

*Abridgment*

# Intercity Bus Deregulation: The Impact on Urban and Rural Public Transportation Systems in the Provision of Intercity Bus Feeder Service

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## ABSTRACT

The impact of the Bus Regulatory Reform Act of 1982 on urban and rural transportation systems in requiring these systems to provide intercity bus feeder service is analyzed. It is concluded that requiring these systems to provide such feeder service will generally be beneficial to these systems if they do not have to be redesigned. If redesign is necessary to accommodate this type of feeder service, these urban and rural systems will probably not be an effective means of maintaining access for a given community to intercity bus service. Rather than subsidized intercity bus feeder service, it will be more effective for government to subsidize intercity bus service to be provided by an intercity bus carrier.

With the passage of the Motor Carrier Act of 1935, U.S. intercity bus carriers engaged in interstate commerce were placed under the jurisdiction of the Interstate Commerce Commission (ICC) and were subjected to ICC price, entry, service, and financial regulations. Under the ICC's interpretation of the act, entry by new intercity bus carriers and expansions of new routes (other than through merger or acquisition) by existing carriers were highly restricted. Also, intercity bus carriers faced little intramodal price competition. Because of financial difficulties incurred in the 1970s arising from intermodal competition, the intercity bus carrier industry by the late 1970s began to petition for economic regulatory reform in order to have the flexibility to compete in the marketplace as well as to promote operating efficiency. In September 1982, Congress enacted the Bus Regulatory Reform Act (BRRA) (P.L. 97-261, 96 Stat. 1104), which substantially reduced entry and exit controls at both the federal and state levels and prepared the way for complete deregulation of intercity bus rates (1-3).

The impact of the BRRA on the intercity bus industry (passengers and freight) has been well documented (4-6). However, there is an important aspect of the BRRA that has received little or no attention: its impact on urban and rural public transportation systems. The BRRA allowed established carriers to abandon regular-route intercity bus service in many sparsely populated communities. Consequently, urban and rural public transportation systems in many of these communities have had to serve increasingly as intercity bus feeder systems to transport individuals to distant intercity bus stops. The purpose of this paper is to analyze the impact of requiring these urban and rural public transportation systems to provide such intercity bus feeder service.

## OVERVIEW AND BACKGROUND

The BRRA represented the first significant change in intercity bus regulation since the Motor Carrier Act of 1935. Similar to prior legislation affecting

truck and air transportation, the objective of the act is to deregulate intercity bus transportation in order to substitute competitive market forces for regulatory decree in the determination of fares and schedules. By removing regulatory barriers to entry into and exit from profitable and unprofitable routes, the major provisions of the act are directed toward granting bus companies the flexibility to rationalize their route structures. Rather than being required to prove that service is necessary, future entrants will basically be judged by a "fitness only" criterion. Exit from unprofitable routes will be permitted if the carrier can demonstrate that the variable cost of service exceeds revenues (7,p.39).

In addition to the prevailing trend toward deregulation, passage of the BRRA was also motivated by the past financial performance of intercity bus firms. From 1980 to 1982, the net operating income of all carriers decreased 56.8 percent, falling from \$132 million to \$57 million annually (5,p.4). This decline in revenues is directly attributable to decreased demand stemming from increased intermodal competition. The one competitive edge traditionally held by the bus industry, low fares, is rapidly being eroded by stabilized gasoline prices and increased price competition from the newly deregulated airlines. This competition has limited the demand for intercity bus service primarily to the young, the elderly, and low-income segments of the population in general.

Regulation of the intercity bus industry has been conducted at two levels of government. At the federal level, the ICC approves fares, exit, and entry along interstate routes. Regulation on intrastate routes and intrastate portions of interstate routes is the responsibility of state commissions. Historically, state agencies have enforced a lower fare structure and have been less willing to approve requests to abandon service along unprofitable routes than the ICC. As a result, it has often been charged that the higher fares on interstate routes have necessarily cross-subsidized non-profitable local routes (5,p.71). This system of dual regulation created a unique problem in the deregulation of the industry.

