Operation Issues for Paratransit: Productivity, Vehicles, Dispatching, Management

Workshop 5 Report
James E. Reading, Denver Regional Transportation District

Objectives
Examine existing and new ways of more efficiently providing paratransit services, particularly how complementary services can be combined and coordinated to improve the overall levels of service and productivity.

Discuss important labor and strategy issues and their impact on the costs of paratransit, vehicle requirements, vehicle maintenance, control and dispatch, management structure, and marketing and promotion.

Examine operational issues from the viewpoint of both public and private providers.

Identify differences between operating transit and paratransit services.

Participants

Workshop 5 moved slowly into a simple outline that included 3 major points:

1. Costs;
2. Financial considerations, including (a) cost reductions, (b) increased productivity, and (c) social benefits; and
3. Problem resolution.

This simple outline quickly became the focal point for an expanded outline based on what the workshop considered the 2 major areas for further amplification and consideration: cost reductions (vehicles, labor, and organizational structure) and increased productivity. It was determined that vehicle design would be left to the current efforts of UMTA and the American Public Transit Association (APTA) for buses and the International Taxicab Association (ITA) for taxis. The consensus was that quality and economy are primary considerations, general parts availability is extremely important, and reliability is more necessary than good looks.

The following are workshop recommendations for the major issues defined.

ISSUE

There is at present no uniform method of reporting costs and operating statistics for transit and the various means of paratransit. Such a method is necessary for
comparability in order to evaluate the financial and social values of the service characteristics of each. Only then can decisions be made as to which form of transit or paratransit is best suited to provide which service. The taxi industry through ITA and the transit industry through UMTA and APTA have developed individual uniform reporting systems. Most existing paratransit operations are most likely not aware of such programs and are not currently concerned with their need.

RECOMMENDATIONS

1. UMTA and TRB should initiate a project to make the 2 programs compatible and bring about implementation as soon as possible. This project should further be extended beyond accounting and statistical reporting to include a total management information system. Recognition must be given to the additional costs, such as taxes and depreciation, of operating a private company as compared to a government entity. This project should include, but not be limited to, accounting and operating statistics, maintenance and inventory reports, personnel records, market research and analysis data, system usage and service quality statistics, and consumer information. Also considered should be computerized routing, scheduling, and dispatching where such programs can be installed on large properties or time-shared by small systems.

2. A demonstration project should be entertained by UMTA to install this program in a taxi operation. The service and methods demonstration portion can then be evaluated along with similar projects in Ann Arbor and Rochester.

ISSUE

Available information in the form of government publications and other printed material is apparently not disseminated to taxi operators and other paratransit organizations.

RECOMMENDATION

Abstracts of publications should be mailed to all known operators, and single copies of appropriate publications should be distributed to affected national associations. They, in turn, should review and comment in their general membership publications.

ISSUE

There is at present no consumer information system in communities to provide travel options and comparative costs.

RECOMMENDATION

A research, development, and demonstration project should be launched that will result in information systems that will display travel options at airline, bus, and railroad terminals and at hotels, motels, and visitor information centers.

ISSUE

The taxi industry is currently in much the same position as the transit industry was in the 1950s and early 1960s. Incentives are not available to attract young and intelligent people into most companies, nor are training programs provided to develop skilled personnel for positions peculiar to the industry and for management.
A project to develop procedural manuals and training programs should begin as soon as possible. Emphasis should initially be placed on information and control systems, maintenance practices and procedures, and management.

Every available way of reducing costs and increasing productivity should be explored. The committee suggests research be accomplished in the following areas (some of which we understand is under way) and, of course, appropriate action should follow:

1. Elimination of fuel, vehicle excise, and similar taxes on the public transit portion of private operator services;
2. Improved vehicle efficiency through use of lower cost fuels and new engine designs;
3. Standardized vehicles (and thus replacement parts) within individual operations;
4. Improved maintenance and operations staff training;
5. Improved work rules; and

In the area of labor, these suggestions are made:

1. Paratransit operations should be provided by the private sector whenever possible;
2. Incentive programs for employees related to pay structures should be used; and
3. Work rules to allow more flexibility in scheduling personnel should be improved.

Organizational structure changes should be reviewed with the possibility of providing one or more of the following: service integration, service rationalization, and service competition. The provision of new and more efficient paratransit and conventional transit services should begin with the development and evaluation of alternative systems. Goals and objectives that are regionwide should be established along with criteria and measures to evaluate the alternatives.

Specific recommendations were made by the committee regarding the improvement of productivity. Although other recommendations, particularly in the areas of management information and control systems, consumer information, employee training, and pay incentives, affect productivity, there is currently no sound method of measuring such that productivity of the various methods of transit travel can be compared. Productivity is defined generally as the ratio between input and output. A matrix (Table 1) was developed and resulted in 27 possible combinations. Such measures may be used to evaluate systems and to select modes.

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
<th>Table 1. Productivity matrix.</th>
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<tbody>
<tr>
<td>Labor hours</td>
<td>Passenger-Miles</td>
<td>Personnel use</td>
</tr>
<tr>
<td>Vehicle seat hours</td>
<td>Passenger-Trips</td>
<td>Equipment use</td>
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<tr>
<td>Vehicle miles</td>
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<tr>
<td>Vehicle seat miles</td>
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<tr>
<td>Vehicles</td>
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<tr>
<td>Passenger capacity miles</td>
<td></td>
<td>Energy use</td>
</tr>
<tr>
<td>Energy consumed</td>
<td></td>
<td>Operating efficiency</td>
</tr>
<tr>
<td>Capital cost</td>
<td></td>
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<tr>
<td>Operating cost</td>
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RECOMMENDATIONS

1. A research, development, and demonstration project should be initiated to develop a validated means of measuring the productivity of all forms of transit.
2. Federal regulations should actively encourage all levels of
government to interface with public and private agencies to optimize the use of all modes and means of travel in order to provide people with the highest level of service within the funds available. It is important that UMTA initiate research, development, and demonstration projects to determine the feasibility of the uses of paratransit to substitute for or complement conventional transit services, such as late night service, Sunday and holiday service, service in rural and low population density areas, specialized services to transit dependents, package delivery needs, and line-haul runs, and to provide service in areas where none now exists and for individuals who require specialized equipment.

3. UMTA should require a paratransit element in future transportation improvement plans.