



The Transport Dilemma

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The dilemma

Transport now uses the most energy of any sector in the UK having doubled from 17% to 34% in the 30 years since 1970. It is responsible for 22% of CO₂ emissions* which makes it the third largest source of CO₂ after power stations and industry. Vehicles of course emit several other chemical pollutants and also noise. Satisfying motoring demand means taking more and more land space. Travelling is a major cause of accidental injury and death.

Yet affordable transport by land, sea and air, and personal transport by motor car has enabled even the poorest in this country to expand their horizons and enrich their lifestyles. As Fig 1 shows, the growth of travel since the '50s has been accomplished almost entirely through increased use of the car. Whereas other forms of transport have declined by 45 bn passenger kilometres (from 148 to 103 bn p-km) car use has increased by 576 bn p-km (from 58 to 634 bn p-km). Restricting people's use of their cars, the most commonly suggested route to a more sustainable transport policy, would devastate lifestyles. The dilemma is that

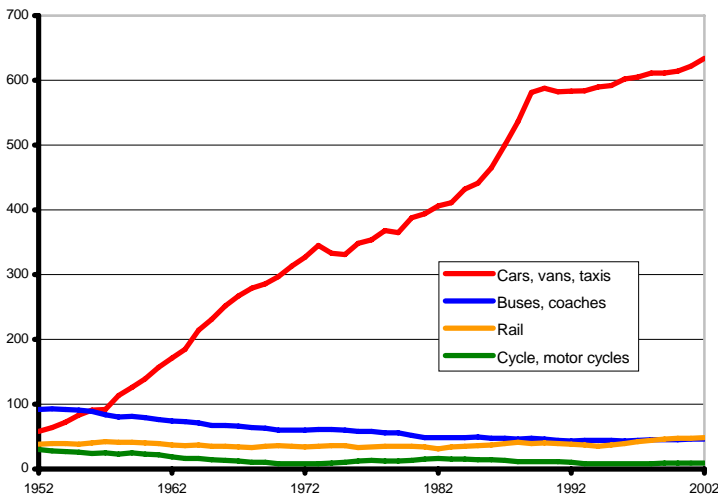


Fig. 1 Distance travelled (billion passenger kilometres/year)

anyone advocating drastic measures to curb car use is unlikely to be elected to carry them out. The 74% vote in 2005 against the congestion charging proposal in Edinburgh shows the difficulty.

There is a route out of this dilemma, at least some of the way, but it is not easy, nor will results be immediate. It is important to understand first why we are where we are.

The present position

The private motor car represents an ideal form of transport: door to door, fast, comfortable, relatively cheap, secure, protected from the elements, with ample carrying capacity for companions, luggage or goods. It is totally 'integrated'

* The difference between the 34 and 22 % arises because transport uses energy more efficiently than power stations etc.

transport. Travel is one of the fastest growing leisure activities. It is widely seen as a major benefit of greater affluence. Nowadays some people think little of driving 50 miles up the motorway to shop; 100 miles to meet friends for lunch; or flying to the USA or even Australia for a few days to attend a wedding.

As the September 2000 fuel crisis showed however, there are public transport (PT) alternatives to some car use and many opportunities to walk and cycle, and people can share cars. Indeed we owe a debt to David Handley and the other fuel protestors for demonstrating that the real problem is not that there are no alternatives, but that people do not choose to use them.

Having said that it is also clear that PT does not offer a complete alternative. *Nor can it ever do so as things exist today.* Since the '50s, cities and lifestyles have been developed on the assumption that most people can travel by car. At present cities are not designed to be served by PT. *If we want genuine PT alternatives we have to change the layouts and architecture of our urban areas whenever they become due for redevelopment.* Though some cities such as Manchester and Nottingham have started, this will take decades, not years.

In the meantime the environmental argument needs to be won. We have to educate, educate and educate people about the environmental imperative of reducing fuel use. One may achieve something by stealth - the odd bit of pedestrianisation here and free public transport there - but it seems to us that the only strategy that will work is one of 'price and persuade'. Ultimately financial pressure has to be applied to persuade people to purchase smaller, more fuel efficient vehicles, travel less, and divert to PT more.

Different strategies will need to be employed. The potential to divert to public transport is much greater in urban than rural areas. Outside towns pressure can only really be applied to reducing wasteful use through motorway tolls and so on, and encouraging fuel efficiency through price.

