Regulatory Barriers to Innovation and the Knoxville Experience

Frank W. Davis, Jr., Transportation Center, University of Tennessee

The urban transportation problem has been well documented: Approximately 60 percent of the people congest the highways with too many cars, especially during the commuter peak, and approximately 40 percent of the people are dependent on someone else for all their travel needs (1). At first, it was thought that the problem could be resolved through scientific management, better financing of existing systems, and the introduction of new aerospace technology. That was an expensive education. Now attention is being redirected toward some of the institutional and structural issues that impede the development of public transportation.

Regulatory policy and procedures are developed in reaction to urgent public needs. Unfortunately, existing public policy does not change until strong public needs overwhelm the old policies and demand new ones. This is especially true when the regulatory agencies perceive their responsibility as being primarily judicial with little interest in planning and leadership for directing change. Thus, the most important aspect of changing regulatory policy is an understanding of the original purpose of regulation and subsequent societal changes that require new regulatory approaches.

Unfortunately, it is often forgotten that regulation of urban passenger transportation is part of the national transportation policy and should not be considered independently of the national regulatory philosophy on which it is based ("policy" is used here to refer to all government actions, including legislation, funding, regulation, and promotion, that affect transportation). In addition, there are trends developing in the general field of transportation, and urban policy must be evaluated in the light of these overall trends. This paper will make several points:

1. Urban transportation, like intercity passenger and freight transportation, is shifting continually to services that are more flexible and labor intensive and that use small vehicles. It is shifting away from the complicated, capital-intensive transportation networks. This trend began in the early 1900s.
2. Existing transportation regulation was designed to protect those who are dependent on public transportation with little regard for fuel and highway efficiency.
3. Transportation regulatory commissions have no power or authority other than that of prohibiting the operation of for-hire carriage that is not consistent with the desires of the regulatory agency.
4. Regulatory agencies today are virtually powerless to ensure passenger service to the public, and they are reluctant to allow experimental demonstrations for fear the public will be left without even the current minimal service after the funding for the demonstration is terminated.
5. Regulatory authorities are bound by very specific laws. Thus, regulatory exemptions must come from the state legislature rather than from the regulatory bodies themselves.
6. Perhaps the most restrictive regulatory bodies currently in existence are the regional transportation authorities, which may have very broad regulatory powers as well as operational authority.

TREND TOWARD SPECIALIZATION OF PUBLIC TRANSPORTATION

The evolution of simpler, more specialized forms of transportation can be emphasized by separating their development into three separate but overlapping stages.

Stage 1

The formation of stage 1 transportation and the public policy that supported and promoted it began during the 1860s and was fully developed by 1920. The emphasis was on promoting the construction of fixed rights-of-way by private transportation companies. These firms purchased and operated their own equipment over their own exclusive rights-of-way as common carriers on a for-hire basis. Subways, cable cars, trolleys, and rail systems developed during this stage. Government regulations were developed to ensure that a common level of service was provided to all people and that no person, place, or type of travel was unfairly discriminated against by the transportation company, which in most cases operated as a monopoly (2;3, pp. 197-207).

By 1920 these public transportation systems were having serious financial difficulties. The causes seemed to stem from several factors, including overzealous regulation by public regulatory bodies; inflexible rights-of-way that prohibited carriers from adapting to changing industry, trade, and commuting patterns; and the development of the more flexible personalized service made possible by the private automobile, bus, jitney, and truck (3, chapters 11 and 12; 4; 5). The inadequacies of the rail system during World War I and the subsequent federal takeover shifted the regulatory emphasis from protecting the shipper to protecting the carriers' ability to continue service, i.e., to keep the carriers financially viable.

Stage 2

The second stage of transportation policy began with the Federal Highway Act of 1916, which emphasized the construction of public rights-of-way. Individuals and private companies were able to purchase and operate their own private vehicles on the public rights-of-way. People were thus able to use their own vehicles to meet their individualized needs and were no longer forced to accept the limited service options available from existing public transportation networks.

