10 Matching services to demand

10.1. We are required under the terms of reference to consider the efficiency of Ulsterbus and Citybus in adjusting services to match demand. This chapter discusses the trends in the use of the companies' buses, the information the companies collect on demand, how the companies adjust their services to changes in demand, the relationship between the quality of service and demand, and the interaction between Ulsterbus and Citybus in Belfast.

Demand for the companies' services

10.2. Demand for buses in Northern Ireland, outside Belfast, is dominated by schoolchildren: over half the passengers carried by Ulsterbus are schoolchildren, as shown in Table 10.1. This proportion has increased over time as adult demand has declined and the number of schoolchildren with school passes has risen. Children with school passes accounted for 18 per cent of passenger journeys in 1967, 35 per cent in 1987/88.

TABLE 10.1 **Ulsterbus and Citybus: annual passenger journeys by type**

	Financial year ended March			
	1984		*1988*	
	million	*%*	*million*	*%*
Ulsterbus				
Pupils (with school passes)	19.9	34.9	19.1	34.6
Other children	10.1	17.9	10.5	19.1
Total schoolchildren	30.0	52.8	29.6	53.7
Adults	24.0	42.2	22.6	41.0
OAPs	2.9	5.0	2.9	5.3
Total	56.9	100.0	55.1	100.0
Citybus				
Pupils (with school passes)	2.0	6.7	2.0	7.5
Concessionary (children and OAPs)	9.7	32.7	9.5	35.7
Adults (including cash sales, rail-link and GPO contract)	18.0	60.6	15.1	56.8
Total	29.7	100.0	26.6	100.0

Source: Ulsterbus and Citybus.

Note: The Ulsterbus figures are based on the Almex PDR sample survey and direct information on the number of children with school passes. Citybus figures are based directly on ticket sales.

10.3. Citybus, serving Belfast only, is more dependent on adult passengers. Adult passengers accounted for 57 per cent of Citybus demand in 1987/88 compared with 41 per cent for Ulsterbus. Fewer children travel on school passes (7.5 per cent in 1987/88) but if we assume that at the most 10 per cent of Citybus passengers are old-age pensioners, then from the figures over 30 per cent of all passengers on Citybus must be children. As the distance from school in Belfast is more likely to be below the distance required to obtain a bus pass (two or three miles depending on age) the lower number of passes is not surprising.

10.4. No figures are available on the make-up of the peak demand but as a broad generalisation we can say that in Ulsterbus the peak demand is dominated by schoolchildren; in Citybus the proportions represented by commuters and children are approximately equal.

10.5. Both Ulsterbus and Citybus, in line with other bus companies, have faced a long-term decline in the number of passengers they carry, mainly due to the increase in car ownership. The

total number of passenger carryings over the last eight years declined from 97.1 million to 81.7 million, as shown in Table 10.2. This decline is broadly in line with the trend in Great Britain over this period.

TABLE 10.2 **Ulsterbus and Citybus: annual passenger journeys**

million

	Financial year ended March		
	1980	*1984*	*1988*
Ulsterbus			
School passes	18.1	19.9	19.1
Total	62.7	56.9	55.1
Citybus			
School passes	1.8	2.0	2.0
Total	34.4	29.7	26.6
Ulsterbus and Citybus			
School passes	19.9	21.9	21.1
Total	97.1	86.6	81.7

Source: Ulsterbus and Citybus.

Note: These figures are built up from the number of tickets sold by type of ticket and information on the number of schoolchildren with school passes. They are approximate.

10.6. The General Consumer Council for Northern Ireland has pointed to the lower number of passenger trips per head of the non-car-owning population in Belfast compared with cities elsewhere in the United Kingdom. As it suggests, this is no doubt partly due to the low subsidy received by the companies, but other factors must have been the Citybus flat fare, which discourages people from making short journeys, hard seating, civil disorder and the Black Taxis. Ulsterbus also suggested that route subsidies in Great Britain may support more extensive off-peak services.

Bus use

10.7. Citybus provides 52 stage routes within the Greater Belfast area and Ulsterbus provides 343 routes throughout the rest of the Province. The number of buses in service at 1 October 1988 is set out in Table 8.2.

10.8. Since the late 1970s the number of bus miles for Ulsterbus and Citybus has remained fairly constant compared to the drop in passenger journeys. Total bus miles since 1979/80 and the passenger journeys per bus mile are shown in Table 10.3. Part of the reason why vehicle miles have dropped less than passenger journeys in Northern Ireland has been the increase in the distance being travelled by schoolchildren (see paragraph 10.38). Also the companies have sought to maintain the bus network and this has limited their ability to pare down services as demand has dropped (the companies have been extremely reluctant to close services altogether).

