late Schumann sonatas (too easy for children but too difficult for professionals) thanked the speaker for a talk which he personally had found fascinating. The audience response showed that they had also.

Report by Jill Beardwood

TEG NEWS

NOTICE OF ANNUAL GENERAL MEETING OF THE TRANSPORT ECONOMISTS' GROUP

The Annual General Meeting will be held at 5pm on Wednesday 22nd March 2006 at Arup head office, 13 Fitzroy Street (for a map see: http://www.transecongroup.org.uk/Arup.doc) You will be directed to the room.

The agenda will be:

1 Apologies for absence

2 Chairman's report for 2005

3 Treasurer's report and Annual Accounts of TEG for year ending 31st December 2005

4 Election of Committee

5 Appointment of auditors

6 Any other business

The TEG Committee

The Group encourages members to attend the AGM.

The TEG welcomes members who wish to join the committee. The committee meets 3-4 times a year in central London to discuss the programme and general business of the Group. If you are interested in joining the committee or if you wish to nominate a member for 2006 please contact the Secretary, Dick Dunmore at: dick.dunmore@sdgworld.net.

TEG Committee in 2005

Chair
Robert Cochrane

Deputy Chair
Don Box

Secretary, Webmaster and Programme Co-ordinator
Dick Dunmore

Deputy Secretary
Jillian Beardwood

Treasurer and Membership Secretary
Gregory Marchant

Editor
Laurie Baker

Deputy Editor
Peter Gordon

Committee Members
Martin Lawrence

Tom Cohen

Francesca Medda