Although this approach to providing transportation was popularly supported, it took 25 years to develop legislation that would resolve two basic policy dilemmas: How could the stage 2 approach provide for individuals who

were not physically, economically, or emotionally able to purchase and operate their own vehicles? How could the stage 2 approach be encouraged without endangering the economic viability of existing systems with fixed rights-of-way?

One of the most difficult problems facing stage 2 policy makers was that only rail systems (subways, trolley cars, and interstate railroads) were viewed as real transportation. The many small and frequently marginal operators of trucks, buses, taxis, and jitneys were viewed as nonprofessional fly-by-night operators who were merely skimming the cream from the legitimate rail networks. Many were convinced that trucks, buses, and taxis would never become a significant part of public transportation since they were uncoordinated and primarily provided limited, specialized services. The rail networks, on the other hand, were thought to be the only form of transportation that would ever provide dependable service to all people and virtually all of the nation's passengers and freight.

Stage 2 policy was established by the development of an elaborate regulatory process designed to solve these problems that was perhaps best stated in the Transportation Act of 1940. Although this act applied only to interstate rail, motor, water, and pipeline transportation, the concept was used in numerous state and local ordinances to regulate intrastate and urban transportation systems. This process preserved a workable for-hire common-carrier system by granting exclusive franchises to private companies that were willing to provide service on low-ridership routes in return for protection from competition on profitable routes. Thus, nonfranchised individuals were prohibited from providing for-hire service, even though they might provide better service at a lower cost. It was argued that the revenue from profitable routes was needed to support the legitimate franchised carrier who would be weakened by this cream skimming of ridership and profit (6).

The second dilemma was solved by bringing all modes of transportation under regulatory control. Rate levels could be regulated to protect the inherent advantage of each mode. It was reasoned that the public would abandon the modes that provided the least specialized service unless there was sufficient difference in the rate level.

Stage 2 transportation policy was successful in promoting the growth of flexible, personalized transportation financed and operated with private funds. Lifestyles, residential patterns, and work locations changed as a result of the personalized mobility provided by the automobile. Meanwhile, public transportation declined until only 3 percent of all trips by ground transportation were made by public transportation.

Stage 3

Although public policy did not change substantially until 1958, when the abandonment of rail passenger service was made easier, the public continually sought new specialized forms of transportation. Private firms bought trucks, and private carriage flourished. Churches, clubs, commuter groups, police departments, and social service agencies bought buses, vans, and station wagons to haul clients, senior citizens, parishioners, underprivileged groups, club groups, police auxiliaries, and group tours. Hotels, motels, and convention centers bought vehicles to haul customers from airports to their businesses. Gypsy taxis and jitney services developed where the regulatory law did not prohibit them. Private school bus operators hauled as much charter service as enforcement would allow. While these new stage 3 services developed, the traditional stage 1 and 2 services continued to decline.

There was no crisis to precipitate any change in regulatory policy until the 1970s. The specialized services were being developed by groups or agencies that were generally exempt from regulation, and there were no pressing national issues. Urban pressures for change were abated by turning regulatory responsibility over to local, well-funded transportation authorities. In the early 1970s six trends began to evolve.

1. Concerns about the environment and public hearings stalled much of the new highway construction necessary to handle the growing travel demand.
2. The Organization of Petroleum Exporting Countries' oil embargo and the subsequent trade deficits caused by crude oil prices became a major political issue. This drained capital that could have been used to create new domestic employment opportunities.
3. Automobile travel costs increased because of increases in the costs of insurance, fuel, safety and environmental equipment, and parts and because of general economic conditions.
4. Population decentralization continued from city to suburb and from suburb to rural communities.
5. Gasoline prices increased by nearly 100 percent.
6. The appropriations for transit subsidies (including operating subsidies) amounted to $11.8 billion.