TABLE 10.3 **Ulsterbus and Citybus: passenger journeys, vehicles, and vehicle miles in Northern Ireland**

	Financial year ended March		
	1980	*1984*	*1988*
Ulsterbus and Citybus			
Passenger journeys (million)	97.2	86.6	81.7
Vehicle miles (million)	35.3	33.9	33.7
Passenger journeys per vehicle mile*	2.8	2.6	2.4
Number of buses	1,188	1,168	1,163
Passenger journeys per bus ('000)	82	74	70

Source: Ulsterbus and Citybus.

*This is not a measure of the average loading per bus, which would be obtained by dividing passenger miles by vehicle miles. Figures on passenger miles are not collected.

Level of peak demand

10.9. There are strong peaks in demand in the morning and evening. There is also a drop in demand in the summer when the schools are on holiday, and a large number of buses and some services are withdrawn at this time. The companies do not collect figures on demand at different times of the day, but the number of buses used at peak and off-peak provide some indication, as shown in Table 10.4. Overall the winter peak/off-peak ratio is over 2:1. The peak is less marked in Belfast at around 3:2. These figures will understate the true peak/off-peak ratio of demand as buses are likely to be less crowded at off-peak times.

TABLE 10.4 **Ulsterbus and Citybus: number of buses in service at winter peak and off-peak***

	Peak buses	*Off-peak buses*	*Peak/off-peak ratio*
Ulsterbus			
Southern area	272	124	2.2
Western area	212	65	3.3
Northern area	196	42	4.7
Central area	107	70	1.5
Total	787	301	2.6
Citybus	244	154	1.6
Ulsterbus plus Citybus	1,031	455	2.3

Source: MMC based on information from Ulsterbus and Citybus.

*Off-peak figures are based on the average number of buses in service between the morning and evening peaks.

10.10. No forecasts of demand are undertaken. For planning purposes it is assumed that peak demand will remain at around the same level, as it has in the past, and that therefore the number of buses needed will not vary significantly.

Information on demand

10.11. Ulsterbus and Citybus collect information in different ways. We first discuss Ulsterbus.

10.12. Ulsterbus is currently introducing an electronic ticket machine called Wayfarer. This will provide detailed information on passenger carryings and ticket sales (see Chapter 3).

10.13. Except for the areas which now have Wayfarer, information on passenger carryings per route is not compiled other than as a special exercise. This information had been compiled manually in the past but had been considered too costly. In the absence of information on individual routes, local managers have depended heavily on their own observation and on the observation of their staff.

10.14. The Education and Library Boards (ELBs) provide information on the number of children with school passes, including their address and the school they attend.

10.15. The companies have not used route costings as a basis for making decisions on whether to run a service or not. They argued that a route costing disguised the variations between peak and off-peak over a route and the different costs of supplying services at different times. They therefore considered that an overemphasis on route costings could lead to poor decisions. Instead they closely monitor their operations and costs. Depot Managers are expected to make the most of each bus and each duty.

Wayfarer

10.16. Wayfarer is being introduced throughout Ulsterbus and this exercise is to be completed by the summer of 1989. Wayfarer holds information in its memory which is transferred on to a computer at the depot and can be analysed there.

10.17. Wayfarer records, and prints on the ticket, the date, time of issue, stage boarded, fare, class of ticket (single, return, etc), direction of travel, the number of the ticket, the ticket machine number and the service number. It also records in its memory the journey number, driver and bus identification. Inspectors can record their identity on the machine when they are on the bus. Wayfarer also has the facility to record passengers boarding the bus with a pass or return ticket and this facility will be used once the drivers are familiar with the machines.

10.18. Ulsterbus has developed a number of reports from the analysis of Wayfarer data, mainly suitable for operational control. It intends to use Wayfarer to measure punctuality, to monitor new services, and for concessionary fares recovery, among other things. It is still considering how best to use all the information provided by Wayfarer, and a three-man team headed by one of the Area Managers was due to report early in 1989 on how it might be used.

10.19. We have suggested that Wayfarer could be used to provide a range of information to managers as a stimulus to action. For example, with some assumptions about the destination of passengers with passes, it would be possible to draw a chart showing the loading on a bus over a route. Such a chart could highlight trends and variations and, for example, revenue by route and time of day. Cumulative weekly, monthly or annual charts could be developed. Wayfarer will also help to establish which routes suffer from overcrowding and at what time or times of day. It will also be possible to link the information to selective origin and destination surveys to give managers a better picture of potential and actual demand.

