

specifications and problems. They can provide solutions within a limited range. The post supporting the lift, for example, may be a hazard in the bus interior. The specifications should not require removal of the posts but rather require adequate protective padding.

#### IMPROVEMENTS IN VEHICLE LIFE EXPECTANCY

Vehicles should be purchased with proper engine-drive-train combination to fit the operating mode of the bus. From day one, a uniform preventive maintenance program should be implemented and used. Vehicles should be stored inside, especially in cold climates. Cleaning should be regularly scheduled. The vehicle operating distances should be spread evenly across the fleet. At

193 000 to 241 000 km (120 000 to 150 000 miles), major rehabilitation should be considered in lieu of the purchase of a new bus. Rehabilitation must include engine, drive train, and brake systems.

Productive service runs should be maintained; buses that make empty runs should be eliminated or reduced. This will translate into longer life expectancy.

Good driving habits tend to erode the longer the individual is on the job. Pressure to hurry up from dispatchers and to make schedules also force unsafe operations. Jackrabbit starts and stops increase wear and tear on transmissions, tires, and brakes. Management observation and periodic retraining will keep this situation under control, lead to less down time, and increase the life of the vehicle.

## Taxis and Subsidized Programs in Rural Areas

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The taxi industry in rural communities is undergoing scrutiny, especially as it relates to the transportation of special groups within a community—the elderly, handicapped, and others who do not have access to automobiles or to public transit. A major concern of the taxi operators is the survival of small taxi operations of 10 vehicles or fewer in communities with populations of 25 000 or less. This paper describes ongoing small-taxi programs in Lancaster County, Pennsylvania; Houston, Texas; and Indianapolis, Indiana. Possible solutions to the problems of the taxi operator in rural areas, such as direct subsidies, mergers with a centrally located operation, and support through social service agency transportation contracts are examined.

A number of positive actions have been taken to develop an expanding rural public passenger transportation system. There are decisions, however, that must be made to determine the future of rural public passenger transportation.

The bus industry has cited its service to some 15 000 communities, the vast majority of which have populations of 5000 or less. Intracity fixed-route bus service does not provide door-to-door service. Therefore, within each one of those communities the link between the bus stop and the ultimate destination must be provided by either public transportation or the private automobile. At present, most of these communities are served by an informal arrangement of small taxi companies or individual taxi operators. Some effort has been made by county authorities to develop a network of public transportation organizations within the rural communities. Decisions will have to be made about the feasibility of working through existing service arrangements or generating new ones.

Another major concern is whether or not a vast network of government-controlled (if not government-owned) transportation facilities should be developed in the rural communities. Except for studies by Gorman Gilbert and several others, no substantial base exists on which to judge whether or not the current needs of the community are being met.

The taxi industry in rural communities has only one

advantage at the present time. It is an in-place service and one that has survived the economic reversals of the past 5 years. Therefore, it is assumed that, given an opportunity to compete in a free market, it will continue to survive in its existing form. However, if certain segments of the service are removed from the marketplace, the inefficiencies introduced will destroy the taxi operations. For example, if a 9:00 a.m. to 5:00 p.m. dial-a-ride service is established that absorbs the bulk of the daily business, then taxicabs will be expected to provide the off-hour service.

A suggested method of dealing with the problem of transportation in rural America was contained in a report issued by the U.S. Senate Committee on Agriculture and Forestry (1). The report used the term "jitneys" to describe what most transportation officials consider as paratransit services. The word "jitneys" is often misused because of its original concept. Before the advent of mobile-radio communications, jitneys concentrated in the areas of major passenger traffic generation and did in fact gain the passengers who would normally take fixed-route vehicles. From today's perspective, we are looking at radio-equipped vehicles that would use route deviations and give door-to-door service. This is a level of service above the fixed-bus route but a step below a shared-ride taxi.

The study noted that individual entrepreneurs in rural areas and especially the smaller cities could be given incentives to establish a jitney-type service. These incentives might include the repeal of antijitney laws in localities where taxi and bus service are deemed inadequate or nonexistent; technical and legal assistance for startup; lower license fees; and cooperative purchase of insurance.

Some of the conclusions contained in *Taxi User Characteristics in Small and Medium Size Cities* (2) indicate what is actually happening in small communities:

1. Given the nonexistent or inadequate transit service in many small cities, the large proportion of taxi

users indicates that many of them are also taxi-dependent.

2. Use of taxis is largely for trips for which no alternative travel mode is available or feasible.

3. Taxi users in the early part of a month were found to be older, poorer, or more likely to use taxis for nonessential trips. This conclusion suggests that taxi-dependent persons ration their use of this transportation mode later in the month.