Deregulation at the federal level alone would not have been sufficient to promote workable competition. As long as state commissions could deny requests for abandonment or higher fares, the interstate trunk lines would have needed to continue to produce higher fare revenues in order to make up for losses experienced on unprofitable routes that could not be abandoned. Existing carriers were placed at a financial disadvantage when competing with new interstate entrants that are not required to cross-subsidize unprofitable routes. To avoid such situations, the BRRA gives the ICC power to preempt state regulatory decisions that deny higher fares or requests to abandon unprofitable routes.

As with other recently deregulated industries, the full effect of the BRRA on intercity bus service will not be known for some time. Of particular importance to this paper is the impact of BRRA's exit provisions on the intercity bus industry. The act has accelerated the historical trend toward discontinuance of regular-route service to many sparsely populated communities. The ICC notes that between 1972 and 1980 (before the BRRA), approximately 1,800 communities lost all intercity bus service. This figure represents about 10 percent of the total number of communities receiving intercity bus service in 1972. In January 1984, the ICC reported that in the one year since enactment of the BRRA, 1,322 named places had been eliminated from time schedules (5,p.80). In May 1984, the Motor Carrier Rate-making Study Commission (MCRSC) reported that 2,154 points with a total population of 4,292,412 had been abandoned as a result of the BRRA (4,pp.350,356).

According to the MCRSC study (4), the average population of points losing service was slightly less than 2,000. The obvious implication is that low-density regions are bearing the brunt of deregulation. It has often been stated, however, that this was not an unintended result of the BRRA. It is interesting to note that most discontinuances have been requested by the dominant carrier, Greyhound. More than 1,100 of the 1,322 places eliminated from scheduled service in 1983 (according to the ICC) had been receiving service from Greyhound. Another 82 discontinuances were attributed to service cancellations by Trailways and its affiliate carriers, and only 125 discontinuances were reported by all other carriers. Apparently, the major carriers are continuing to consolidate most of their activity along trunk lines between major population centers, leaving smaller communities to be serviced either by smaller or by no intercity bus carriers at all.

Communities that lose intercity regular-route bus service may be classified into three groups:

1. Communities that retain alternative intercity bus service on a different carrier,
2. Communities within larger urban areas that have lost all direct scheduled intercity bus service, but where the larger urban area retains service at some other point or points, and
3. Communities that are self-contained (or not a part of a larger urban area) and that have lost all direct scheduled intercity bus service.

Communities of type 2 typically have an urban public transit system that provides service between the community and the larger urban area. This public transit system can act as a feeder system in transporting community intercity bus passengers to intercity bus service points in the larger urban area. Communities of type 3 typically have no public transportation system that provides service to a neighboring community where intercity bus service is still available.

In an early survey (4,pp.80-83) by the ICC of communities where regular-route intercity bus service had been dropped or was proposed to be dropped, communities of types 1, 2, and 3 constituted 19.2, 20.8, and 60 percent, respectively, of the total number of these communities. Obviously, the severity of the loss of intercity regular-route bus service was the greatest for type 3 communities. This follows because they are less likely to have a public transportation system to provide intercity bus feeder service to distant communities and because they constitute the largest number of communities losing intercity bus service. Furthermore, because intercity bus passengers tend to have incomes that are lower than the national average, intercity bus passengers in type 2 and 3 communities are less likely to have access to the private automobile as a means of reaching intercity bus service points in neighboring communities. Hence, if intercity regular-route bus service is to remain an alternative means of transportation for individuals in type 2 and 3 communities, not only will greater pressure be placed on existing public transportation systems to provide intercity bus feeder service (as found in communities of type 2) but also new rural public transportation systems will be established in communities of type 3.

#### IMPACT OF INTERCITY BUS FEEDER SERVICE ON PUBLIC TRANSPORTATION SYSTEMS

Public transportation systems are defined in this paper as government-owned or government-financed systems (or firms) that provide local for-hire passenger service in urban and rural areas. Only public transportation systems are considered in this study because they include an overwhelming majority of all local systems. However, the results of the study can readily be generalized to apply to private systems.