Citybus information

10.20. For Citybus, owing to the current fares and ticket system, information is not available on revenue and passenger journeys by route. As only a small number of schoolchildren travel on passes in Belfast the major source of information on bus loading is from observation.

10.21. Wayfarer is not seen as appropriate for Citybus, which is presently looking at `stored value' ticket systems as a possibility for the future (see paragraph 9.52).

Surveys and other sources of information

10.22. The companies have not carried out any detailed surveys in the past such as origin and destination surveys. They have relied on outside suggestions and their own ideas about the services people want (this process is described in detail in the following section). In September 1988 they commissioned an attitudinal survey which provided information on what people thought about various aspects of the companies' services.

Matching services to demand

Introduction

10.23. Because there is little information on bus usage in Northern Ireland our examination of how efficiently services are matched to demand has had to rely heavily on observation and description. The following paragraphs describe in some detail how the companies have approached matching their services to demand. The first section provides a general description of how services are adjusted on a day-by-day basis, and how services have been altered as demand has changed. Separate sections then discuss school traffic, off-peak services, the Black Taxis, new innovative services (including minibuses) and finally the appropriate type of bus for a route.

Adjusting services to match changes in demand

10.24. Responsibility for running the bus services, including matching services to demand, is devolved to the Area Managers, and by the Area Managers to Depot Managers where appropriate (or in Citybus to the inspectors). Little information is presently kept centrally.

10.25. The overall bus route system has changed very little since the formation of Ulsterbus. The companies place a high priority on maintaining the route network. The complete withdrawal of a route has rarely arisen. Changes in demand have been matched mainly by alterations in the frequency and timing of buses, and with the extension of existing routes, for example into new housing estates. A map showing the Ulsterbus principal routes is at Appendix 2.1 and one showing the principal routes in Greater Belfast (including Ulsterbus routes, Citybus routes and Black Taxi routes) is at Appendix 2.2.

10.26. The introduction of minibuses is now providing the opportunity for new services to be run. Managers are encouraged to try new services. They were told in November 1988 to try a new service if in doubt and watch its progress.

10.27. The companies have an explicit requirement from the DOE (NI) to run their services commercially with the aim of earning an appropriate surplus (see Chapter 2). With the decline in demand for bus travel, and the companies' aim of maintaining the Province-wide network, considerable emphasis has been put on cost saving. The service has been pared down as much as possible where demand is low. Off-peak services have been particularly affected.

10.28. Managers do not have many specific criteria on which to base changes. There is no specific target, for example, on how far people should have to walk to bus stops (although these are now being considered). However, managers aim to have no-one obliged to stand for more than 10 to 15 minutes. The companies believe that it is hard to put down specific guidelines appropriate to the different types of areas they serve. However, they will be seeking to improve standards: this is one of the specific roles of the Inspector General.

10.29. We were told that considerable importance was placed on dealing with problems and complaints quickly. Inspectors, and sometimes Depot Managers, would go out to check places where problems might arise, particularly at pressure points on routes. Useful information was also provided by drivers and by complaints of overcrowding from the public. Problems were dealt with where possible by minor adjustments to services.

10.30. Suggestions for changes to the service come from various sources: complaints, suggestions and requests from the public or outside bodies, and from the companies' own knowledge, experience and observation. We were told that where it was possible to provide a requested change in a service without undue problems this would be done. However, there would be considerable reluctance to run a requested new service that was unlikely to pay its way.

10.31. The companies have a policy of moving quickly into new housing estates where feasible, in order to establish demand for their services and to provide clear assurance that a service will be provided. In some more recent cases there have been delays where the design of the roads would not permit safe operation of buses. In such cases the operation of minibuses may now be appropriate.

10.32. To provide a better understanding of how a bus route operates an example of a rural service is given in Appendix 10.1. Two examples are also given in Appendix 10.2 of how adjustments have been made to services recently to illustrate the process.

Major reviews

10.33. There have been few major reviews or changes to services. Some particularly sharp changes have occurred in Belfast and in Londonderry as a result of civil disorder and competition from the Black Taxis (dealt with in paragraphs 10.45 and 10.46). The companies have followed a policy of gradual evolution where possible.

School demand

10.34. Schoolchildren in Northern Ireland receive bus passes from their ELBs if they live a minimum distance away from school: two miles for primary schoolchildren and three miles for older children. Ulsterbus and Citybus have agreements with the ELBs to carry most of these children to school. The method of payment is being revised and is described in Chapter 9.