This note will cover the urban options first, then the non-urban ones, and conclude with short comments on rail use, freight, and travel by air and water.

Good urban planning reduces transport need

There is a direct relationship between the layout of urban areas and the traffic generated. Transport needs can be reduced by intelligent design.

A city centre which has flats, shops, offices, restaurants, and entertainment in, say, 6 storey buildings, eliminates most need for cars. Mechanised transport is vertical rather than horizontal. Similarly, a network of small but comprehensive shopping centres containing a post office, chemist, cash machine, 2000 sq metre supermarket,

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This note is an updated version of the ALDES submission to the Transport Working Group in October 2000. Comments are welcome: send to Richard Balmer, Hon Sec ALDES, 79, Links Drive, Solihull, B91 2DJ, email richard_balmer@blueyonder.co.uk

specialist greengrocer, butcher, and takeaway can reduce the *need* for residents to use a car. Anyone living up to, say, a kilometre away can walk, and up to 3 kilometres, cycle. Footpaths and safe cycleways must be provided of course but the key point is that a large urban area needs to be designed as a series of mostly self sufficient urban *villages*. They can only be ‘mostly’ self sufficient: employment patterns are so diffuse that workers will still need to travel beyond their ‘village’ and there will be big stores and entertainment outlets that serve larger catchments. However these too can avoid generating car use if they are sited near train stations or on good bus routes. At present it is common to find that even environmentally caring people have no realistic PT option.

PT is ‘shared’ transport and is most successful along corridors of high activity: that is where many people want to go to the same shops, work places, social outlets and so on. These corridors have to be *designed in*. They need to link the ‘urban villages’ together. Where there are no corridors, for example in rural or sprawling residential areas, there comes a point where not only do the costs of PT/person escalate, but the *energy used* per passenger mile becomes greater than the use of individual cars. As the table for long distance travel shows, the energy used by a car is not so much greater than a train. Indeed a 125 Diesel train and a small diesel car use the same fuel per passenger kilometre if both are full. It is only if the train can maintain higher occupancy levels (typically 50%) that it gains over the car (typically one or two passengers).

If residential areas and new developments are allowed to sprawl (as has occurred in much of the UK) or if new super-markets or business parks are sited off PT routes, say at new motorway junctions, we should not be surprised if car traffic volumes go up. If city centres, which could be vibrant, highly active places, are allowed to become run down with polluted air and crime, the people who *work* there will not wish to *live* there so car use will go up. If we encourage parents to pick and choose schools for their children instead of supporting the one in their local community, car use for school runs goes up.

What we are saying is that transport planning must be *integral* with town planning, not a separate exercise which follows on *after* the problem has been created.

There may be a temptation to turn one’s eyes to the sky, reflect on the present mishmash, and despair that nothing can be done. We don’t believe this. Visit a city at 20 year intervals and it can be almost unrecognisable (sadly, often as a result of new, frequently elevated, roads). Offices replace old factories. Old terraces are swept away. The key is to redevelop in a way that matches the *best* transport

points such as stations and main road junctions, to the *greatest* transport needs - shops and offices, and the *weakest* transport points (distant from main roads and railways) to the *lowest* transport needs, eg parks and playing fields.

It should be easier in new development, but even here the layout/transport link is not yet being made. **We believe that as part of their planning applications, developers should be required to show how new residents, visitors, employees, etc will be able to (a) walk or cycle to work, shops etc (b) use PT, and only then (c) move about by car.** The provision of short cuts, special cycle routes etc should be built in *from the beginning*. Currently planners consider (c) and largely ignore (a) and (b).

