EFFECTS OF Deregulation ON SERVICE CO-ORDINATION IN THE METROPOLITAN AREAS

By W. J. Tyson*

1. INTRODUCTION

Part of the debate leading to the 1985 Transport Act concerned how deregulation, and other measures to promote competition, would affect the co-ordination of services. This was particularly relevant in the English metropolitan counties and Strathclyde, which comprise the largest conurbations outside London. In these areas bodies with specific responsibility for public transport policy and operation — Passenger Transport Authorities (PTAs) and Passenger Transport Executives (PTEs) — had been established for at least ten years. They had duties and wide powers under the 1968 Transport Act to secure the provision of an efficient and integrated system of public transport to meet the travel needs of their areas. In London competition of a different form — within a co-ordinated network — had been introduced in 1984. In the non-metropolitan counties no such co-ordinating bodies existed.

The essence of the debate was political and empirical rather than theoretical. The Buses White Paper (Department of Transport, 1984) expressed the Government’s belief that comprehensive planning was inappropriate for those services which could be provided commercially. In an Annex it was argued that both co-ordination of timetables and facilities for interchange would be provided through the market place, where they could be justified (Annex 2, pages 52–53).

This article reviews the impact of deregulation on service co-ordination in the metropolitan areas outside London. Section 2 examines the concept of co-ordination and the economic costs and benefits which may result from it. Section 3 briefly discusses the mechanisms by which services were co-ordinated before deregulation and the changes resulting from the 1985 Act. Section 4 examines the evidence to date, and Section 5 presents provisional conclusions.

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2. THE CONCEPT OF CO-ORDINATED URBAN PUBLIC TRANSPORT

Co-ordination is not a clearly defined concept: it has come to mean different things to operators, politicians and users of public transport. It will be defined here as a means of attempting to maximise consumer benefit from a given public transport network by administrative rather than market processes, within an urban environment in which land use patterns, traffic regulations and the level of private transport are, in the short run at least, determined exogenously. It is not an objective in its own right, but a series of policy measures. These include the ability to determine service levels, routes and timetables; to determine fare levels, structures and systems; and to promote the public transport network.

Conceptually deregulation, with freedom of entry and exit and with levels of fares and of services determined by operators, is the antithesis of planned co-ordination. But, as the arguments in the White Paper showed, the debate is about means, not ends. Proponents of deregulation argue that the free market will produce a set of services and fares which will maximise consumer benefit in the same way as a co-ordinated network sets out to do.

The original stimulus for co-ordination came, at least in part, as a reaction to the restrictive practices which had grown up under the licensing system instituted in 1930. In many urban areas resources were wasted by artificial restrictions of services because bus territories were often based on outdated and irrelevant local authority boundaries: for instance, restrictions on short-distance passengers using longer-distance services within an urban area, and protective fares which forced some operators to charge higher fares than others. This was accentuated by the existence of an outdated rail network which had minimal links with bus services.

The PTAs and PTEs established with specific responsibility for co-ordination, gradually abolished these outdated practices and made significant resource savings from integrating hitherto separate networks of services. They conferred benefits on consumers, who enjoyed either a higher level of service or lower fares than in the situation which had evolved under regulation without any specific co-ordination authority.

The free market may not produce the same results as a co-ordinated network in a number of circumstances. Firstly, where there is direct competition on a route operators may choose to run timetables which do not give even headways (which would minimise waiting times). This can arise either as a result of decisions taken in response to competitors' timetables or where there are other constraints on utilisation of vehicles (such as interworking with other services). Secondly, there may be scope in a co-ordinated network to trade off resource cost saving and passenger benefits among services or modes, for example by terminating most bus services at railway stations and using rail as the low-cost line haul mode; but in a free market bus operators are likely to operate through services if they result in a higher level of customer satisfaction on any specific individual route. Thirdly, where a high proportion of journeys involve interchange a co-ordinated network can provide facilities such as through tickets, timed connections, etc. The free market as a whole may benefit from such facilities, but some individual operators may not; this makes them more difficult to secure.