These trends indicate that

1. National policy must focus on improving the management of existing facilities, i.e., increasing vehicle throughput on existing highways or increasing vehicle occupancy rather than continuing to build new highways and vehicles to keep pace with the growth in travel demand;
2. Stage 1 and 2 systems will not significantly increase their market share of trips even with large increases in fuel prices and substantial increases in capital grants or operating subsidies;
3. Traditional systems cannot effectively operate in rural or suburban areas in which trip densities are low and widely dispersed; and
4. Traditional systems are not very easily adapted for use by the elderly and handicapped without costly modifications.

Funding has been expanded to include many alternatives, i.e., 64 social service programs, section 16b2 programs for nonprofit agencies, rural transportation programs, car pooling, van pooling, paratransit systems, dial-a-ride systems, and many more programs for which cash and equipment were provided to start services. In essence, specialized stage 3 services are developing rapidly in the public and private sectors but, before these services can reach their full potential, the stage 2 policy that was formulated before 1940 must be modified to permit legal operation.

THE REGULATORY DILEMMA

The funding of these many new programs presents a monumental impasse for the traditional regulatory agencies. The current regulatory philosophy was largely set between 1935 and 1940, when demand for transportation was high and there was a large group of willing suppliers. The major goal was to ensure that an adequate, safe level of public transportation was provided to those dependent on it. This was accomplished in several ways:

1. The for-hire carrier was held to the historic common-carrier level of responsibility, which required the carrier to exercise the highest degree of care and

against which there was virtually no legal defense for liability.

2. The carrier was required to obtain approval from the regulatory agency on all routes, schedules, and fare charges to ensure that an adequate level of service was continued.

3. In return for these obligations, the carrier was given a franchise to operate and rates were set to yield a fair return on investment.

If the carrier was unwilling to provide service under these conditions, the regulatory body historically has been able to revoke the franchise and find another carrier that was fit, willing, and able to begin providing the services.

After World War II and especially after 1955, conditions changed. Ridership declined rapidly. Passenger carriers of all types—rail, bus, and transit—went out of business. Fares increased, service decreased, routes were abandoned, and emphasis shifted to charter and package express.

The regulatory authorities do not have the power to initiate or promote services. Their only power is the authority to grant a franchise or deny a company operating rights unless operation is consistent with the requirements of the regulatory body. The Georgia Public Service Commission, for example, was adamant that Trailways Bus System should continue to provide several commuter runs into Atlanta as a condition for retaining their certificate to operate in Georgia. Consequently, in November 1975, four Trailways affiliates surrendered all intrastate operating authority rather than incur the large losses associated with the required commuter service.

Unless the commission can find other willing carriers, the citizens of Georgia will be denied not only the commuter service but also the intrastate service of four carriers. Recognizing that the commission does not have the funding resources to start or promote unprofitable service, the regulatory agencies are usually very careful to protect the revenues of the existing carriers since only a financially strong carrier can be required to maintain service under the threat of franchise loss.

This problem is further compounded by the lack of control the regulatory agencies have over major cost areas, such as labor. If a company negotiates a labor contract with very restrictive work rules that prohibit carriers from serving certain groups, e.g., commuters or short-term charters, the commissions are powerless to preserve service. If public service commissions (PSCs) allow available lower cost carriers to provide selective services, then the new carriers will also want to haul charters, which might take revenue away from the existing carriers. The PSCs' power is then greatly eroded. If the PSCs do not permit the service, they strengthen their ability to continue demands that limited services be offered, although some people will then be denied services.

The PSCs are skeptical about many of the new transportation schemes. First, they are skeptical of demonstration projects that may serve the public well for 1 or 2 years, until the private operators have been adversely affected, and then are discontinued for lack of funds. Second, they are concerned that public projects, e.g., local transit authorities, will start operating, be confronted by economic reality, and then push for a part of the more profitable charter business, which would adversely affect the private carriers. Third, they are concerned that new projects will begin outside of their jurisdiction, forming a two-tier level of responsibility among carriers—the regulated carriers that have the common-carrier obligation and the unregulated government-sponsored carriers that do not.

The regulatory agencies must therefore be most concerned about protecting the carriers they regulate so that some level of service to the transit dependent can be ensured. Since they have no funding capacity, the only mechanism available is the denial of franchises to all potential competition.