10.35. School buses are mainly run as stage carriage services, and will pick up adult passengers, although they are not always shown in the timetable. In rural areas, where school transport follows substantially the same pattern as adult transport, more of the school services can be run as scheduled services catering for both demands. But many are not. For example, in the Northern area 133 buses are run on special school routes not shown in the timetable. In Belfast there is a much more diffuse pattern of demand with children moving from one residential area to another on non-radial lines. The companies do not consider that these routes are normally required by other passengers and so do not run them as scheduled services.

10.36. The running of Ulsterbus is very much geared to the carrying of schoolchildren. Some 47 per cent of buses operating stage carriage services are run almost exclusively for children. Children will also travel on other buses at peak times.

10.37. Citybus services are less dependent on schoolchildren although they still account for over 30 per cent of the passengers using these services. Citybus does not find it pays to dedicate a bus to a school run and the special school bus routes are operated by regular service buses as they become free just after the morning peak and again just before the evening peak. Such buses may operate one or two special school runs or combine loads for two or more adjacent schools.

10.38. Two major changes have occurred in the pattern of school traffic. First the introduction of parental choice in 1977 resulted in children being sent to schools often further away, and sometimes in the opposite direction, from where they were sent previously. Second, when civil disorder started in Belfast, Citybus was able to route special school buses away from the trouble spots: this made the buses very popular as a safe means of transport.

10.39. Ulsterbus and the ELBs have, in the past, encouraged schools to adjust their hours to enable school buses to be run efficiently (see Chapter 9).

Off-peak services

10.40. The companies have been criticised for not running enough services off-peak. The Consumer Council survey (see paragraph 11.4) showed dissatisfaction in Ulsterbus areas with frequencies in the evenings and at weekends.

10.41. The provision of off-peak services is cheaper than that of peak services (see paragraph 9.22) and managers are encouraged to exploit off-peak opportunities where these arise. Special market-day services are run by Ulsterbus and are shown in the timetables. Citybus has introduced late-night shopping services which have proved very popular. Late shop opening was introduced on Thursdays and more recently on Tuesdays, although this is proving less popular. Bus services were augmented at these times at the request of various bodies representing city centre traders and other interested parties (Belfast City Centre Partnership, Belfast Chamber of Trade and the Belfast Development Office).

10.42. During the worst of the civil disorder late evening services in Belfast were reduced to hourly frequencies at best. These were improved to half-hourly services or better about five years ago.

10.43. Where demand is very thin off-peak services have been reduced: on Citybus an hourly service and on Ulsterbus very limited off-peak services may be run. There is no clear rule about when an off-peak bus service should be reduced or withdrawn. We were told that in Londonderry some routes were run with two buses at off-peak even though demand was very thin, as to use only one bus would have reduced frequencies below any `reasonable level'. We were told that in the Southern area demand would have to be quite low before an off-peak service was withdrawn, eg if an off-peak service was carrying an average load of only five passengers.

10.44. Where off-peak services are limited this may increase the peak demand as passengers may have little choice but to travel on peak services.

Black Taxis

10.45. The Black Taxis represent the major source of competition to Ulsterbus and Citybus in Belfast, and to a lesser extent in Londonderry. (See Chapter 2 for a general description of the Black Taxis.) They operate on a fill-up-and-go basis and run at very high frequencies along established routes. Apart from their more frequent services the Black Taxis are able to charge lower fares for shorter journeys. They also operate over long hours: 6.00 am to 2.00 am in Belfast during the week. They are therefore able to provide a very competitive service compared with Ulsterbus and Citybus.

10.46. Ulsterbus and Citybus have not withdrawn services from routes where there is competition from the Black Taxis, although they have had to adjust service frequencies. It is clear that the companies have lost a substantial number of passengers. Evidence we received from third parties suggested that currently some one-third of passengers on public transport in Belfast used the Black Taxis. This was generally seen as unfair competition (see Chapter 2). Reference was also made to the provision of special parking facilities for the Black Taxis out of public funds: the DOE (NI) explained that this provision was made because the Black Taxis had been causing a serious environmental problem in the Castle Street area of central Belfast, which had been selected for major environmental improvement and infrastructure development.

