

PUBLIC POLICY AND TRANSIT SERVICES FOR HANDICAPPED PERSONS

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Because of increased awareness of the need for transportation for that segment of society whose mobility is limited, there have been increased efforts to establish the funding mechanisms, the management structures, and the operational equipment for such transportation service. However, these attempts, well intended as they are, sometimes have produced less than optimal results because of a lack of (a) knowledge of appropriate solutions to the problems involved, (b) cooperative effort among agencies in some areas, and (c) overall policy direction. This paper discusses efforts being made to overcome these deficiencies. To determine levels of activity in the transit industry, the American Public Transit Association (formerly the American Transit Association) surveyed its transit-operating members for details of all types of specialized services they are providing, not only the demand-responsive services that actually provide mobility but also educational programs teaching handicapped persons how to use transit, research into needs of handicapped persons on a local or statewide basis, and cooperative arrangements with other organizations to serve the needs of the handicapped. The information resulting from the study is viewed partly as a means to assist operators in establishing or expanding their specialized services by providing examples of successful efforts already under way. Perhaps more important, this information should be valuable as an input to the formulation of a comprehensive national policy to better define the appropriate programs for transit operators. Results of this survey are discussed. Also included are details of nontransit and paratransit activities in providing mobility and how the different forms of transportation have been successfully used in different areas. The relationship of these activities to the establishment of policy and regulations by various levels of government is viewed as a crucial factor.

•**MOBILITY** allows those with physical disabilities to participate more fully in life. Because our patterns of land use and activity location spatially separate residences from places of employment, shopping, schools, and medical facilities, it is necessary that there be a means of movement among those locations for handicapped persons. The dispersion of activities is of course the product of automobile use, but many of those with physical disabilities are unable to drive. To enable this group to participate in normal activities, some form of public transportation service specifically designed to accommodate those whose mobility is limited is a necessity.

To provide useful transportation services for elderly and handicapped persons requires that a number of interrelated specific issues be resolved.

1. What is the appropriate organizational structure? Should service be provided by a transit operator, one or more mission-oriented social service agencies, a separate organization, or a combination of these?
2. How should the specialized service be integrated with existing transportation services? Should handicapped persons be carried on existing vehicles and routes, should a separate service be provided, or should a combination of both types of service be implemented?
3. What effect will new services have on existing transportation systems? If sepa-

rate specialized operations are implemented, will existing transit lose any of its ridership through shifts of elderly and minimally handicapped persons to the new mode?

4. For whom should service be provided? Should every person, regardless of the nature and permanence of the handicap, be accommodated?

5. How great is the need? How many people with what types of handicaps want to travel, where do they wish to go, and when?

6. What is the value of these services? Although the goal of providing specialized service is worthwhile, how much of our resources are we as a society willing and able to invest in the equipment and manpower necessary to achieve the goal?

7. How and by whom should specialized services be funded? How much public funding should be used, and what levels of government should provide it? How much of the financial burden should elderly and handicapped individuals be forced to bear?

Studies have been carried out on these topics. Some knowledge does exist, but the research has not yet provided comprehensive answers to these questions. In response to the need for specialized services, in many areas it has been necessary to establish some specific type of service when no guidance existed on what was the best overall approach.

ATMOSPHERE AND BACKGROUND IN PUBLIC TRANSIT

Traditionally, few services for the handicapped have been offered by transit operators. In most localities, existing service was established by social service organizations for each organization's constituencies or clients. Although some of these organizations have done well with the limited resources available to them, this situation has produced limited service with little or no coordination with other means of transportation.

There are a number of reasons for the lack of activity on the part of the transit industry. Perhaps the most direct constraint has been various economic factors.

Providing specialized services for elderly and handicapped persons is an expensive undertaking. Incorporating nonstandard equipment such as wheelchair lifts or redesigned systems of passenger restraints and assists into new or existing vehicles increases both the capital cost and the maintenance cost for the more complicated equipment. In some instances, personnel who drive the vehicles must be specially trained to assist the handicapped. And, because in most areas the residences of the handicapped are as widely dispersed as those of any other population subgroup, not many individuals can be served by a particular trip, which means that a small number of persons must share the cost of making that vehicle trip.

Development of the public transit industry has been strongly rooted in the tradition of free enterprise. Currently, only 18 percent of the transit operations in this country are publicly owned, even though 85 percent of transit users are carried on publicly owned systems. However, the private operators can only operate services that allow their total package of services to be financially successful. Any services offered by these companies for the elderly and handicapped must therefore either be subsidized by state or local funds, be under contract with a social service organization, or pass on the cost of the service to riders, which may not be feasible or desirable.