Travel Mode	Typical Use	Full
Express coach	0.3 (65%)	0.2
125 Diesel train	0.8 (50%)	0.4
225 Electric train	1.0 (50%)	0.5
Small diesel car 1.8 l	1.2 (35%)	0.4
Small petrol car 1.1 l	1.4 (35%)	0.5
Suburban train electric	1.7 (22%)	0.4
Large diesel car 2.5 l	1.8 (35%)	0.6
Large petrol car 2.9 l	2.8 (35%)	1.0
Internal air flight	3.5 (65%)	2.3

Energy use (megajoules/passenger mile) for different transport modes.
Source RC18 p.199

If this simple link is understood, one outcome is likely to be higher buildings giving higher population densities at interchanges and other transport nodes. This would match demographic changes which are for increasing numbers of single person households and childfree couples with insufficient time to maintain more ‘garden’ than a few pots on a balcony. We should not be frightened of building 4, 5 or 6 storeys high, especially as this should create space for *urban parks*. Indeed the model of the enclosed London squares, with added carparking and shops beneath, restaurants on the top floor, and a metro station nearby, could be introduced to many other towns. The new canal side developments in central Birmingham work well. These ‘urban villages’ *eliminate* the need for much private car use and of course are of great interest to the 29% of households without cars.

This policy could be implemented via the planning mechanism. **We believe that the key criteria for acceptance of unitary development plans should be proposals to reduce transport need and car need especially.**

We believe also that transport efficient development would be assisted by the financial pressure of replacing business rates and council tax by site value rating. We propose SVR be at a nationally agreed rate (LA s would still be allowed to vary this by a modest amount) because this would mean the greatest financial leverage would occur in the SE and other areas under the greatest land pressure.

Giving priority to the non-car alternatives

PT can not meet all transport needs, and there is a limit to the use of bicycles and walking. However, where these modes are *potential* alternatives to the car, it is clearly sensible to *favour* them. The options of bus lanes, park and ride, cycle paths, pedestrianisation and multi-occupancy lanes (a minimum of 2 or 3 in a car) at peak times, are slowly being adopted and accepted. They only need noting (for more comments see the Notes at the end). The need for through ticketing and integration of competing PT services is on the way. Hypothecation of car park and congestion charging to subsidise PT has now been put into practice in inner London and Durham.

However, arguing that change is *possible* is not the same as *making it happen*. Much as we might wish to widen pavements, provide cycleways or create bus lanes, the truth is that many roads have buildings either side and there is simply insufficient space for all modes of transport. Junction design also becomes more complicated and can *increase* congestion and pollution by causing more delays as traffic lights go through longer and more complicated sequences. Moving kerb lines (where this is actually possible) is expensive because it requires re-positioning of road gullies and sometimes lengths of drain. Provision for the different transport modes becomes a zero-sum game.

In these cases we are forced to set priorities. If we are committed to reducing car use, this means *taking away* priority from the car. There are three ways to do this: stop cars using certain roads; limit cars to one way only systems; or reduce the speed of cars to 20 mph to make life safer for cyclists. (Incidentally, removing a road for car use can have gains. Many examples show that simplifying road layouts reduces delays and so increases road capacity. Every junction, especially those allowing right turns and every set of traffic lights or roundabout, reduces route capacity.)

A major deterrent to PT, remains cost. Bus and train fares are usually much higher than the *marginal* cost (mostly fuel) of using a car. The disadvantage has *increased* over the years. There is a limit to altruism in this country. No advocate for PT can reasonably expect citizens to pay more for a less attractive mode of transport. **We believe therefore that work place and congestion charges should be used not just to improve PT facilities, but to directly reduce fares.**

Indeed there is a good case for making PT *free* - or available for a fixed charge, say £20 or £50 a year. Some years ago Sheffield's low fares policy and London's Fares Fair schemes were instrumental in maintaining usage of PT. The main problem with free travel is a practical one. If private bus operators get all or most of their revenue from *subsidy*, they have no incentive to provide an efficient high quality service. However, technology might provide a solution. Manchester has been developing smart card readers to facilitate concessionary use (ie bus passes). These record all journeys on all buses. When finally commissioned it will allow individual companies to reclaim precise costs of cross ticketed journeys. It will therefore be *perfect* to award payment of subsidy as well.

We believe also that employers should be able to give their staff tax free travel passes if they agree not to drive to work. (We believe schemes like this have already been tried but have no details). It is a simple variation on the old luncheon voucher scheme, and there is a respectable economic logic to it. At present an employer finances the cost of parking space, and may one day have to pay a parking tax to go with it. Those costs are tax deductible. There is no reason why an environmentally friendly alternative should not be tax deductible as well.