Minibuses and other innovative services

10.47. The companies have been criticised for not being innovative enough. Among other things, the Consumer Council and the trades unions suggested to us that more minibus services should be introduced (the unions favouring the introduction of such services in areas where at present no service was being provided) and the Belfast Civic Trust suggested that there should be better penetration of buses into some housing estates. Citybus was criticised for running too few non-radial routes by various bodies including the Consumer Council. The Belfast Civic Trust suggested that services on some existing radial routes should not terminate in the city centre but should continue on other radii, enabling passengers to make journeys to Belfast Zoo and other popular centres without having to change buses. Citybus told us that 50 per cent of the principal radial routes were already linked to form cross-town operations. The company felt that the value of increased cross-city operations to passengers would be very limited. The main objection to cross-town operation was that it caused the adverse effect of disruption of bus services to be felt over a much wider area of the city than was really necessary, whether disruption was caused by `security incidents' or by traffic congestion. Further linking of routes was not considered to be in the interest of the large majority of Citybus passengers who travelled only to or from the city centre.

(a) Minibuses

10.48. Minibuses provide an important opportunity to bus companies. They enable the companies to run a more frequent service with the same peak capacity. They also enable companies to

run buses into housing estates with narrow roads that single-deck buses could not penetrate. Although `converting' to minibuses can cost more, a more frequent service run close to where people live can generate extra demand and justify the cost.

10.49. There are 25 seats on the minibuses to be introduced by the companies compared with 53 seats on a fully-seated single-deck bus. Two minibuses therefore will provide approximately the same capacity as one single-deck bus. Initial comparisons suggest that if two minibuses are run instead of one single-deck bus over the same route costs would increase by about 19 per cent, or 13 per cent if the capital grant is taken into account (see Table 10.5). However, this would allow the bus frequency to be doubled. Various studies point to an increase in demand of 40 to 60 per cent when a service frequency is doubled, although this is very much an average estimate and actual figures will vary depending, for example, on the route, the time of day and the frequency of the existing services. On these figures a conversion to minibuses can be profitable.

TABLE 10.5 **Cost comparison of normal bus and minibus services**

Costs per year	*Company average*	*Minibus with the same miles and duties per bus as the average*	*Ratio two minibuses to one average bus*
Staff cost per duty	£11,560	£6,300	
Duties per bus	1.26	1.26	
Staff cost per bus	£14,566	£7,938	1.09
Mileage cost per mile	7 pence	5 pence	
Miles per bus	32,900	32,900	
Mileage cost per bus	£2,303	£1,645	1.43
Capital cost per bus* (excluding the bus grant)	£6,740	£5,710	1.69
Maintenance cost per bus	£10,620	£5,000	0.94
Total cost per bus	£34,229	£20,293	1.19
Total cost after the bus grant	£30,859	£17,438	1.13

Source: MMC based on data from Ulsterbus and Citybus.

*Annual annuitised cost.

10.50. The use of minibuses in Great Britain has been encouraged by the privatisation and deregulation of bus services. Minibus services have proved more profitable in some cases. They have also been an effective response to competition; in many cases the introduction of a frequent minibus service has helped deter competitors from introducing rival services. Indications to date are that routes converted to minibuses in Great Britain have experienced an increase in passenger demand of around 50 per cent, in the range 30 to 80 per cent.

10.51. Ulsterbus and Citybus have taken an avowedly cautious approach to the purchase and use of minibuses. A close watch has been kept on experience in Great Britain. From the evidence obtained there the companies considered that minibuses were likely to be most profitable when used on short routes typically of 20 minutes or less.

10.52. Minibuses are envisaged by the companies for use in three types of situations: to replace normal buses where there is inadequate demand, to penetrate areas such as housing estates which are not suitable for normal buses and to convert existing services to higher frequencies. The conversion of services is envisaged as more limited in rural areas where there is a high peak demand from schoolchildren but greater potential is seen in both small and large towns.

10.53. The first minibuses introduced have been used by the companies mainly to expand and develop existing demand, eg in estates physically unsuitable for a normal bus.

10.54. Bangor is the first place in Northern Ireland where minibuses have been used to convert a normal stage carriage service from single-deck buses, and there they have been used additionally to extend and supplement the existing routes.

10.55. Bangor has been used as a basis for setting operating costs and revenue targets for other routes, although this provides only a rough target and the companies believed it may be on the high side. They believed that further experience was needed before a clearer picture of the potential for minibuses would appear.

10.56. The Consumer Council, in its response to the Belfast Urban Area Plan, suggested that the network of roads in Belfast would lend itself to the introduction of localised minibus services, particularly on housing estates off the main road some distance from current bus routes. These services could provide transport to local shopping facilities etc and they were recognised as a possibility by the companies, which are still considering how best to use minibuses in Belfast. The companies did not consider, however, that minibuses were appropriate for the arterial routes into Belfast, for example along the Falls Road and Shore Road, where route lengths were currently five to seven miles. These were seen as more appropriate for the normal bus. Also the companies considered that the current fares system was not suitable for generating short-distance traffic.