Publicly owned transit operations are, of course, also subject to stringent fiscal limitations. Although these operations have access to public money, including local, state, and federal funds, the amounts of money available are less than adequate for the services that these operators are called on to provide. Establishing specialized services to assist those with mobility limitations adds a further financial burden to those already existing.

Another constraint is the degree to which specialized operating equipment can be integrated into normal transit operations. Attempts to accommodate persons with any disability other than minor ones on the same vehicles as nonhandicapped transit riders create conflicts. Vehicles carrying those with more severe handicaps must stop longer to allow adequate time for safe access and egress and provide adequate time for the handicapped to move to and from seats before the vehicle moves. These vehicles must

also have special seating or wheelchair positions for those who require them. This reduces the quality of service to nonhandicapped riders by reducing the average speed of the service and reducing seating capacity. At the same time, this service might not be optimal for handicapped riders. To prevent serious reduction in operating speed, handicapped persons must board and find seats as expeditiously as possible, which presents a safety hazard to those who are not able to move rapidly. And, unless entire fleets of vehicles were equipped with the necessary specialized equipment—a monumental task considering that currently more than 60,000 transit vehicles are owned in the United States—a handicapped person would have no assurance that the particular vehicle for a given trip would have the capability of accommodating her or him.

The most subtle of the constraints, and therefore the most difficult to deal with, are the attitudes and values of those whose decisions affect transit operations. This group includes not only transit management but also public officials at all levels of government and even the voters who must approve bond issues to support major programs. Although these attitudes are changing as more people realize the need for special transport and nontransport services for those with physical disabilities, this change in attitude has been gradual.

Finally, there has been a lack of direction in the field. Because of the historic lack of awareness of the need for special services for the handicapped, little has been done to systematically define the extent of that need, determine its character and distribution across specific subgroups of the handicapped, ascertain what types of services can be most helpful to handicapped persons, and design the most successful means of implementing those services, in terms of both institutional arrangements and operational equipment.

TRANSIT QUESTIONNAIRE

In spite of the many difficulties that transit operators face in attempting to institute such services, many operators are taking concrete actions to aid handicapped persons. To determine the extent and types of services being offered, a questionnaire was sent to the transit operators of the American Public Transit Association (APTA) on September 3, 1974. The purposes of the questionnaire were to

1. Determine the present level of activity by transit operators in providing transportation services and assistance to elderly and handicapped persons.
2. Provide suggestions for the transit industry on "how to do it" and other basic reference data on types of transportation services being supplied to elderly and handicapped persons.

This questionnaire (Figure 1) asked the operators whether they participate in providing various types of assistance to elderly and handicapped persons and, if so, to supply details on the characteristics and success (or lack thereof) of their efforts.

A summary of the responses to questions 5 through 12 is given in Table 1, and a list of the responding transit systems is given in Table 2.

The response to the questionnaire was quite good. A total of 89 transit systems responded, and many detailed useful and innovative programs. Many of the systems that do not have such programs indicated an awareness of the need for some type of service and requested a summary of the responses to the questionnaire as a guide to the types of efforts that have been successful in other areas.

No attempt has been made to determine statistical data from the survey results. Rather, the responses to the questionnaire were viewed individually to determine which contained information that would be useful to other transit operators in designing their own programs.

Figure 1. APTA questionnaire regarding transit accessibility for the elderly and the handicapped.

1. Name of transit system _____

2. Name of person completing this questionnaire _____

3. Date _____

4. Population within transit service area _____

5. Do you know of any studies made within your service area or state to identify the agencies and groups who are presently supplying some forms of transportation assistance to elderly and handicapped persons?
Yes _____ No _____ Please name the study and its source _____

6. Have you ever loaned your transit vehicles to agencies of the blind to enable their instructors and blind pupils to learn how to board transit vehicles, find seats and to exit safely, - in the privacy of the training school for the blind? Yes _____ No _____ Please name the blind agency _____ and
enclose a brief description of the training program, how often it is conducted and how many blind persons are aided. _____

7. Have you ever loaned your transit vehicles to agencies for crippled children, cerebral palsy, Easter Seal Rehabilitation Clinic or others to enable their instructors and pupils to learn how to overcome their handicaps and to board transit vehicles, find seats and to exit safely, - in the privacy of their training school or hospital? Yes _____ No _____ Please name the agency _____
and enclose a brief description of the training program, how often it is conducted, how many handicapped persons are aided and any other relevant data and measures of acceptance and success of the program _____

8. Do you offer a reduced fare program for senior citizens? Yes _____ No _____. Please describe the amount of reduction in fare, the hours of the day, and days of the week when the reduction is in effect, and the number of riders who have taken advantage of the program _____

9. If there is a Model Cities program in your operating area, does that program sponsor any specialized transit services provided by your organization for elderly and/or handicapped persons? Yes _____ No _____
If so, please describe that service _____