4. Taxi use and operations clearly differ in large and small cities. For example, in small cities taxis are more available and operators have fewer market restrictions placed on them.

5. Few taxi users (about 20 percent) in cities where transit is available ever use transit.

#### SMALL TAXI OPERATIONS

In the past 2 years, the major concern of the taxi industry has been the survival of small taxi operations (10 vehicles or less) in communities with populations of under 25 000. Evidence to date, based on conditions in the industry, indicates a failure rate of about 12 percent per year in this category.

Changing economic conditions, beginning with the energy crisis of 1973, have had a severe financial impact on small taxi operations in communities of 25 000 persons or less. In small taxi operations—where the margin of profit was minimal—the hours of work for the owners were long, they were unable to increase productivity, and operators were forced to seek rate increases. The spiraling prices of fuel, parts, automobiles, and operating costs created an unstable condition.

The taxicab operator in a small community very often is the owner of another business. It may be a service station or a general store that provides taxi service to the community on a demand basis. Dispatching occurs from the other business, and drivers may be retirees within the community available by a telephone call. Sufficient demand does not exist to maintain a full-time service. In the past, such an arrangement provided additional revenue for the operator's main business and employment for individuals who were not seeking a full-time work schedule. When costs outstripped revenues, many small operations simply ceased business. Records of the International Taxicab Association show that 60 percent of the more than 1000 operations that ceased between the years 1974 and 1976 consisted of 10 vehicles or less. It is difficult to determine whether services have been replaced in these communities, or whether a lower level of service has been generated by independent drivers. However, from past experience in collecting information about new company formations, it appears that there have been relatively few entries into the taxi industry in these communities in the past several years.

In view of the declining number of operations by taxi companies, is the system still of significant size to be retained as a segment of rural transportation? Taxi operations in nonurbanized areas and in rural communities must be cost efficient if they are to remain in business. It appears, therefore, that some coordination effort must occur to maintain taxi service. A number of programs are under way and offer opportunities to provide a viable rural transportation system.

Cross subsidization of taxi services and agencies purchasing services for the elderly and handicapped is a possibility. The best method of achieving this goal is a user-side subsidy controlled and directed by the funding agency. The Danville, Illinois, program is well known to transportation providers (3). Taxis would continue to operate in their present modes using either exclusive-ride or shared-ride services to the general public.

An often misunderstood and widely controversial concept has been developed by the U.S. Department of Transportation proclaiming that exclusive-ride taxis are not paratransit and therefore are ineligible for participation in funding programs. However, to date, there have been no funding grants or shared-ride taxicab programs except for the demonstration projects. The fallacy is that exclusive-ride taxis can function in a dual mode, providing services demanded by the customer at two levels of fare that would partly subsidize contractual arrangements with agencies.

The taxi industry as a private provider of services recognizes that the only incentive a public agency has to contract with a taxi company is the sufficient service the taxi operator provides to meet the comfort and convenience demands of the passenger. Also, the service is cost-effective to the agency.

#### CURRENT PROJECTS

Several projects that are currently under way provide possibilities for social service agencies and government funding agencies to consider.

Lancaster County, Pennsylvania, has established a nonprofit corporation to coordinate all transportation on a countywide level. The Lancaster Integrated Specialized Transportation System (LISTS) is the result of a study conducted in 1976 by the county planning commission. The program calls for the utilization of taxis and buses to provide services to the elderly and handicapped. The objective was to coordinate and integrate all transportation from the member agencies to the member carriers in a cost-effective manner.

The cost, client eligibility, and the mode of transportation are determined by the agency. The taxi company uses a system of comparing metered rates and flat rate per one-way trip. The variance between the metered rates and the flat-rate trip are analyzed monthly. The flat rate provided for shared rides, thus resulting in greater use of the vehicle. The flat rate per one-way trip was established at \$1.10. Based on the two methods of calculation each month, the lower total is the actual billing to the agency. The agency determines eligibility by an interview with the client. The number of trips is determined on need in relation to the priorities established. The order of priorities are medical transportation to or from any medical facility, or for prescription drugs; social service appointments such as transportation to or from an appointment at a clinic or therapeutic facility; transportation to or from food stores; other, or special, transportation to or from any location as determined by the agency. The mode of transportation is selected by the agency. Clients physically and mentally able to use public bus systems are provided with bus tickets. Those unable to use buses or with conflicting schedules are eligible for taxi tickets. The tickets are issued for a 6-month period and, at the end of the 6 months, the client is called in for an interview to determine if transportation service is adequate.