(b) Other innovative services

10.57. Citybus has approximately 60 radial routes. Fourteen of these are linked, with the same bus going in on one radial route and out on another. In these cases the final destination of the buses is displayed and passengers can remain aboard. However, they still have to pay two fares, one to go into the centre of Belfast and one to travel out again. If a linked route is not available it is necessary to go to the centre of town and change buses. The need to pay two fares to cross Belfast is a deterrent to passengers. The need to transfer between buses when a linked route is not available may in some cases also be a deterrent. Citybus recognised that cross-city passengers currently considered their total fare to be high and stated that this was being carefully considered in the current review of its fares structure and ticketing system. It was considered important that any transfer facility for cross-city passengers should be at least of equal benefit to passengers whose journey involved a change of bus, and that the ticketing system should achieve the aim of excluding fares evasion, which had continued to be identified among cross-city passengers.

10.58. An experimental non-radial service, the South-East Link from Belvoir to Ballybeen, has been tried and has proved highly successful. Another service was tried from Ballyduff to the Abbey shopping centre but this was unsuccessful and was withdrawn.

10.59. There are instances where Ulsterbus and Citybus services serve the same estate. In such cases Ulsterbus may provide a quicker service into town as it does not pick up passengers in the Citybus area. In these cases Ulsterbus may be preferred by commuters.

10.60. Some fast services are operated into Belfast. However, little scope for further fast services is seen except where there is a fast road. There are two motorways into Belfast, but even on these the companies say that congestion during peak periods may at times offset the advantages of the faster route.

10.61. The companies recognised that there was further scope for other innovative routes within Belfast; but they were cautious about introducing more fast services and non-radial routes. They considered that these would divert passengers away from the current radial routes and result in the frequencies on these routes being reduced to the detriment of the remaining passengers.

Choice of bus type

10.62. The choice of the appropriate bus for a route depends on balancing the cost of the bus against the capacity and facility it provides (two minibuses are more expensive than one single-deck bus but can provide a more frequent service which can generate additional demand). In the past the companies have concentrated on single-deck buses, with limited use of double- deck buses. With the introduction of minibuses the companies now have a considerable range of vehicles to allow them to choose the best mix to meet the actual and potential demand.

10.63. Most buses run by Ulsterbus are single-deck buses seating 53 or 49 passengers with 22 standing. Only 30 double-deck buses are run. These seat 86/76 passengers with 12 standing. They have been used on routes where a large number of passengers may otherwise have to stand for more than 10 to 15 minutes (typically on long school runs).

10.64. Citybus also runs mainly single-deck buses. It runs two types, fully-seated buses with 52 seats and space for 22 passengers standing and `standee' buses with between 33 and 43 seats and space for between 47 and 37 passengers standing. About three-quarters of the Citybus fleet comprises standee buses. The standee buses provide slightly more capacity (six people). Some allow quicker access and exit as they have a middle door, although since 1981, in an attempt to reduce fares evasion, the middle door has not been put on new standee buses.

10.65. Citybus tries to allocate the bus appropriate to the route. On the long, Dundonald route it would aim to use a fully-seated bus but on shorter routes it would use standee buses to deal with peak demand.

Relationship between quality of service and demand

10.66. We are required to consider the extent to which a higher quality of service might generate net revenues. We now discuss the impact of quality of service improvements on demand. Chapter 11 provides a description of the companies' quality of service and the improvements being undertaken.

10.67. The companies have not attempted to estimate the sensitivity of demand to changes in quality of service. There is, however, good evidence from Great Britain and elsewhere that demand is sensitive to frequency and reliability and other aspects of service. Quality of service may be at least as important as the fare in influencing the passenger's decision to start or continue to travel by bus.

10.68. A bus journey involves walking to and from the bus stop, the waiting and comfort at the stop, the travelling time and comfort and any problems caused by having to change buses. The evidence suggests that in urban areas passenger demand is most sensitive to the waiting at the stop (reflecting service frequency and reliability), then to the walking distance to the stop and thirdly to the travelling time. There is little evidence on the impact of bus comfort, and comfort at shelters, on demand owing to the problems of measurement, but these may also be very important.

10.69. The most extensive evidence is on frequency. The range of estimates of the elasticity of demand with respect to frequency varies widely, but the evidence suggests that average elasticities may be around 0.4 to 0.6. There is less evidence on reliability but from attitudinal studies and on theoretical grounds it seems reasonable to assume that demand can be quite sensitive to reliability. Walking time is probably less important than waiting time, but there is a threshold and long distances from the bus stop may be a considerable deterrent, particularly for older people. The sensitivity of demand to travelling time depends on the distance travelled. Demand can be quite sensitive on longer journeys, but it is probably not very important on short journeys where it can have only a small

impact on total journey time. In general, off-peak elasticities are higher than peak elasticities and car owners are more sensitive to changes than non-car owners.