10. If there is a council of organizations in your metropolitan area which is concerned with the needs of elderly and handicapped persons, does your organization participate in that council, and if so, to what extent? _____

11. Do you provide any other transit services which are specifically designed for the use of elderly and/or handicapped persons, such as a demand responsive service with specially equipped vehicles? Yes _____ No _____
Please provide details as to the types of vehicles used, geographic extent of service, cost to users, limitations as to who may use the system, etc. _____

12. Do you operate a demand responsive system which, although not specifically designed for elderly and handicapped persons, can provide them with some mobility due to the individualized nature of the service? Yes _____ No _____
Describe the operation and any features which make it especially useful for elderly and handicapped persons. _____

Table 1. Positive responses to APTA questionnaire.

| Question | | | | | | | | | Question | | | | | | | | |
|----------|-----------|---|---|---|---|----|----|----|----------|-----------|---|---|---|---|----|----|----|
| Code | 4 | 5 | 6 | 7 | 9 | 10 | 11 | 12 | Code | 4 | 5 | 6 | 7 | 9 | 10 | 11 | 12 |
| 1 | 265,000 | | | | | X | | | 49 | 900,000 | | | | | X | | X |
| 2 | 1,300,000 | | | | | X | X | | 50 | 3,963,000 | | | X | X | X | | |
| 3 | 200,000 | | | | | X | | | 51 | 1,200,000 | X | | | | | | |
| 5 | 3,200,000 | X | | | X | X | | X | 52 | 1,500,000 | X | | | | X | | |
| 6 | 3,866,000 | | | | | X | | | 53 | 35,000 | | | | X | | | |
| 7 | 80,000 | X | | | | X | | | 54 | 1,023,000 | X | | | X | | | |
| 11 | 500,000 | X | | | | | | | 55 | 393,000 | | X | | X | | | |
| 12 | 428,000 | X | | | | X | X | | 56 | 6,000,000 | X | X | | X | | | |
| 14 | 750,000 | | | X | | X | | | 57 | 538,000 | | | | X | | | |
| 15 | 1,046,000 | X | | X | X | | | | 58 | 350,000 | | X | | X | | | X |
| 16 | 1,051,000 | | | | | X | | | 59 | 7,000,000 | X | | | X | | | X |
| 18 | 363,000 | X | | X | | X | | | 60 | 435,000 | | | | X | | | |
| 19 | 380,000 | | | | | X | | X | 61 | 275,000 | | X | | X | | | |
| 20 | 100,000 | X | | | | | | | 62 | 540,000 | X | | X | | | | |
| 21 | 2,500,000 | X | | | | | | | 63 | 1,574,000 | | | | X | X | | |
| 22 | 150,000 | X | | | X | X | | | 65 | 162,000 | | | | | | | X |
| 23 | 140,000 | | | | | X | | | 66 | 31,000 | X | | | | X | X | |
| 24 | 120,000 | | | | | | X | | 67 | 216,000 | | | X | | | | |
| 27 | 400,000 | X | | | X | X | | | 68 | 73,000 | | | | | X | | |
| 29 | 1,400,000 | X | | | | X | X | | 69 | 658,000 | X | | | X | X | | |
| 30 | 225,000 | | | | X | | | | 70 | 1,700,000 | | X | X | X | | | X |
| 32 | 47,000 | | | X | | | X | | 71 | 200,000 | | X | X | | | | |
| 33 | 165,000 | X | | X | | X | X | | 72 | 1,115,000 | | X | X | X | X | X | |
| 35 | 120,000 | X | | | | | | | 73 | 751,000 | X | | | X | X | | |
| 36 | 322,000 | | | X | X | | | | 74 | 1,044,000 | | X | X | | | | |
| 37 | 500,000 | X | X | X | | | | | 75 | 916,000 | X | X | | X | | | |
| 40 | 160,000 | X | | | | X | | | 78 | 500,000 | X | X | X | X | X | | |
| 41 | | X | | | | X | X | | 79 | 100,000 | X | | | X | | | |
| 42 | 975,000 | | | X | | | | | 80 | 140,000 | X | | | X | X | X | |
| 43 | | X | | | | X | | | 82 | 721,000 | X | | X | X | | | |
| 44 | 132,000 | X | | | | X | | | 83 | 2,157,000 | X | X | | | X | | X |
| 46 | 250,000 | | | X | | X | X | | 85 | 80,000 | | | | | X | | |
| 47 | 384,000 | X | | | | X | | | 88 | - | | | | X | X | X | X |
| 48 | 2,713,000 | X | | | | | | | | | | | | | | | |

Table 2. Responding transit systems.