We believe that congestion and parking charges *must* be accompanied by education. This is in line with our slogan 'price and persuade'. The country requires a massive culture change. At present unrestricted car use is 'ok'. Big cars are status symbols. In the recent fuel protests the

environmental reasons for high fuel taxes were rarely heard because the government seemed unwilling to make the case. Regrettably our party simply got down below the parapet as well. Yet in other countries, such as Sweden and Holland, cycling is common. There, 'it is the thing to do' and that attitude has to grow here.

One of the findings of the Leicester road charging trial (see Note 3 below) was that road usage dropped *more* when drivers were told air pollution in the city was high. In other words when drivers understand the reasons, they are likely to be, or can be shamed into being, more responsive. There is an argument that congestion charges can not be applied because PT is not in place, but this is a 'chicken and egg' problem. As the fuel crisis showed, it is amazing how much PT *is* in place and it would grow as usage grows.

We can not ignore the problem that responsibility for reducing car use depends on local councillors who often believe restrictions are unpopular and that the electorate will not vote for those who push them through. They will argue that if higher charges are introduced shoppers will drive to nearby towns and employers will re-locate. They have good pragmatic reasons for hanging back or doing nothing. Lib Dem philosophy is to devolve power and let local people decide, but Lib Dem philosophy is also about devolving *responsibility*. Local councils all have responsibility to reduce fuel use.

Councils are already charged to draw up traffic reduction plans. The carrots of grant aid are in place. **We believe that baseline surveys of existing car use should be made, that reductions be agreed (council by council) and made mandatory, with financial bonuses given by government for success and penalties demanded for failure.** Mere statements of intent are not good enough.

Out of town savings depend on fuel efficiency

We have said above that the potential to transfer from private cars to PT outside urban areas is limited. Those living in rural areas frequently do not generate a need that can be met by PT in an energy efficient way. Travelling between urban areas to see friends and family or simply enjoying the countryside and so on, is part of the pleasure affluence has brought to modern life. The car allows us to undertake journeys *we could not otherwise make*, except with excessive cost or time.

The efficiency of motor vehicles and the cleanliness of their emissions has improved steadily since the first versions were preceded by a man with a red flag. However, the Royal Commission on Environmental Pollution's 18th report (RC18) concluded it was still technically possible for cars to improve their fuel efficiency by 40%, light goods vehicles by 20%, and heavy goods by 10% from 1990 levels by 2005. Their 22nd report notes that manufacturers have voluntarily agreed with the EC to improve fuel consumption of new cars sold in the EU by 25% of 1995 levels by 2008, though part of this is dependent on motorists *choosing* smaller cars.

However manufacturers will not promote or invest willingly in fuel efficient designs if the market wants other features. There is no point offering fuel efficient cars if people simply buy bigger ones. Moreover, if fuel efficiency improves, the real cost of motoring will *reduce* instead of

increase. It is therefore imperative to continue to increase fuel prices to sustain a strong price signal both to motorists and manufacturers. RC18 recommended a doubling in fuel price over 10 years, with further rises thereafter. The Institution of Civil Engineers called for the reinstatement of the fuel duty escalator in its 2003 State of the Nation report.

Price pressure is now being applied via vehicle excise duty (VED), with gas guzzlers and dirty emitters paying more. However it seems to us there is no chance of having sufficiently large differentials between the different bands of VED to avoid criticism of inequity from small mileage users, whilst having any kind of significant impact on larger ones. Currently a Ford Fiesta pays £125 VED and does about 10 miles/litre. If the owner drives 5,000 miles in a year, the fuel cost (at 80p/litre) will be £400 and for 20,000 miles in the year, £1600. In contrast a Land Rover Discovery pays £165 VED and does about 4 miles/litre. 5000 miles would cost £1000 and 20,000 miles £4000. Suppose VED is levied in proportion to fuel consumption and the Fiesta rate is really jacked up to, say £400. The Discovery driver would pay 2 1/2 times the Fiesta driver's rate (£1000) but the new VED would double the cost of motoring for the low mileage drivers and only add 25% to the high mileage ones. It provides no measure of the relative damage done.