10.70. The companies have in the past gone for a `basic' service with the emphasis on minimising costs whilst maintaining the route network. As demand has dropped the companies have responded by reducing services rather than changing the `image', quality and nature of the service provided.

10.71. Although many of the measured sensitivities of demand do not suggest that improving the service will necessarily make money, there will be cases where it does. Some of the experimental services put on by Ulsterbus have demonstrated this. Also minibuses can in some instances provide means of improving services and demand at a profit.

10.72. Citybus has faced considerable criticism about comfort on its buses, particularly about hard seating, smoking and cleanliness. It is not possible to quantify the deterrent effect of hard seating but it would appear that in the past Citybus has placed too much priority on cutting the cost of vandalism.

10.73. Citybus has also been criticised in the Halcrow Fox report (see paragraph 9.44) and by the Consumer Council for lack of seats on its buses. It is now looking at increasing the number of seats on some of its standee buses and is also considering whether to run more, fully-seated, buses (see Chapter 11).

10.74. Off-peak frequency has been criticised, particularly in rural areas, as has lack of information and shelters at bus stops. The lack of basic facilities such as shelters at bus stops will have some effect on demand.

10.75. The companies did not consider that bus stops were generally too far from people's houses and said that minibuses would enable better penetration into housing estates.

10.76. Overall the companies did not believe that quality of service improvements, apart from increased frequencies, would generate much additional demand, but they believed it would help in retaining existing customers. The companies did not intend to monitor the impact of specific quality of service improvements on demand.

Ulsterbus/Citybus interaction in Belfast

10.77. The need for more integration in Belfast was recognised by the companies. Integration in the Monkstown area when the joint Ulsterbus/Citybus Monkstown depot is built was being actively considered at the time of our inquiry and action was expected within 12 months. Further integration was being considered. The companies had seen obstacles to integration in the past. The most important of these had been the Citybus flat fare system and problems with fares evasion. To extend this system to Ulsterbus would, they believed, have increased the problems and led to a loss of revenue. Furthermore there were obvious problems of integrating two companies with different working practices. Progress had been made in dealing with these problems.

10.78. The Consumer Council recommended that Ulsterbus should be able to operate within the Citybus area at off-peak times. There is also the possibility at peak times that partly-full Ulsterbus buses would run into Belfast passing by waiting Citybus customers. According to the companies, however, the availability of spare Ulsterbus capacity to Citybus customers would make a significant contribution only on a few radial routes, because of the relatively limited frequency of services provided from out-of-town locations compared with the Citybus urban services. One example would be the Shore Road, and in this case it was the intention of the companies to revise and integrate the services in connection with the opening of the Monkstown depot.

10.79. The companies were considering allowing Ulsterbus to pick up passengers in the Citybus area on an experimental basis in the future. The first stage would be to allow this arrangement in the evenings after about 6.30 pm and on Sundays. They did not consider that it would be accepted by the public if they picked up passengers on the way in but did not put them down on the way out, for example in the rush hour. They also thought that such a policy would be to the detriment of the Ulsterbus passengers who at present enjoyed a fast run into the city during peak times.

CONCLUSIONS AND RECOMMENDATIONS

10.80. We were asked in the terms of reference specifically to look at the efficiency of the companies in adjusting services to match demand and whether greater efficiency in this matter would increase net revenue. The companies have placed a high priority on keeping costs down and we believe that in this respect they have been successful. We also believe that through devolving decisions on matching services to demand they have been able to respond quickly to the perceived changes. There has been a lack of information about passengers but this is now being resolved. We feel, however, that there has been too much emphasis in the past on keeping a basic service running, and too little on adapting the service to changing needs and circumstances, although this has been understandable given the problems with civil disorder. The companies need in particular to make more use of minibuses, take more account of the impact of the quality of the service on demand, be more ready to try new services and rationalise Ulsterbus and Citybus services in Belfast. In all these respects we detect a positive change of attitude in the companies which we commend. Our specific recommendations are given below.