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There is a further potential constraint on the extent to which a free market can produce co-ordinated services. If there is no major operator in the market, a degree of co-operation among operators may be needed for co-ordination. Such co-operation could, in theory, lead to collusion; anti-monopoly legislation may have thus the effect of preventing the degree of co-ordination that the market may demand.

3. CO-ORDINATION BEFORE AND AFTER DEREGULATION

The 1968 Transport Act gave PTAs and PTEs a wide range of powers of co-ordination. PTEs had powers to run any form of public transport themselves. They all ran large bus fleets, and two (Tyne and Wear and Stratchlyde) ran urban railways. In Greater Manchester and the West Midlands the PTEs progressively bought the operations of other undertakings (National Bus Company and private operators), so that by 1980 they ran over 95 per cent of all bus mileage. PTEs were also empowered to enter agreements with other bus operators to secure bus services they did not provide themselves, and with British Railways for the provision of local train services within and up to 25 miles beyond their areas (under Section 20 of the Act). These agreements gave the PTE power to specify services, fares, availability of tickets, etc., in return for which the PTE funded any deficit of the services. The provisions of bus service licensing continued to apply, but they were not a major influence on PTA and PTE policies, though they were used to protect the co-ordinated networks from competition from new entrants to the market.

Using these powers services were reshaped into a countywide network. There was extensive co-ordination of timetables to even out frequencies, merging local and inter-urban services where appropriate and introducing other measures, such as common service numbering systems and in some areas common livery or corporate identity. Bus services were often restructured to perform a feeder role to the local rail network. Especially where there had been major investment in rail (for instance, in Tyne and Wear, Merseyside and Strathclyde), this meant curtailing bus services to the central area in favour of a bus-rail feeder network. In other areas new services were established to feed rail stations. There was also considerable investment in interchanges in most areas, even where, as in Greater Manchester, there had been no major investment in the rail network itself. Common fare structures were introduced for all modes in some areas. Travelcards and other multi-journey tickets were developed, valid on all modes and on all operators' services. Tyne and Wear had a system of through tickets for single journeys, originally on Metro feeder services, but latterly on all bus services.

Although these networks were characterised as being "planned", they were based on extensive market research and information to passengers. Indeed the PTEs developed many of the passenger information systems now in use in these areas.

The 1985 Transport Act changed this situation radically. It removed the PTEs' powers to operate buses and converted PTE bus operations into free standing
companies; it replaced PTE powers to subsidise whole networks of services by more restricted powers to secure socially necessary services if the commercial market was not providing them by competitive tendering of individual routes or small groups of services; and, except on subsidised services, it took away all PTA/PTE influence on fares. Moreover, any agreements with or between operators had to be registered with the Office of Fair Trading, and if any agreement was declared to be against the public interest the parties to the agreement had to terminate it or be prepared to justify its continuation before the Restrictive Practices Court. This affected a wide variety of "co-ordination" issues, including inter-availability of tickets, co-ordination of timetables and joint operation of services.

The 1985 Act thus considerably reduced the scope for co-ordination of services by the twin measures of removing most PTE powers to intervene in the market and making agreements among operators subject to Restrictive Practices legislation.

4. RESULTS TO DATE

In view of the changes brought about by the 1985 Transport Act, some change in the level of service co-ordination was only to be expected. The period since deregulation has been characterised by almost continuous change, but the pace has now slowed somewhat and a number of impacts have emerged.

The first is that there has been a high level of competition for both commercial and subsidised bus services. Thus there is no possibility that co-ordination could continue by default (for example, timetable co-ordination and inter-availability of tickets) because a dominant operator continued to provide a comprehensive service network. Data on the extent of competition and on market shares are not readily available in detail, but Table 1 illustrates the position in 1988.