The stage 3 transportation agency or firm can make a fervent appeal to the regulatory agency and win full support of the entire body. However, the agency may still not be able to receive permission to operate until the laws are changed or unless the service can be provided within the existing regulatory guidelines. The changing of laws is a very time-consuming procedure, while operating under existing regulatory guidelines can be very expensive and cumbersome. For example, the cost of insurance may increase two to five times if the carrier begins to operate legally with a certificate of convenience and necessity, instead of illegally without the appropriate certificate, because a higher degree of care is required of the regulated common carrier.

REGULATORY POWER OF LOCAL TRANSPORTATION AUTHORITIES

Reaction to the urban crisis resulted in the passage of the Urban Mass Transportation Act of 1964, which led to the formation of regional or urban transit authorities and the shift of regulatory responsibility away from the PSC to the local authorities. In many cases, the local authorities sought not only to regulate all forms of for-hire transportation but also to use the abundant federal funds to purchase all operating companies in the area and operate them as an absolute monopoly.

Many of the operating authorities became very expansionistic and wanted to provide charter service over a broad geographic area in order to reduce growing operating deficits. Conflicts arose when public authority operators had to obtain a PSC certificate to provide charter service in competition with private companies. Finally, national legislation, in the form of the Federal Highway Act and Urban Mass Transportation Act, was passed to reduce this conflict.

In general, the local transit authority has virtually unlimited authority to allow any form of innovation it desires within its geographical boundaries. Ironically, many transit authorities have become so preoccupied with the operation of the stage 1 and 2 network systems that they have ignored or even prohibited the development of newer and more specialized services. Their logic is based on the same cross-subsidization and cream-skimming logic of the PSC's stage 2 policy. Since public funds are available, the local transit authorities are reluctant to permit any form of transportation that might compete for increasingly scarce future federal funds in the face of rapidly increasing deficits. In essence, the federal funding has allowed transit authorities to become sole operators and given many of them complete regulatory authority over all competitors. They are then encouraged to enter exclusive labor agreements that prohibit the use of part-time labor and other innovations, which results in large cost increases. The major regulatory barriers to innovation are local transit authorities, the state PSCs, and the Interstate Commerce Commission.

THE KNOXVILLE EXPERIENCE

In Knoxville, Tennessee, a brokerage concept is in operation in which the role of the transit authority is to meet public needs rather than promote one type of service. This concept took a long time to develop, and it only

developed then because of the close cooperation between the Knoxville Transit Authority (KTA), several firms in the city (Tennessee Valley Authority and Levi Strauss), and the University of Tennessee.

The Tennessee Valley Authority (TVA) and Levi Strauss approached KTA with a request for special express commuter bus service at about the same time that the mayor appointed two members of the University of Tennessee's transportation faculty to KTA's board. Simultaneously, the Office of University Research of the U.S. Department of Transportation (DOT) funded a research project at the University of Tennessee to investigate commuter transportation alternatives. The stage was set for extensive experimentation. Levi Strauss offered to put up money to underwrite the experimental service, and TVA offered an in-house promoter. Since the first service was offered in the county that did not contribute to the support of the system, the KTA was adamant that all operating costs must be covered by the fare box.

The service was extremely well received even at premium fares. After the first five buses were put into service, the manager of the transit property began to express his concern over the probable rising cost of the service if additional peak-hour service was offered without compensating use during the base period. For many months KTA was faced with a proliferation of requests for additional service. Strong newspaper support indicated that at last KTA was doing something right. Knoxville's mayor was up for reelection and wanted to use the express bus service as a major campaign issue. KTA recognized that deficits were largely determined by the ratio between use in the peak hour and that during the base period. By election time, 24 months after the first bus was placed in service, 15 express buses were operating nearly at capacity, and TVA was subsidizing the ride by one-third of the fare in lieu of building a new parking garage. Only then did KTA acknowledge that (a) there was a strong demand for many different types of public transport and (b) a very efficient stage 2 transit system could work well in many areas but was neither cost-efficient nor effective for a wide variety of special public transportation needs. KTA then encouraged the city to solicit private carriers to handle further expansion of express routes. Two carriers were located.