Information on passenger demand

Regular information

10.81. Until recently only limited information has been collected and collated on passenger demand. For example, information on loadings by time of day and route has not been collected on a regular basis, although special exercises have been undertaken when the companies considered it necessary. Ulsterbus is presently installing a new ticket machine, Wayfarer, which will provide a substantial amount of the information needed, and it is currently considering how best to use this. One deficiency at present is that the drivers are not recording people who get on the bus with a pass, or season or return ticket; the company intends that this should be done. We welcome the move to develop better information for managers and consider that there are specific ways in which the information could be used for helping to match services to demand. We therefore recommend that Ulsterbus should:

(a) record passengers getting on the bus without buying a ticket;

(b) use Wayfarer to analyse the level and make-up of demand over the day by route;

(c) ensure that Depot Managers make use of the information on a week-to-week basis and that a summary is prepared for senior management at least once a quarter, highlighting buses which are overcrowded or underutilised; and

(d) consider ways in which Wayfarer could be used to assess the impact on demand of changes in services on particular routes (and in fares) and the cross-impact on other routes.

Surveys

10.82. The companies have not up to now carried out origin and destination surveys or surveys assessing potential demand. They have, however, just recently (September 1988) carried out an attitudinal survey of their customers. We welcome this but consider that more could be done to help managers match services to the needs of actual and potential customers. It would help the companies

if they knew exactly where passengers were travelling from and to. We therefore recommend that the companies should:

(a) carry out some trial origin and destination surveys of their passengers on routes where adult demand is relatively high. This should be linked to information from Wayfarer to assess how closely the services are meeting the needs of the customers, for example whether minor adjustments would be helpful; and

(b) carry out surveys of potential demand.

Demand projections

10.83. No demand projections are undertaken by the companies although they are aware of the trends in demand. Over the past ten years the make-up of demand has changed with a significant drop in adult demand and a continuation of this trend into the future could have important implications for how the bus services are run. Consideration needs to be given to this. The introduction of minibuses will also affect demand and this needs to be monitored. Although we accept that the bus companies can respond fairly quickly to changes in demand, it would help to know what potential problems lie ahead. Demand projections are also needed to help develop the corporate plan (see paragraph 2.71). We therefore recommend that the companies should assess the impact of various possible trends in demand to help identify any implications for services and purchasing policy.

Black Taxis

10.84. The Black Taxis represent a major source of competition to the bus companies, particularly in Belfast. They have caused adjustments to the companies' service frequencies and a substantial loss of demand and, consequently, of revenue (see paragraph 9.54).

Seating on Citybus

10.85. Complaints have been made about the lack of seating on Citybus `standee' buses. Citybus has been increasing the number of seats on these buses and is looking into ways of increasing them further. The capacity lost from doing this is small and we were told by Citybus that it did not seriously reduce access and egress from buses. We welcome the action being taken by Citybus (see paragraphs 11.12 and 11.24).

New routes

10.86. The companies have been criticised for not introducing new types of services. We consider that the companies may have concentrated too much on maintaining their network and too little on introducing new types of services, although the companies have been going through difficult times due to civil disorder. The companies are now encouraging managers to try out new types of services. We welcome this.

Basic nature of services

10.87. The companies have provided a rather basic service in the past without enough consideration for the impact this has had on passenger demand. They are now addressing many of the problems for which they have been criticised (see Chapter 11). We welcome all the moves in this area. Specific recommendations are made in Chapter 11. The companies are sceptical of how much extra demand can be generated through these changes. Taken together they may have more impact than the companies believe and may more than pay for the costs involved. If this is the case further changes may be justified. We therefore recommend that the companies should include in the surveys

recommended in paragraph 10.82 questions designed to assess how many new passengers have been encouraged to use the buses and whether current passengers have increased their usage, and why.

Introduction of minibuses

10.88. The companies' policy on the introduction of minibuses is avowedly cautious. The use of minibuses can allow a more frequent service which can penetrate housing estates and may generate enough extra demand to justify the higher costs involved. The companies have recently ordered 40 new minibuses and they will need to assess how successful these are. Up to now they have mainly identified places outside Belfast for the use of minibuses. However, they recognise that there is a role for them in Belfast. We recommend that the companies should build on their experience of services outside Belfast to introduce more minibus services into Belfast.

Rationalisation of Ulsterbus and Citybus services in Belfast

10.89. There is an accepted need for rationalisation of the companies' services within Belfast. The companies plan to integrate the Ulsterbus and Citybus Greater Belfast services in the near future. They will also be experimenting with Ulsterbus services picking up passengers in the Citybus area in some off-peak periods. We welcome these changes. There is, however, a danger that Ulsterbus long-distance passengers may suffer because they currently enjoy a fast run from the periphery of Belfast into the centre. The companies are aware of this problem and we agree with them that Ulsterbus passengers should not be unduly inconvenienced.