The party is now considering a scheme using satellite tracking. Charges would be levied according to time of day and location, the intention being to tax congestion. This is a better option than using any fixed charge but gives no credit to the good 'soft pedal' driver and runs the risk of attenuating existing peak periods rather than reducing travel and consequent CO₂ emissions. Worse, unless the charge is graduated according to fuel consumption, there will be no incentive at all to buy a smaller car. **We continue to believe that the environmental case must be made and pressure applied in the most direct way, ie. on fuel itself.** This gives the *maximum* incentives for careful and thoughtful use of a car. We have to get across the need to meet our international commitments and, despite the September 2000 disruptions, be prepared to raise tax steadily on fuel at a rate necessary to achieve this. Essentially we would be devolving responsibilities to *individuals*. The more they respond voluntarily, the less coercion (ie tax) is required. We would be treating citizens as 'grown ups' - a sound liberal principle.

Giving a discount for 'essential' use

Not all rural dwellers are poor but some are. They will avoid the charges and restrictions in urban areas and, perhaps, tolls on motorways. They could save on VED and possibly car tax by buying small clean cars. Nevertheless they can not expect to avoid higher prices or all restraints. One way to assist the poor generally would be to provide for a discount on the first X litres of fuel purchased in a year. If 'X' were 500 and average consumption was say, 10 miles/litre, the first and *most essential* 5000 miles each year would be available at a substantially cheaper rate.

One could achieve this using coupons but today it is feasible to use smart card technology. When buying one's annual tax disc a driver would receive a plastic card similar to those already issued by petrol stations to add 'points'.

Garages would run down the balance as purchases were made. It would be up to the government to decide what the discount would be and the basic allowance, but say the card was worth 30p/litre off the first 500 litres of fuel, the saving to the motorist would be £150/year and the cost to the exchequer about £3bn. This could be offset by raising the general fuel price. We believe the educational value itself of such a scheme would be significant. There would be competition between friends as to who could get the most mileage from their fuel discount card. Much of the heat from higher and higher fuel prices would be siphoned off because essential use would be provided for.

The main technical issue to be tackled is one of potential fraud, but the technology is there and administration simple. The idea could be extended if desired to give greater allowances to special groups, eg the registered disabled and those in scattered rural areas on the basis of post code, but this would ratchet up the administrative complications and costs. **We believe that a fuel discount scheme is practical enough to be worth detailed investigation.**

Though the tax advantages of company cars have been reduced, the provision of company cars according to managerial rank still distorts the market. A similar point may be made about staff mileage allowances. There is no environmental logic in paying higher paid staff higher mileage allowances. There should only be one rate. If the Inland Revenue can be convinced, it could even become the rate for cyclists as well.

Long distance transport

There is potential to undertake part of a long journey by coach or train, especially when travelling into cities where one's car is not required at the far end, and to further increase station park and ride schemes. However a simple way to save fuel is simply to reduce motorway speeds. RC18 quotes a typical vehicle using 0.17 litres/km at 100 mph and less than half that (0.07l/km) at 45 mph. **For a start we believe that the 70 mph motorway limit should be properly enforced.** RC18 estimates that a saving of 3% fuel could be made and there would be savings no doubt on the trauma and cost of accidents, and noise. Motorways have hundreds of cheap camera positions. Installation and administration would be financed by fines.

There is a good case for supporting ring roads round urban areas if the opportunity is taken to *reduce road space within* by extending pedestrianisation. Essentially one would not be *adding* a road but *moving* it. This will reduce air pollution. Despite the government's recent announcements there is very little justification for expanding motorways and major roads. *Currently road congestion is a real disincentive to car use.* Moreover, if fuel use is to go down, traffic growth should slow and even reverse, and so the pressure for new capacity should lessen.

Transfer to rail?

Rail use into and between cities has seen a welcome increase, so much so that Network Rail is struggling to provide sufficient capacity. Slowly the shambles created by privatisation is being sorted out. Franchises are becoming longer to give incentives for investment and the need for some overall strategic thinking to rationalise the market has

been accepted. Track maintenance is coming back 'in house'. In truth government just needs to hasten the investment as much as possible. We would like to see a major expansion of light rail routes in towns despite the cost because light rail provides a more comfortable and thus more attractive form of travel than bus, but there are two points to make: railways are inflexible and very expensive. First then we should not expect to recreate the system before Beeching. Second, rail travel costs can be an even bigger disincentive to travel than the buses, especially for families travelling together, even though the average *subsidy* for train travel, at 8p/passenger mile, is already more than the fuel cost for a small car. **Nonetheless we believe a study should be conducted to find the best charging framework, which rewards excellence in operation, utilises as much capacity as possible, and increases usage at the highest rate.** For example it may be that a family of whatever size should only be charged for one ticket. *Charging is too important a policy instrument to be left to the train companies alone.*

A key point about rail, including light rail systems, is that they can be powered by electricity, but there is no point converting them unless the energy comes from expanded nuclear power or renewable energy sources.