At the same time it was developing the express bus service, TVA started six experimental van pools. The city of Knoxville now has a service and methods demonstration grant from the Urban Mass Transportation Administration to promote and encourage the development of van pools, car pools, social service coordination, and many other new types of service. The city has hired a special assistant to the mayor to handle the coordinating and promotion of existing and new forms of public transportation. Before this could happen, however, it was necessary to convert KTA and the city to a multimodal, multiowner transportation concept. KTA and the city provided the mechanism, TVA and Levi Strauss provided the experimental site, and funding from DOT through the University of Tennessee provided the research and data necessary to evaluate the project. Without this unique blend of circumstances, innovation would have been difficult.

In the fall of 1975, the city of Knoxville asked the PSC for permission to operate the van-pool portion of the service and methods demonstration. The PSC commissioners indicated they would favorably consider an application for a certificate, but contact with insurance companies indicated that premiums for a certificated carrier would be nearly $1500 (a noncertificated carrier paid only $582). This $10/month/rider difference meant that van pooling was not possible under certification.

The PSC was petitioned for a waiver. Although it was very sympathetic and fully aware of the virtual nonexistence of for-hire carriers in most areas of Tennessee, it indicated that its hands were tied and that the only way an exemption could be made was by court decision or a change in the law. A court decision would take at least 6 to 7 months, even on an emergency basis. It took 4 months to get the law passed. The Tennessee law exempted vehicles for 15 or fewer passengers that haul commuters from all regulations except those dealing with insurance and safety. The requirement to file a certificate of insurance, which indicates that one has insurance, presented no problem. If the PSC required a "filing of insurance," this could be interpreted as evidence of intent to become a common carrier; insurance costs could then become prohibitive and nullify most legal defenses against potential claims. This is especially true for the many private van-pool operators, who would be put out of business if a "filing of insurance" were required.

Since the commuter van program started, numerous social service agencies have requested the use of the vans during the day. Unfortunately, insurance classifications are for a single purpose only, i.e., private passenger use, common-carrier service, taxicab, or school bus. Therefore, if the vans were used for multiple purposes, they would be classified as taxicabs, common carriers, or rental vehicles, and the insurance costs would be prohibitive. For example, if the city permitted a day-care center to use a van to transport 10 children to a day-care center each morning, it would have to get common-carrier insurance. If the day-care center got section 16b2 funds to buy an identical vehicle and used the same driver to transport the same 10 children over the same routes at the same time, it could get school bus insurance at $200 to $275/year.

The express bus service was started in fall 1973 and in July 1976 carried 23 789 passengers. The private carriers began operating in the winter of 1975 and in July 1976 hauled 11 924 passengers. The van-pool program became legal on March 22, 1976, and within 5 months 57 vans were in operation (26 leased city vans, 24 TVA employee vans, and 7 identified private vans) hauling 23 940 passengers/month. This is in an employment area of approximately 100 000 people in which traditional fixed-route transit carried a total of 289 581 passengers in July 1976. There are approximately 12 000 employees in the central business district. TVA, the largest downtown employer, has shifted its modal split from 68 percent single-occupancy automobiles in 1972 to 18 percent in the summer of 1976. The number of vehicle-kilometers traveled by commuters has decreased by approximately 50 percent.

The traditional transit service covers less than 50 percent of its operating costs from the fare box. The express bus service covers almost all its operating costs from the fare box; TVA subsidizes one-third of the cost to its employees. The vans cover their full operating costs as well as replacement cost and all taxes; only the administrative costs are subsidized. The city and KTA are beginning to feel that their primary role is to determine needs, locate potential suppliers, eliminate institutional barriers, and promote all forms of public transportation.

SUMMARY

There is no regulatory law that is inherently bad in and of itself. There was a reason for each policy and piece of legislation. When they are viewed in light of societal changes and the interrelationship with other laws, however, it is difficult to see how any change or progress is

possible in a highly regulated society. Perhaps one of the major purposes of large federal grants is to fund the research and experimentation necessary to initiate change at all levels of the highly regulated system. Government is well equipped to regulate and control society and business if only society can develop methods to keep regulation in tune with evolving public needs.