| Code Number | Transit System | Code Number | Transit System |
|-------------|---|-------------|--|
| 1 | Wichita Metropolitan Transit Authority | 47 | Central Pinellas Transit Authority, Clearwater, Florida |
| 2 | Kansas City Area Transportation Authority, Kansas | 48 | Washington Metropolitan Area Transit Authority |
| 3 | Madison Metro, Wisconsin | 49 | Dallas Transit System |
| 5 | Southeastern Michigan Transportation Authority, Detroit | 50 | Chicago Transit Authority |
| 6 | Southeastern Pennsylvania Transportation Authority, Philadelphia | 51 | Regional Transportation District, Denver |
| 7 | Santa Rosa County, California | 52 | Mass Transit Administration of Maryland, Baltimore |
| 11 | Lehigh and Northampton Transportation Authority, Allentown, Pennsylvania | 53 | Bremerton Municipal Transit, Washington |
| 12 | Palm Beach County Transportation Authority, West Palm Beach | 54 | Metropolitan Atlanta Rapid Transit Authority |
| 14 | San Antonio Transit System | 55 | City Transit Service of Fort Worth |
| 15 | New Orleans Public Service, Inc. | 56 | Southern California Rapid Transit District, Los Angeles |
| 16 | Central Ohio Transit Authority, Columbus | 57 | Jacksonville Transportation Authority |
| 18 | METRO Regional Transit Authority, Akron, Ohio | 58 | Metropolitan Tulsa Transit Authority |
| 19 | South Coast Area Transit, Santa Ana, California | 59 | Transport of New Jersey, Maplewood |
| 20 | Tri-State Transit Authority, Huntington, West Virginia | 60 | Calgary Transit, Alberta, Canada |
| 21 | San Francisco Bay Area Rapid Transit | 61 | Greater Richmond Transit Co., Virginia |
| 22 | Duke Power Co., Greensboro | 62 | Metro Area Transit, Omaha |
| 23 | Amarillo Transit System | 63 | City of Detroit Department of Transportation |
| 24 | City Utilities, Springfield, Missouri | 65 | Augusta Coach Co., Georgia |
| 27 | City of Tucson Transit System | 66 | Rome Transit Department, Georgia |
| 29 | Metropolitan Dade County Transit Authority, Miami | 67 | Columbus Transit System, Georgia |
| 30 | Luzerne County Transportation Authority, Wilkes-Barre, Pennsylvania | 68 | Cities Transit Co., Albany, Georgia |
| 32 | Iowa City Transit | 69 | City and County of Honolulu |
| 33 | Lane Transit District, Eugene, Oregon | 70 | Orange County Transit District, Santa Ana, California |
| 35 | Regional Transit System, Gainesville, Florida | 71 | Savannah Transit Authority |
| 36 | Mass Transportation Authority, Flint, Michigan | 72 | Municipality of Metropolitan Seattle Metro Transit |
| 37 | Phoenix Transit | 73 | Southwest Ohio Regional Transit Authority, Cincinnati |
| 40 | Kanawha Valley Regional Transportation Authority, Charleston, West Virginia | 74 | Niagara Frontier Transit Metro System, Inc., Buffalo |
| 41 | Tennessee Department of Transportation | 75 | Tri-Met, Portland, Oregon |
| 42 | Milwaukee and Suburban Transport Corporation | 78 | CNY CENTRO, Syracuse |
| 43 | Port Authority Trans-Hudson Corporation, New York | 79 | Brevard Transportation Authority, Melbourne, Florida |
| 44 | Topeka Metropolitan Transit Authority | 80 | Ann Arbor Transit Authority |
| 46 | Fort Wayne Public Transportation Corporation | 82 | Capitol District Transportation Authority, Albany |
| | | 83 | Toronto Transit Commission, Canada |
| | | 85 | Fitchburg and Leominster Railway Co., Fitchburg, Massachusetts |
| | | 88 | St. Petersburg Transit |

Studies on Transportation for the Elderly and the Handicapped

The questionnaire asked whether the management of the transit operator knew of any studies of the existing transportation situation of elderly and handicapped persons in its own area. Thirty-three responded that they did have such studies; three more stated that a study was being prepared. Several agencies enclosed copies of their studies. The most extensive of these was a thorough study carried out by the Lane Transit District in Eugene, Oregon. Other reports received included a study of the transit strategy teams established by the Florida Department of Transportation to assist transportation disadvantaged, a study of reduced fares for senior citizens in Baltimore by the Mass Transit Administration of Maryland, and an analysis of low fares for the elderly in the state of Illinois.