Rail freight

Barely 10% of inland freight is moved by rail. It may be politically incorrect to say so but we do not believe a massive shift from road can be made. Taking freight by rail usually means 3 separate journeys: to the railhead, on the train, and from the railhead to the destination. The transfers take time and cost money though these become less significant the longer the rail distance travelled. At one time the break even distance was about 200 miles, but now, with bigger trucks and better motorways, this is even greater. Furthermore freight train traffic, which is heavy, steady and slow, does not mesh easily with faster intercity trains or stopping local services. Most rail freight ends up travelling by night, though this conflicts with the need for time to undertake track maintenance.

The key area for expansion is long distance distribution to mainland Europe. Our strategy must be to support projects to London which can link to the high speed rail link to the chunnel and the continental network beyond.

Road freight

It is not necessarily true that reducing product miles reduces business costs. Distribution is only one of many costs in a product, and both distribution and product costs have been coming down at least since the building of the first canals. However, as factories producing goods as large as cars and steel become fewer in number there is a good social case to link to the environmental one. That is to say there is no advantage in concentrating production even more. Furthermore there is no case for larger lorries, nor special treatment for hauliers. Whether foreign lorries should be charged to use our roads is a peripheral issue.

Air transport

Air travel costs have come down and down since commercial flights commenced. Where until the '60s a flight was a 'once in a lifetime's experience', now it is no more exciting than catching a bus. As costs fall passenger

numbers go up and the damage to the upper atmosphere and to global warming generally, gets worse.

It will not be popular to cap the trend of increasing travel and even less popular to reverse it. One can do a little by increasing fuel efficiency (eg taxi-ing with a single engine; better traffic control with less stacking and more direct routes; small improvements to current engine technology; using large planes), but there are no painless alternatives. If demand is to be curbed prices have to go up and limits applied. For a number of years national leaders have been able to avoid increasing the costs of fuel on the grounds that they can not act unilaterally. If UK fuel prices rise they argue Americans will simply divert to Frankfurt or Amsterdam and take a short haul flight to Heathrow. This is true to a certain extent but individuals will still pay for a degree of 'convenience'. In other words, UK aviation fuel might well attract say 20% tax before the total flight cost rises so much that significant numbers begin to re-route. Fuel taxes levied across the EU could be even higher without having much impact, though there would be problems with non-EU countries such as Switzerland. Passengers of course already pay £1bn in one of the stealth taxes - airport tax - which, because so much fuel is used actually getting off the ground, is a partial proxy for fuel used. **However, we believe that the UK should bite the tax bullet and unilaterally introduce an aviation fuel tax as well as an airport tax. The level would be set as not to substantially divert international traffic to neighbouring countries.** We would hope this would start an international ball rolling.

Other transport modes

At regular intervals, the notion of transferring goods to water comes up again. Much is shipped in coastal waters and up the lower reaches of the major rivers like the Severn and Thames. However suggestions that more freight can go by inland canals (enlarged or not) should be dismissed. A few opportunities exist but the argument against canals is simple. Capacity is restricted by locks to the equivalent of less than 2 juggernauts per hour. Moreover the water required for continuous use through the locks would exceed reservoir capacity most summers.

ADDITIONAL NOTES

1. On Pedestrianisation: It is highly desirable to separate vehicles from people on pollution grounds. This is particularly true in shopping areas. Here pedestrianisation has proceeded apace and is usually welcomed. Some types of shop such as newsagents, takeaways and wine stores will suffer and have to move but others will gain. More can be done though we should recognize that as the areas extend, shopmobility schemes need to be financed, slow moving electrically powered people movers may need to be introduced, cycle lines marked out, and traders allowed special hours to deliver goods. There are many hybrid solutions for pedestrianised areas. Some allow limited bus access or use car parks above or below the pedestrianised areas. All kinds of alternatives can be practical and all make the air cleaner and take away the dominance of the private car. We see no reason why much more of central London could not be pedestrianised. Its public transport system is good.