Partly as a result of the high level of competition, the volume of services provided (measured in vehicle mileage) has increased. The main trends are shown in Table 2. Vehicle mileage has increased by about 12 per cent since the last full year before deregulation. While the inadequacies of vehicle mileage figures as an indicator of the level of service experienced by passengers are well known, it is reasonable to conclude that, in aggregate, the level of service has not declined. In many instances vehicle mileage has, as would be expected, increased on potentially profitable routes and diminished on less remunerative routes and at unremunerative times – for instance, in the evenings and on Sundays. In Strathclyde, for example (where there was intensive competition immediately before and after deregulation), vehicle kilometres increased by 13 per cent, but it became necessary to operate 16 million vehicle kilometres of subsidised services to fill the gaps that were left. Vehicle kilometres per annum on the commercial network were as high as on the whole network before deregulation. This shows how resources were concentrated on routes, leaving gaps to be filled by subsidised services. Thus, for many passengers, the impact of any reduction in co-ordination of services has been lessened by the increase in the volume of service provided.

Against this background it is now possible to examine the impact on five
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TABLE 1

Measures of Competition in 1988

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Operators</th>
<th>Bids per Tender</th>
<th>% Market Share of Largest Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Manchester</td>
<td>63</td>
<td>4.0</td>
<td>70</td>
</tr>
<tr>
<td>Merseyside</td>
<td>46</td>
<td>3.1</td>
<td>60</td>
</tr>
<tr>
<td>South Yorkshire</td>
<td>48</td>
<td>2.9</td>
<td>60</td>
</tr>
<tr>
<td>Strathclyde</td>
<td>128</td>
<td>3.4</td>
<td>30</td>
</tr>
<tr>
<td>Tyne and Wear</td>
<td>39</td>
<td>3.2</td>
<td>40</td>
</tr>
<tr>
<td>West Midlands</td>
<td>41</td>
<td>3.0</td>
<td>85</td>
</tr>
<tr>
<td>West Yorkshire</td>
<td>34</td>
<td>3.0</td>
<td>60</td>
</tr>
</tbody>
</table>


TABLE 2

Comparisons of Vehicle Mileage in Metropolitan Areas, 1985–86 to January 1989

<table>
<thead>
<tr>
<th>Area</th>
<th>Estimated vehicle miles per annum (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Manchester</td>
<td>72.0</td>
</tr>
<tr>
<td>Merseyside</td>
<td>42.9</td>
</tr>
<tr>
<td>South Yorkshire</td>
<td>51.2</td>
</tr>
<tr>
<td>Strathclyde</td>
<td>79.0</td>
</tr>
<tr>
<td>Tyne and Wear</td>
<td>48.2</td>
</tr>
<tr>
<td>West Midlands</td>
<td>69.8</td>
</tr>
<tr>
<td>West Yorkshire</td>
<td>61.3</td>
</tr>
<tr>
<td>TOTALS</td>
<td>424.4</td>
</tr>
</tbody>
</table>

\(^1\) Nov. 1987 \(^2\) Mid 1987 \(^3\) Mid 1988 \(^4\) August 1987

Source: W. J. Tyson (1989)

dimensions of service co-ordination, namely: timetable co-ordination; co-ordination between modes; availability of information; inter-availability of tickets; and interchange journeys.
Timetable co-ordination

It is impossible to generalise on the nature of competition. In most areas there is one operator who is clearly the market leader, with a number of fairly large operators competing on several routes and a larger number of smaller operators in particular market segments. There are surprisingly few instances of two or more operators running identical routes, but often two or more operators serve substantial segments of a corridor. Where that occurs it is the exception rather than the rule for timetables to be co-ordinated. In many cases the frequencies of the two operators' services are arithmetically impossible to reduce to a convenient even headway service — for example, a 10-minute frequency by operator A and a 12-minute frequency by B will rarely give a co-ordinated timetable of one bus every 5.5 minutes. It is also a common form of competition for a small operator to run relatively infrequently along a corridor served by another company and to rely on picking up passengers on a casual basis by being the first bus to arrive. Again, this is unlikely to result in any co-ordination.