Training Handicapped Persons to Use Transit

Many handicapped persons have difficulty in boarding and exiting transit vehicles and in moving about while inside. To determine what opportunities transit operators are providing for those with handicaps to learn how to use transit with a minimum of discomfort and risk, the respondents were asked whether they had lent vehicles either to agencies for the blind or to agencies dealing with other types of handicapped people, such as Easter Seal societies or clinics.

Twelve operators responded that they had lent vehicles to agencies for the blind for training purposes. The agencies were allowed to use the vehicles at their facilities so that the teaching could take place in familiar surroundings. Two more responded that they make buses available to groups of blind people at the bus storage area, and one indicated that groups of blind persons are not charged a fare when they use regular transit service for educational purposes. The Toronto Transit Commission has cooperated with the Canadian National Institute for the Blind by providing subway orientation tours.

Eighteen operators stated that they had lent their vehicles to other agencies for the handicapped for training purposes; two more provide vehicles at their own facilities for handicapped groups who wish to use them. As an example of how deeply involved some of the operators are, Metro Area Transit in Omaha provides assistance to the J. P. Lord School, the Eastern Nebraska Commission on Retardation, the Westside YMCA, and the Omaha school system. The program consists of instruction to teachers on how to train children to use a bus and then, at a later time, provision of a bus so that the children can practice what they have learned. This takes place 3 or 4 days per week for 3 weeks at each location, on an annual basis. Approximately 300 persons are assisted annually. Other successful programs of this type are operated by the Fort Wayne Public Transportation Corporation, the Niagara Frontier Transit System in Buffalo, the Tri-Met system in Portland, Oregon, and others.

Going even further, the Southeastern Pennsylvania Transportation Authority has donated an inoperative bus to the Widener School in Philadelphia, and New Orleans Public Service, Inc., cut a bus in half and placed it at the Crippled Children's Hospital for educational purposes.

Model Cities Programs for Increased Mobility

The Model Cities Program was developed as a means to allow cities to rehabilitate their worst areas through the efforts of the citizens of those areas. Inasmuch as transport is one of the key elements in the viability of an urban area, many Model Cities efforts have included improvements in mobility for area residents, especially those with either physical or economic restraints on their ability to travel. And in many instances, transit operators have been active in providing that mobility. For example, the Tucson Transit System provides regular transit services to Model Cities area residents on scheduled routes plus a special door-to-door service for low-income and handicapped

persons. In Atlanta, MARTA operates the Model City Shuttle, which provides feeder service to regular transit routes, and on weekends an express service to a hospital, which is routed to provide increased accessibility for elderly citizens.

Communications With Interest Groups

The question on the survey form that received the largest number of positive responses was whether the transit operator participates in any local organizations that are concerned with the needs of the elderly and handicapped. Forty-six operators indicated that they are involved in such activities. This seems to indicate that many operators are aware of the need for increased specialized services, even though they may be unable to do much because of economic constraints.

Specialized Transit Services

Perhaps the most beneficial service that a transit operator can offer is a specialized service designed especially for elderly and handicapped persons. Normally, such services operate on a demand-responsive basis, offering door-through-door or at least door-to-door mobility. This type of service offers immediate benefits to elderly and handicapped persons in that it provides individualized mobility to those who have an intense need for that mobility.

Of the transit systems responding, a total of 15 have systems designed for the use of elderly and handicapped persons, and seven more such systems are in the planning or implementation process.

Because each service has been developed in response to local needs and to conform to local capabilities, the types of services offered vary greatly. In Ann Arbor, Michigan, the demand-responsive service is provided as a part of a general dial-a-ride system. One vehicle of the fleet is specially equipped with a wheelchair lift. Operation of the service as a part of a larger dial-a-ride system provides advantages, in that more sophisticated operational techniques may be used. For example, a rider need call only 2 hours before he or she wishes to ride instead of the 24 hours required in some other systems. A separate telephone number is maintained exclusively for use by handicapped patrons to ensure that they are able to contact the vehicle dispatcher. Service is offered to all areas in the city, but priority is given to trips to health care facilities and employment locations.

The Omaha Metro Area Transit operates a service that covers two counties and that is under contract to the Eastern Nebraska Community Office on Aging. The service uses three vans, and three more are being purchased. Some of these are equipped to accommodate wheelchairs. Criteria for determining who may use the service include age, income, and degree of immobility. Users are asked to contribute on an ability-to-pay basis.

Thirteen large vans are operated by St. Petersburg Transit in Florida. These vans are modified with extrahigh doors, lowered steps, and wheelchair lifts. Service is offered over a 13-mile² (33-km²) area for anyone who is handicapped or more than 60 years old.

Some other transit systems operate demand-responsive systems that have not incorporated any specialized equipment but that can offer mobility to those with less severe handicaps because of the door-to-door character of the service. Ten operators reported operating a system of this nature. Examples are the system operated by South Coast Transit in Orange County, California, and the Haddonfield, New Jersey, Dial-A-Ride.