Urban public transportation systems may provide transit as well as paratransit services. Rural public transportation systems primarily provide only paratransit services. Transit service is scheduled, fixed-route passenger service such as scheduled, fixed-route bus, subway, and streetcar service. Paratransit service is that provided within urban and rural areas other than the scheduled, fixed-route service.

#### Transit Service

As stated in the foregoing, if intercity bus service is lost to communities of types 2 and 3, pressure will be placed on urban and rural public transportation systems in these communities to provide intercity bus feeder service to intercity bus stops in distant communities. For communities of type 2, pressure generally will be placed on urban public transportation firms to provide feeder service; for communities of type 3, the pressure will be placed on rural public transportation systems. If fixed-route transit that connects with intercity bus stops in distant communities is already in place and if the demand for feeder service is less than the unused vehicle capacity on these routes, little or no burden will be placed on the public transportation system to provide service.

If the feeder demand exceeds the unused vehicle capacity on the fixed route or routes, the transportation system will have to add additional vehicles. However, there will be a benefit to existing riders as well as to those of the feeder route or routes in that with the additional capacity, the frequency of service will increase (or the headway



time between vehicles will decrease). With an increase in frequency of service, passenger waiting time on average along the route will decrease and thus improve the quality of service. The improvement in quality of service, in turn, would be expected to further increase ridership along the route. Thus, if transit fixed routes are already in place that would serve as feeder routes to an intercity bus stop, the impact of the feeder ridership on the routes will generate a net benefit to the transportation system in that they would contribute to the cost of formerly unused vehicle capacity (and therefore decrease the subsidy required if they were previously subsidized) or lead to an improvement in service (i.e., an increase in the frequency of service). However, if public transportation management does not increase vehicle capacity when feeder demand exceeds unused capacity, quality of service along the route will deteriorate because of the overcrowding of vehicles.

If fixed-route transit is not currently available to feed passengers into intercity bus stops, the transit system will probably not establish a new fixed route to provide such service. This follows, because surveys generally indicate that intercity bus travel is an infrequent event for most users.

#### Paratransit Service

Paratransit has generally been classified as either demand-responsive or commuter services. Demand-responsive services are characterized as being unscheduled, such as exclusive-ride taxi and dial-a-ride services. Exclusive-ride taxi service refers to that service where the passenger has exclusive use of the vehicle. Dial-a-ride includes shared-ride taxi and demand-responsive bus services where a shared vehicle provides door-to-door service on demand to a number of passengers with different origins and destinations. Commuter paratransit are those forms of paratransit such as carpools and subscription buses that follow a fixed time schedule but a variable route. These services are referred to as commuter (or ridesharing) paratransit services, because they are primarily used for commuter or work trips. Transit and paratransit services are discussed in more detail elsewhere (8).

Dial-a-ride has been utilized by urban transit systems primarily as a feeder service or as a substitute for costly fixed-route, scheduled transit service. It has also been employed in urban areas to transport the elderly and handicapped. As a feeder service for transit systems, dial-a-ride has been utilized as a collector or distributor of passengers to and from the fixed routes of transit systems. Rural public transportation systems often provide only dial-a-ride service.

Dial-a-ride paratransit represents the most plausible alternative to fixed-route transit service for providing intercity bus feeder service. Commuter paratransit services would probably not be a workable alternative, because they follow a fixed time schedule and are generally used for frequent trips.

Dial-a-ride service may be classified as many-to-many service, many-to-one cycled service, or many-to-one subscription service. Many-to-many dial-a-ride service is one for which point-to-point service is provided anywhere within a service area. It is not ideally suited as a feeder service to a fixed-route transportation system or as an intercity bus feeder service because it attempts to satisfy diverse travel desires.

In many-to-one dial-a-ride service, passengers are picked up at their door as with many-to-many

service, but all passengers are taken to a common destination (and vice versa), which may be a transfer point to fixed-route transportation service. In many-to-one cycled service, vehicles are scheduled to arrive at or leave the destination (or transfer) point at regular intervals. Vehicles are routed through the service area to drop off and pick up passengers and then return to the transfer point in time for the next scheduled cycle. Because cycle lengths can be set equal to the fixed-route's headway, many-to-one cycled service is ideally suited to be a feeder service.