2. On making cycling safer: Anyone who has visited mainland European cities, eg in Holland and Scandinavia, can see the potential for cycle trips to replace the car for short journeys.

(RC18) believed cycling in the UK could increase 4-fold from 2.5 to 10% of all urban journeys by 2005, though this did not happen.

It is true cycling is less attractive in rain, wind and icy conditions, and in the dark. It is true some cyclists feel a need to shower after a brisk ride but the number of days cycling is unpleasant are relatively few and the need for showering overstated. The major reason why people drive instead of cycle, apart from laziness, is safety - especially in the dark and wet and where part of a journey has to be made on a busy road. Cycling could be greatly increased if LAs created more safe and continuous cycle routes.

Vulnerability increases as the relative speed between cyclist and motor vehicle grows; where the road width allowing one to overtake the other decreases; and as the volume of traffic increases (so restricting opportunities to swing out into the on-coming lane). Residential roads are generally safe and need no special provision. Single carriageway roads > 7.5 metres wide can safely accommodate 1 metre wide cycle lanes at the cost of a line of paint. In some cases pavements are lightly used by pedestrians or are wide enough for cyclists to share - with pedestrians having the right of way. Too often, however, roads are not wide enough; or their width is squeezed by pedestrian refuges; or the cycle lanes give out at roundabouts or junctions where cyclists are most vulnerable; or using pavements makes pedestrians uncomfortable or harassed; or the cycle lanes have uneven gullies, or are blocked by parked cars.

We believe that in urban areas LA s need *authority* to give priority in the following order: pedestrians, cyclists, PT, commercial vehicles, and finally private vehicles. LA's should be *required* to provide safe cycle routes across their boroughs. They should be free to use canal towpaths and parks. If some major roads end up being only one way for cars, or speeds have to be reduced to make cycling safe, so be it.

3. On congestion charging: In Leicester a trial of 100 motorists using the A47 into the city (the EU funded LERTS trial) found that at £3 a day 10% of motorists switched to PT, and at £6, 14%. Put another way *86% of motorists still used their car even though it cost them over £1000 a year to do so!* This is consistent with the outcome of London scheme, introduced in March 2003 at £5/day, which reduced traffic by about 15%. London's success defied the doom merchants and vested interests and the Mayor in particular should be praised for his bravery.

Even so it seems that charges have to be draconian to get motorists out of their cars and, whilst a great deal of revenue could be raised very easily, there will be annoyance, avoidance, and electoral disadvantages for some time.

4. On tightening vehicle emission standards. Some years ago a study found that something like 50% of pollution was caused by 10% of vehicles. Vehicles are becoming cleaner but, at times of poor air quality, there is a good case for excluding old vehicles including lorries from vulnerable parts of an urban area.

5. On improving traffic flows: Engine efficiency is high and emissions low when vehicles are driven at constant speeds of 40-50 mph. They are inefficient when engines are cold (an additional reason why cycling or walking is attractive for short journeys), when travelling slowly, and particularly when stop-starting as is common in urban areas. This is a problem where humps are used. Trials by Rover over a humped calmed road showed a 10-fold increase in pollution over smooth 30 mph driving. Another study suggests humps may cost lives because ambulances rushing to heart attack victims can be delayed by up to 15 seconds per hump. Cameras are a far better way to control speed.

"Rat running" allows some motorists to jump queues but reduces total road capacity at junctions. With the agreement of residents many residential through roads can be converted into cul-de-sacs by closure at one point or by installing resident operated barriers, offering both safety and pollution gains.

6. On motorway tolls: Congestion is a cost motorists impose on each other and there is no reason why government should bail them out. However there is a good case for levying tolls to discourage wasteful journeys and raise funds to subsidize alternatives. Charges would probably have to be at French levels of 5-10p/mile to be effective (it is 11p/mile on the M6 Toll). UK motorways have not been constructed with space for toll booths so a high-tech solution will need to be developed. Interestingly if 50% of all motorways were tolled at 10p/mile, more than £4bn/year would be raised.

Motorway congestion is worst in the vicinity of urban areas. That is usually because local people use the motorway as a ring road. A study undertaken when the M42 to the East of Birmingham was being considered for widening found that 20% of the journeys were from Solihull to Solihull, 40% from Solihull to elsewhere in the W. Midlands, and only 40% from or to another urban area.