Conclusions

The information produced from the questionnaire does not represent the entire transit

industry, since only APTA members were included and not all who received the questionnaire completed it. However, it does provide useful insights into the present level of activity. Many transit operators are providing vital services; many others have not been able to do so. The most heartening note is that so many are aware of the need for improvements in this area and are eager for guidance in how best to proceed.

UMTA'S PROPOSED RULE MAKING

Formulation of public policy has been a very difficult task. Although some steps have been taken to assist those with mobility limitation, the transit industry has not taken the lead in suggesting positive levels of service to be provided for handicapped persons. As private enterprises, some transit systems could not provide such services out of the fare box. Publicly owned transit authorities have not been able to undertake such services on an extensive basis because of the extraordinary costs involved.

UMTA changed all that in November 1974 by announcing public meetings on the preliminary rule making for transit regulations for the elderly and handicapped. This was the first step toward providing a long-term policy for the nation. Comments made at these public meetings and written materials submitted to UMTA provide a basis for determining the feelings of the affected groups. APTA offered its assistance in the form of a thorough and comprehensive supply of technical data and detailed requirements for such a regulation.

The next steps will include another announcement of a proposed final rule making and probably additional public hearings.

UMTA's task is not easy, and UMTA will receive few compliments from any interest groups. Doubtless, some representative of agencies for the elderly and handicapped will feel that UMTA is not moving fast enough to provide total accessibility and mobility to handicapped and elderly persons. Conversely, state departments of transportation, municipalities, and transit authorities may feel that UMTA is moving too fast without providing an indication of how the necessary funding for this additional accessibility and mobility will be accomplished. It is to UMTA's credit that this difficult project is being forcefully tackled and it behooves all interest groups to cooperate in providing rational, practical input to expedite the determination of feasible regulations.

APTA's response to the proposed UMTA regulations includes a great deal of data concerning the technical requirements for accessibility in fixed-guideway facilities as well as bus transportation facilities, and additional sections of the response refer to the details of accessibility for fixed-guideway vehicles and buses. Some of the details addressed are

1. Accessibility,
2. Lighting,
3. Entrances and exits,
4. Interior handrails and stanchions,
5. Floors and steps,
6. Priority seating,
7. Destination route signs,
8. Fare boxes, and
9. Public address systems.

The more difficult problem areas relate to

1. The coordination of all sources of transportation for elderly and handicapped persons,
2. Levels of service for elderly and handicapped persons, and
3. Funding.

Coordination of Transportation Services for the Elderly and Handicapped

Some studies made by the San Francisco Bay Area, Metropolitan Transportation Commission, state departments of transportation, and UMTA indicate from 200 to 600 individual sources of transportation for elderly and handicapped persons within some major metropolitan regions. Some of these services may be only a station wagon that the local Easter Seal Society or children's hospital uses to transport its patients. In other areas private sources such as the Handicabs of Milwaukee, Inc., which now has more than 115 vehicles to provide specialized services for all types of handicapped persons in the Milwaukee area, provide service.

There is no best way to coordinate all of the competing transportation services in all metropolitan areas. Delaware has had several years' experience in operating the Delaware Authority for Specialized Transportation (DAST) and its predecessor organization. DAST, which is discussed more thoroughly later, is certainly the most comprehensive statewide attempt to coordinate all transportation services for elderly and handicapped persons within the state. It takes a long time to accomplish the types of cooperation necessary to coordinate the funding for this type of service, but this is slowly being accomplished in Delaware.

Rhode Island and parts of Missouri have a form of coordinated service for elderly and handicapped persons. However, neither of these efforts is mandated by state law, nor do they have the complete moral and financial support of state and municipal organizations within their area of operation. Perhaps the proposed UMTA regulations will help to direct Rhode Island and Missouri toward a completely coordinated system of transportation services.

In Brevard County, Florida, the local transportation authority has assumed the responsibility for all specialized transportation services, and coordination of other locally provided services is just beginning.

Thus it appears that a state, region, or local transportation authority can assume the responsibility for the coordination of all transportation services for the elderly and handicapped, including the use of funds for such services from many types of sources.

All states, major metropolitan areas, and regions must begin to consider how this task can best be accomplished within their areas.

Levels of Service

In Delaware, DAST uses its own vehicles, or can contract for services provided by others. Services that formerly were provided by others DAST provides through funds from purchase of service contracts from medical, health, welfare, and social agencies. DAST's expansion is commensurate with funds provided. Thus, the levels of service are determined by the degree of cooperation and the sharing of funds available from the state of Delaware, transportation sources, and other sources.