Four types of services were developed:

1. Local rural transportation to or from any destination within a small town, village, or urban area not requiring bus service;
2. Transportation to or from community action centers or the Office of the Aging multipurpose centers and usually furnished to groups requiring a 9- to 15-passenger vehicle;
3. Bus-feeder service to or from selected bus stops when a client is normally unable to use the bus due to living beyond walking distance (this service transports rural clients to bus terminal points in smaller towns); and



4. Direct-line transportation to or from smaller towns, villages, and rural areas direct to city and urban areas (transportation is furnished to clients who are physically or mentally handicapped and cannot use public buses; transportation is scheduled at set times that the clients are requested to use so as to decrease the possibilities of transporting them on an exclusive-ride basis).

The program is presently working in two sectors of the county and cost figures are 57 percent lower per one-way trip than prior services. Complaints number 2-3/1000 client-trips, and approximately 80 percent of the complaints are due to the fact that clients do not understand the system.

In 1977, the Houston Yellow Cab Company was awarded a major contract to provide transportation for Title XIX welfare recipients to and from medical providers. The contract was formerly operated by social service agencies and represented a significant departure from previous policies in Texas.

The service area includes ten counties surrounding Houston. Services are available from 8:00 a.m. to 5:00 p.m., Monday through Friday, in Harris County (in which Houston is located) and is available 3 days a week in outlying counties. Harris County accounts for over 2000 trips per month. All trips are routed and assigned to special drivers. Plans are prescheduled and serviced by designated vans.

A program, developed independently of government agencies, has been started by Richard Hunt, president of Yellow Cab of Indianapolis, Indiana. Hunt, recognizing the need for special services for elderly and handicapped, applied for and received a certificate of public convenience and necessity to operate motor vehicles as interstate common carriers. Hunt investigated the need for special service and received support from representatives of the elderly and handicapped groups in the metropolitan Indianapolis area. He became aware of the necessity to provide service in several counties and is expanding his fleet to eventually have 15 vans equipped with hydraulic wheelchair lifts and with a capacity of ten passengers, including two wheelchair passengers, plus the driver. Hunt stated that his intention was to provide an outreach program into the county for individuals who have limited transportation opportunities. Special contractual arrangements are being made with several agencies.

## CONCLUSIONS

There appears to be considerable opportunity for using taxis in rural communities. This is true provided the taxi company is of sufficient size and resources to undertake a very complex system of planning, participation, negotiation and contractual arrangements and to purchase specialized equipment. Because the small taxi companies that are operating in rural communities do not have this capacity, they must receive special consideration if they are to be an important part of the rural transportation program.

The majority of the small taxi operators lack the sophistication to engage in prolonged contract negotiations and to discuss the various options available under government programs. They need a simple, straightforward approach and would most likely be receptive to a user-side subsidy. The small company is usually unable to develop and maintain complex accounting and statistical

records both in terms of available labor and costs.

It would appear that the agencies desiring to render transportation services in rural communities have an opportunity to establish the performance standards they desire in passenger transportation and the levels of service that must be maintained. Simple guidelines issued to the private providers of service outlining their responsibilities, obligations, and benefits can encourage taxi participation within the transportation network. Undue complications, prolonged negotiations, and delays in implementing programs will result in the inability of small taxi companies to participate.

The ability of the taxi industry to deliver transportation to social service agencies is well established in many major cities. Programs involving taxicab operations are in place in Houston, Texas; Oklahoma City, Oklahoma; Danville, Illinois; Montgomery, Alabama; Akron, Ohio; Wilmington, Delaware; Cleveland, Ohio; Rochester, New York; Westport, Connecticut; Ann Arbor, Michigan; and 15 California cities. Most of the programs have been restricted to the cities because the sources of funds have been local or demonstration projects. In some cases, several taxi companies are participating in the projects.

The report, Social Service Agency Transportation Services (4), supports the taxi industry's position that it can deliver transportation services at less cost than most social service agencies. Current industry statistics report the operating cost of a taxi at 29 cents/km (43.5 cents/mile). Total costs, including overhead and general and administrative expenses, are estimated at 40 cents/km (60 cents/mile) on a national average. The cost per kilometer is the most realistic approach to delivering service to rural areas. There simply is not a sufficient data base on which to establish an hourly rate per vehicle. If the costs are attractive to social service agencies, then it is appropriate to contact small taxi operators.

The taxi association is concerned about taxi operations in rural communities. Support of these operations through social service transportation contracts may well be the key to their survival. The alternative is probably direct subsidies, or mergers of small companies with a viable operation concentrated in one central community and delivering limited services to perimeter communities.

At this time, it is too early to judge the impact of rural transportation programs on taxis. It is the industry's hope that participation in government programs will protect this valuable transportation resource in our small communities.

## REFERENCES

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