Many-to-one subscription service is a more restrictive service than many-to-one cycled service in that it restricts the time of service by requiring all passengers to reserve service on a standing basis. Because subscription service implies regular ridership, a fixed (or regular) dial-a-ride route could be devised. Given that subscription service implies regular ridership, it has most frequently been utilized for work trips and thus is not ideally suited for use as an intercity bus feeder service for infrequent intercity passengers.

If a many-to-one cycled dial-a-ride service is already in place where the common destination point coincides with a transfer point to intercity bus service, and if unused vehicle capacity exists, little or no burden would be placed on the public transportation system to provide feeder service to the intercity bus stop. However, there would probably be an additional benefit to current riders as well as the intercity bus feeder riders in that their waiting and travel times to the common destination (or feeder) point would probably decrease (i.e., there would be an improvement in the quality of service). This follows, because with an increase in ridership, the origin pickup points for a given dial-a-ride vehicle are likely to be closer together. Hence, there will be less time in waiting for a vehicle and less travel time involved in reaching the common destination (or transfer point).

If the intercity bus feeder demand exceeds capacity and if additional capacity (i.e., vehicles) is added to the system, a similar improvement in the quality of service would occur. If the public transportation management does not increase capacity, the quality of service may or may not deteriorate. Specifically, as stated in the foregoing, there will be an expected improvement in quality of service from the increase in ridership. However, with demand exceeding capacity, congestion will arise in terms of longer waits for an available vehicle seat. Hence, if the negative impact of congestion on the quality of service outweighs the improvement in quality of service from greater ridership, service will deteriorate; otherwise, it will improve.

Suppose the many-to-one cycled dial-a-ride service that is already in place has a common destination point that does not coincide with the intercity bus transfer point. Further suppose that the public transportation system considers making this intercity bus transfer point a common destination point as well. If so, even with the increase in ridership (from intercity bus transfers), the dial-a-ride service will probably deteriorate (assuming that no additional vehicle capacity is added), because two common destination points have to be satisfied. Alternatively, this deterioration in service may be averted if sufficient vehicle capacity is added.

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## Intercity Bus Passenger Profile

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### ABSTRACT

The Bus Regulatory Reform Act of 1982 required the Motor Carrier Ratemaking Study Commission to assess the impact of the act on persons over the age of 60, particularly those living in rural areas and small towns. As part of that assessment, national and state surveys of bus passengers were reviewed to determine the age distribution, income, trip purpose, availability of a driver's license, availability of an automobile or truck, and means of access transportation of intercity bus passengers. The largest percentage of intercity bus passengers are young, and the next largest user group is the elderly. Most trips are taken for social or recreational reasons, including visiting family and friends and sightseeing. Bus passengers as a group have much lower median household incomes than those traveling on other modes, although the income distribution of bus passengers varies from state to state. Approximately two-thirds of all bus passengers have a driver's license, and a majority of them have a vehicle available in the household. Yet that vehicle was not available to the passenger for that trip between 47.5 and 70 percent of the time, according to three state surveys. The evidence presented indicates that although a majority of bus passengers had no private alternative for that trip, intercity bus service has only a minor role in meeting the most essential mobility needs.

As a part of the Bus Regulatory Reform Act of 1982 [P.L. 97-261, 96 Stat. 1104 (49 U.S.C.A. 10922)] Congress directed the Motor Carrier Ratemaking Study Commission to determine the impact of the act on persons over the age of 60, particularly those living in small cities and rural areas, and to assess its effect on the quality of intrastate bus services.

An important first step in the task of the study

commission was to examine the current literature regarding the characteristics of bus passengers. In particular, the age distribution of the bus-riding population, the purposes for which they use bus transportation, and any significant differences between interstate and intrastate bus riders had to be known to provide a basis for any assessment of the impact of changes in service.