The U.S. Department of Health, Education and Welfare has identified 64 sources of funds for providing transportation services. Most of these sources were from the Department of Health, Education and Welfare, although other sources were from the Department of Labor, the Office of Economic Opportunity, and the Department of Transportation.

Denver, Seattle, and Baltimore are among the cities that are scheduled to provide a number of vehicles for such transportation services. Service provided by these vehicles and coordination of all other types of transportation services should add to the information on the necessary levels of service for supplying adequate mobility in typical cities across the United States.

Funding

Recognizing the value of coordinating the 64 sources of transportation funds mentioned

earlier, APTA has recommended that the levels of service to be provided to nonambulatory handicapped users should be subject to the approval of the administrator, and on granting such approval the administrator shall enter into an agreement for the affected public transportation system operator, regional transportation operating agency, or metropolitan planning organization, as appropriate, to provide 80 percent of the capital costs of all vehicles, equipment, and facilities necessary to provide the levels of service for nonambulatory handicapped users and coordination efforts required by the administrator and in addition 100 percent of the net deficit that may result from the provisions of approved special services and 100 percent of the administrative and operating costs for the required coordination effort.

Use of the funds from HEW and other agencies should reduce the transit operation deficits to a much more reasonable level, which would then be funded by the Department of Transportation.

COROLLARY ACTIVITIES AND DATA

DAST—An Authority Approach to Specialized Transportation

The Delaware Authority for Specialized Transportation is a successful local approach to the funding and operation of specialized transportation on a statewide basis. Although DAST has only been providing such service since December 1974, its predecessor, the Delaware Interagency Motor Service, Inc. (DIMS), a private nonprofit corporation, began service in the summer of 1971. It was originally created to fill the gap created when volunteers left for summer vacations. The Greater Wilmington Development Council, the Delaware Red Cross, and the New Castle County Ambulance Service banded together to hire college students for the summer to fill in the void of volunteer transportation services. Approximately 600 trips per month were performed in New Castle County from June 12 to August 1971. By 1972 there was a mandate for year-round statewide service, and 24,000 trips were made. In 1973 there were 33,000 trips, and 90,000 trips in 1974. The DIMS fleet grew to 36 vehicles including nine-passenger station wagons, 12-passenger vans, 16 and 20-passenger minibuses, and orthopedic and special care vehicles. Dispatching was performed manually without the aid of two-way radio equipment. DIMS grew to serving 35 agencies and more than 6,000 individual clients per month. The approach used by DIMS was unique. It mandated all agencies, public and private, to use one method of service delivery. It had limited success in reducing duplication. One major accomplishment of DIMS was recognition and membership in the Delaware United Fund (UF) in 1972. Through its United Fund affiliation, DIMS was able to work with other UF agencies to provide better transport service at reduced expenses.

Throughout DIMS' 3-year history, purchase of service contracts was the primary source of funds. All service was provided to contract member agencies, who in turn made client referrals. No requests were taken from private individuals, only from agencies. This provided a means of authenticating need, allowed for accountability, and avoided direct conflict or competition with public carriers. The system has worked well except that it does not provide for the full range of medical and social transportation services. Governmental (federal, state, and local) programs accounted for 81 percent of DIMS' revenues in 1974. These funds came from Title 19 (Medicaid), Titles 3 and 7, plus vocational rehabilitation and public health contracts. Private agencies such as the Easter Seal Society, American Cancer Society, the Alfred I. duPont Institute, United Cerebral Palsy, and the YMCA made up the bulk of the private agencies who also contract for service. Revenues made DIMS 80 percent self-supporting. Private foundations, private citizens, the United Fund, and small local government grants have provided the subsidy to fill in the additional cash needs.

DIMS was proud that only 10 percent of its resources were expended on administrative costs. Ninety percent of all funds are put into operations to provide maximum service.

With such a seemingly positive situation, why would it be desirable to take a private agency and transform it into a public authority? There are several reasons.

1. DIMS was becoming overloaded. Demand was outstripping resources. Unless DIMS was expanded, either the quality of service would have to be sacrificed or requests for service would have to be denied in great quantities.

2. DIMS' financial base was limited. DIMS always operated hand-to-mouth. Expansion was impossible because of lack of capital for equipment and operations. An authority also offered tax breaks unavailable to a private nonprofit organization (tax-free fuel and Centrex telephone systems for example).

3. An authority provided legitimacy. As a private, nonprofit organization, DIMS had little weight in dealing with public and private agencies. But, as an authority, there would be a legislative mandate, concurrence and support by the governor, aid and assistance from state, local, and federal agencies, and a sense of permanency and mission.