To some extent the spread of minibus services running at high frequencies, leading to renewed emphasis on high-frequency conventional bus operation, makes timetable co-ordination less necessary. It is where service frequencies are lower that co-ordination of timetables has its biggest impact on passengers and the consequences of loss of co-ordination are more serious. In these circumstances, however, a higher proportion of services are likely to be run under contract to the PTEs. Here, at least, the mechanism for co-ordination remains in place, particularly on sections of route where all services are subsidised. Nevertheless, by definition this only covers services used by a minority of passengers. (An indication of the relative sizes of the commercial and subsidised networks is that the latter comprised between 7.55 and 25 per cent of vehicle mileage in the seven areas in January 1989, with an average of 14 per cent.)

Co-ordination between modes

The greater or lesser extent of inter-modal co-ordination before deregulation was reflected in the varying impact of deregulation. Both were greatest in Tyne and Wear, which had integrated bus and rail services to a large extent in those parts of the area served by the Metro urban railway. Bus services had been reshaped to feed Metro stations; and, while it was possible to use bus as an alternative to Metro for many Metro journeys, it was less attractive in terms of journey time and frequency and had no price advantage.

At deregulation many operators withdrew services feeding Metro stations and introduced competitive through services to central Newcastle from areas previously served by bus-Metro links. The geography of the area is such that many of these services by-passed the Metro stations and did not offer the option of a through link. The clearest example was Gateshead interchange, south of the River Tyne opposite Newcastle centre. At deregulation many bus routes terminating at Gateshead were extended into Newcastle. However, gradually many of these services were withdrawn back to Gateshead, because operators found that the marginal cost of running the congested route over the bridge and into central Newcastle (where, significantly, private parking charges were reduced at the same
time) was less than the additional revenue they could gain from the route extension. In the evening peak in particular, 40 fewer buses per hour now cross the river. Although this indicates clearly that the market can provide co-ordinated services between bus and rail, it also vindicates the pre-deregulation policy of terminating services at Gateshead.

Feeder services to the suburban interchanges, which are between three and four miles from central Newcastle, were in many cases originally maintained (at a lower level) by services under contract to, and subsidised by, the PTE. However, by the end of 1989 some commercial feeder services had been re-established from areas like Killingworth, and through commercial services to Central Newcastle had been reduced in frequency. At the same time it must be noted that the choice between a through bus and the interchange journey is now better in many areas than it was before deregulation. However, the situation is still changing, and it is unlikely that a stable balance between the two types of services has yet been reached.

In other areas of the country the location of the interchange has been a critical factor in determining the extent of co-ordination. Interchanges located at points which are generators and attractors of trips for other purposes (for example, in town centres, at suburban office developments, etc.) have continued to enjoy a reasonably high level of bus services which *inter alia* feed the railway. Where the interchange has no other trip opportunities, and particularly if it is not on a main bus corridor, the level of co-ordination has fallen unless the PTE has intervened with a subsidised service.

A further aspect of bus-rail co-ordination is co-ordination of timetables, particularly where bus and/or train is infrequent (three per hour or less). This has diminished, at least partly because the level of supervision or departures from bus stations, interchanges and timing points has been reduced as part of the effort to bring down operating costs.

In summary, there have been commercial opportunities for integration between bus and rail, though it has taken time for them to be recognised and for the market to react. The role of the PTEs in securing services under contract has been crucial to the continuation of integrated services and has, in some cases, only had to be temporary until the services became commercially viable. As a result of this and of the generally stable rail network in comparison with a volatile bus network, rail patronage on British Rail services within the PTE areas has risen by 6 per cent since 1985–86. In Tyne and Wear Metro passenger boardings have fallen by 23 per cent, though passenger miles have risen by 2 per cent. During this period bus patronage has fallen by 16 per cent.

**Provision of information**

One specific power given to PTEs was to promote the availability of public transport as a whole. They have used this to organise the provision of information on timetables, fares and services of all operators within their areas. Thus they have helped to compensate for the reduction in the level of formal co-ordination between operators, as well as assisting the operations of the market.

Before deregulation most information about public transport services was
disseminated by “formal” methods — for example, printed timetables and telephone enquiry bureaux. Many passengers, however, found out about bus and train services by less formal means: for instance, by asking friends or colleagues, or by trial and error at the bus stop. When services changed, the changes were co-ordinated to cover an area at a time on a single day, and were well publicised in advance.