REFERENCES

1. Census of Population: 1970. Bureau of the Census, U.S. Department of Commerce, 1970.
2. D. F. Pegrun. Transportation: Economics and Public Policy. Richard D. Irwin, Inc., Homewood, Ill., 1968, pp. 287-311.
3. P. D. Locklin. Economics of Transportation. Richard D. Irwin, Inc., Homewood, Ill., 1966.
4. Special Study Group on Transportation Policies in the United States of the Senate Committee on Interstate and Foreign Commerce. National Transportation Policy. Government Printing Office, Washington, D.C., Senate Rept. 445, Part 7, 1961, 732 pp.
5. G. M. Smerk. Readings in Urban Transportation. Indiana Univ. Press, Bloomington, 1972, p. 8.
6. F. W. Davis, Jr., and others. Increased Transportation Efficiency Through Ride Sharing: The Brokerage Approach. Univ. of Tennessee Transportation Center, Knoxville, 1976.

The Role of Public Utility Commissions in Transit Regulation

Delmer Ison, Washington Metropolitan Area Transit Authority, Washington, D.C.

In order to provide some perspective on my views about transit regulation, I would like to briefly review my urban transportation background. For the last 25 years I have been involved in urban transportation in one way or another. For 15 years I was actively involved in the regulation of urban transit. Since 1973, I have been engaged in the operation of urban transit. As a result of my experience, I have some very strong views on the subject at hand. Before preparing this paper, I discussed the subject with some key industry officials and representatives of key organizations, including the organization to which the public utility commissions belong. I believe that the views expressed here represent by far the majority view.

In 1951, when I first became involved in the regulation of urban transportation, transit companies were thriving on relatively low fares. One of the major responsibilities of the regulatory commissions in fact was to prevent the transit operator from making too much money. Today, 25 years later, urban transit can exist as a part of the public sector only with relatively high fares and substantial public subsidies. In terms of productivity, there are few industries in the nation that suffered a greater decline in the last 25 years than urban transit.

The causes for this decline have been the subject of a great deal of debate. Some people argue that the decline was caused by uninspired regulatory practices of the public utility commissions (PUCs). Although I have not always agreed with the regulatory practices of some of the PUCs, I do not believe that their practices have been the major cause of the decline. And, since the ills of the urban transit industry during the last 25 years have been uniformly felt by the entire industry, blaming the regulators would require contending that the practices of almost every regulatory body were uninspired.

Throughout the declining years of the transit industry, the regulatory officials were frequently criticized by the transit industry with respect to regulatory policies, particularly policies concerning fare increases. To overcome some of this criticism, one of my favorite suggestions was that we should have experimented with a single transit operator by giving him or her complete freedom as to the level of fares to be charged but impose service requirements that would ensure reasonable and adequate service to the public. Under this experiment the transit operator would have had a fair chance to compete with the private automobile and to demonstrate his or her ability to survive in a real competitive situation. With the benefit of hindsight, I question whether the experiment would have proved anything of lasting value.

I am sure that numerous other suggestions for different approaches could be advanced. But I question now whether any regulatory practices, no matter how enlightened or inspired, could have prevented the demise of the urban transit industry in many small cities and the serious decline in the larger cities.

What is the proper role of PUCs with respect to urban transit in 1976? I believe the critical concern deals with the public sector of urban transit, primarily with the transit authorities that serve the larger cities. I believe that there is no longer a significant role for PUCs in the day-to-day operations of these public transit authorities. PUCs must continue to exercise controls over the right of entry into the business and the right of exit. This is not to say that the operations of transit authorities should not be regulated. To the contrary, it is absolutely essential, in this era of high subsidies, that transit authorities be subjected to very specific controls in the form of service goals, service standards, and performance standards. The question is who should exercise these controls, how, and why. Let us first examine why.