At deregulation almost every bus service changed; and since then, with 42 days’ notice, every service remains subject to change. Operators differ in their attitudes to providing publicity, some producing timetables and others nothing at all. Where one operator runs a route commercially for part of the day and another runs it on a subsidised contract during the evening, neither operator publicises the other’s involvement in the route.

The PTEs have filled this gap by providing information services. Because of the rapid and extensive scale of changes to the network (there were between 850 and 2,000 changes to services in each PTE area during 1988) and the comparatively short notice (42 days) for changes, telephone enquiry facilities have gained in importance as a way of disseminating information. In Manchester the facilities deal with 5,000 enquiries a week — a rate which has remained steady since the initial upheaval of deregulation subsided. Computerised data bases of timetables help in answering telephone enquiries, and can be used to print timetables on demand at enquiry centres. The resources devoted to this are not insignificant — at least £3 million per year in the PTE areas alone; but the use made of the facilities has proved their importance in assisting the market by providing information on what is on offer.

Inter-availability of tickets

The effects of deregulation on fares merits study in its own right. However, fares are an important element in co-ordination and therefore also merit attention here. Before deregulation, in most metropolitan areas travel could be paid for by a ticket for a single journey valid only on that bus, or with a travelcard (unlimited travel for a specified period of time), or less commonly by some form of carnets (45 or 10 tickets). Inter-availability applied only to the travelcards or multi-journey tickets, except in Tyne and Wear, where all tickets were valid for transfer to other buses or Metro within a specified time of purchase. The effect of deregulation on these arrangements is summarised in Table 3.

In Tyne and Wear the immediate effect of deregulation was that bus operators refused to accept other operators’ tickets for transfer journeys. A few bus-to-Metro through tickets were retained commercially, and through bus-Metro tickets were available on subsidised feeder services. In 1989 bus operators and the PTE (which continues to operate the Metro) agreed to re-introduce through bus-Metro tickets on commercial services running to interchange points. Again the commercial benefits of through tickets have, after an interval, been recognised.

In all areas, it might have been expected that the dominant operator running a comprehensive network would have no incentive to participate with other operators in a travelcard scheme. This has indeed been the case in West Midlands, and until recently in South Yorkshire. Elsewhere, the policy has been to give
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TABLE 3

Inter-modal and Inter-operator Tickets

<table>
<thead>
<tr>
<th>Area</th>
<th>Pre-deregulation</th>
<th>Jan 1987</th>
<th>Jan 1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Manchester</td>
<td>All mode travelcard 10 journey tickets</td>
<td>Retained</td>
<td>Retained</td>
</tr>
<tr>
<td>Merseyside</td>
<td>All mode travelcard One day (off peak) travelcard</td>
<td>Retained</td>
<td>Retained</td>
</tr>
<tr>
<td>South Yorkshire</td>
<td>All mode travelcard</td>
<td>Withdrawn Operator cards introduced</td>
<td></td>
</tr>
<tr>
<td>Strathclyde</td>
<td>All mode travelcard</td>
<td>Partly withdrawn Small bus/rail schemes begun</td>
<td></td>
</tr>
<tr>
<td>Tyne and Wear</td>
<td>All mode travelcard Single trip interchangeable ticket</td>
<td>Retained</td>
<td>Largely withdrawn</td>
</tr>
<tr>
<td>West Midlands</td>
<td>All mode travelcard</td>
<td>Withdrawn Main operator plus rail</td>
<td></td>
</tr>
<tr>
<td>West Yorkshire</td>
<td>All mode travelcard 12 journey ticket</td>
<td>Retained</td>
<td></td>
</tr>
</tbody>
</table>

customers choice, with inter-operator schemes – organised by the PTEs (or in Tyne and Wear by a company jointly owned by the operators and the PTE) – running alongside travelcards valid on one operator’s services only. Thus a degree of co-ordination has been retained through the travelcards, and there was little else to lose. The experience of Tyne and Wear is again instructive in respect of the time taken to restore through tickets.

Where agreement has been reached on jointly available tickets, allocation of revenue among operators has not proved to be a problem. In general, allocation has been on the basis of each operator’s share of the total (undiscounted) value of travelcard journeys. Continuous surveys to determine this are organised by the PTEs.

A factor in this has been the attitude of the OFT. An agreement between operators to honour each other’s tickets – for example, return tickets or travelcards – must be registered. When a large number of such agreements (often in respect of specific services) had been registered and eventually scrutinised, many

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operators were warned that they were anti-competitive. They had the option of testing the agreements in court or terminating them, and all chose to terminate them. Travelcard schemes organised by the PTEs and open to any operator who wishes to participate have been approved after detailed scrutiny of arrangements for revenue sharing, etc. But generally it seems that the law will inhibit this form of co-ordination of operators’ services.

Interchange journeys

Between 10 and 20 per cent of all passenger boardings in the metropolitan counties involve interchange — usually between buses. Specific facilities for interchange have included timed connections, purpose-built bus stations used by all services and, on a much smaller scale, through ticketing. No data exist on the extent to which these facilities have been reduced as a result of deregulation. In many areas there was an initial trend towards longer routes as a means of minimising layover times; this helped to reduce the need for interchange. However, in contrast, routes across the central area were curtailed, with the opposite effect.

There is no doubt that the use of bus stations has declined. In most areas operators have to pay charges for using the bus stations, and this is a disincentive; and many bus stations are not well sited in relation to trip objectives like shops. This has made many interchange journeys more difficult, and has reduced the degree of co-ordination for the passengers who have to change in the course of their journeys. Even where buses congregate on the street, facilities are not so good, with less signposting and less information on stopping places. Bus passengers have to mingle with general pedestrians and vehicular traffic, and this also reduces the quality of the interchange.

5. CONCLUSIONS

Three years of deregulation is a comparatively short time compared with 55 years of regulation and 15 years of co-ordination and integration. Given that since deregulation there has been continuous change in routes, timetables, competition and ownership of operations, any conclusions must be regarded as provisional. Moreover, it must be appreciated that these aspects of co-ordination vary both in their importance and in the extent to which they have been affected.

*Timetable co-ordination* affects most users of bus services in the metropolitan areas, where services along main roads comprise several routes which cross and overlap. Co-ordination has been reduced, and the losses have been only partially offset by the higher level of service. Provision of information has slightly mitigated the loss.

*Co-ordination between modes* affects fewer passengers (about 5 per cent of bus journeys involve rail and between 20 and 40 per cent of rail journeys use bus feeders). Initial impact was severe. There is still a loss in consumer welfare, but it has diminished since deregulation. Provision of information has mitigated the loss.

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Inter-availability of tickets affects significant numbers of passengers (up to about 30 per cent of journeys can be made with some form of travelcard or multi-journey ticket). The main adverse impact has been price increases relative to single fare prices in some areas; but facilities have been preserved, or restored where they have been lost, with only one exception.

Interchange journeys comprise between 10 and 20 per cent of all journeys. Some have been made more difficult by the loss of co-ordination in stopping places.

The initial "settling down" period is not yet over; but so far there are few indications that co-ordination of timetables will improve, and the welfare losses here seem likely to persist. Inter-modal co-ordination is returning, and in the medium term welfare losses to consumers are likely to be reduced. The situation of inter-operator tickets seems more stable, unless OFT intervenes. There seems little prospect of improvement for interchange journeys, unless local traffic congestion grows to a point at which buses are progressively banned from using streets where they currently stop and are forced back into bus stations.

Looking further to the future, co-ordination may increase as operators become more accustomed to the market and obtain better quality information on passenger demand. Experience in Tyne and Wear with bus-rail co-ordination is encouraging in this respect. There have also, recently, been several mergers in the metropolitan counties, which have secured significant market shares for operations apart from those of the former PTEs. Co-ordination may be achieved if a greater part of the network is provided by a single operator — an outcome which the recent concentration makes more likely. Whether that brings us full circle to the problems associated with secure monopolies remains to be seen.

REFERENCES