These factors prompted the DIMS board and staff, the office of the governor, the state Department of Highways and Transportation, the United Fund, other interested agencies and individuals, and several legislators to draft an act to create an authority for specialized transportation. The act was drafted with the intent of keeping the one provider-multiuser concept of DIMS, expanding the scope and level of specialized service, mandating interface with public carriers whenever possible, and stressing the ideal of providing the best possible service by use of the most economical mode for the citizens of Delaware. Through the act, the legislators and executives made a commitment to provide specialized services to Delaware residents who are unable to provide or obtain transportation service themselves. When the General Assembly signed the act into law, an appropriation for start-up funding for the authority was also passed.

DAST will continue service under the basic format of DIMS. Member client agencies will be served by DAST, and they will be responsible for all refunds and client-screening. Screening clients is still deemed necessary to fulfill the accountability mandates. The authorizations required will curtail abuses and will allow for clear coordination of service and reduced duplication.

Local government units have shown their interest and support. New Castle, Kent, and Sussex County governments either have or are in the process of pledging local funds as operating money for transportation programs for the elderly and handicapped. All three counties have also stressed the need for nonemergency ambulance service to relieve the burden on existing ambulance services. Delaware's Emergency Trauma Care System has been impeded by the growing number of routine transports that have to be performed by emergency vehicles. In New Castle County alone, 14,000 such runs were performed by the New Castle County Ambulance System. These runs are expensive, impede emergency reaction time, and create backlogs of discharged patients who cannot be moved from a medical facility because of lack of stretcher transport resources.

A further goal of the authority will be the creation of advisory councils composed of consumers, sponsoring contract agencies, and other service providers under the system. For the system to be truly demand responsive, the real needs and concerns of all involved with it must be known and appreciated.

The United Fund of Delaware has taken a positive stance on DAST and United Fund agencies. It is the UF's policy that any agency requesting money for vehicle purchases must justify completely why the vehicle is necessary for client transport as opposed to contracting for service with DAST. The Fund wants to stop the proliferation of vehicles and the headache that upkeep and insurance create. It is acknowledged there are some instances when immediate access to a vehicle is required and as such DAST would not fill the need, but generally, agencies can utilize DAST's services. This is especially true given the several modes of service available under DAST. One point is continually mentioned by social service agencies: Now that DAST is functioning, they can get out of the transportation business of operating small, uncoordinated fleets. They much prefer to contract for service and let experienced transport people provide the needed services.

The DAST concept is not the ultimate answer. Although it is novel, it does offer a

pragmatic solution for the state of Delaware. The basic concept of interagency cooperation in specialized transportation services was proved successful with DIMS. Now, DAST has solid public support and new horizons of funding and service. As such, DAST and programs like it are important to the field of specialized transportation.

Oakland, California, Demand-Responsive Conference

In November 1974 the Transportation Research Board and the American Public Transit Association sponsored the Fifth Annual International Conference on Demand-Responsive Transportation Systems (3). At the conference, major emphasis was placed on the use of taxicabs in transporting elderly and handicapped persons. One of the themes of the conference was the necessity of using all modes of transportation to effectively maximize urban mobility. Representatives of the taxicab industry discussed the magnitude of the services currently provided by U.S. taxicab companies. They also pointed out that taxicabs, which provide demand-responsive services, are similar to the systems that are being "discovered" by municipalities across the country but that are subsidized. In some areas of the country, taxicab companies and municipalities or transit authorities have entered contractual agreements wherein taxis provide demand-responsive service for particular areas of a region for the general public or segments of the elderly and handicapped population. Under such circumstances, these contractual arrangements can be as cost effective as other types of services offered to the general public or handicapped persons.

Other issues discussed were the regulatory problems of the taxi industry, the potential of taxicabs for providing innovative paratransit services, computerized taxicab-dispatching systems, and design and use of diversified-use vehicles. Handicabs, of Milwaukee, Inc., a specialized transportation service for the elderly and handicapped, was discussed as were UMTA's service development projects related to mobility of the elderly and handicapped.

Florida State University Fourth Annual Transportation Conference

The theme of the conference at Florida State University was Toward a Unification of National and State Policy in Action on the Transportation Disadvantaged. The speakers represented a wide diversity of backgrounds and spoke on many aspects of transportation of elderly and handicapped persons in both rural and urban environments. Representatives from DAST and the Department of Health, Education and Welfare spoke.

Findings were presented from a study on transportation for elderly and handicapped conducted by the Administration on Aging and the Department of Transportation that revealed the great number of transportation services for elderly and handicapped persons that are available across the United States and that, because many of these services are funded for a 1 or 2-year period, a disservice occurs to the elderly and handicapped persons when this funding is terminated. Also discussed was the fact that a large proportion of handicapped persons are not physically able to use regular route transportation and thus need specialized demand-responsive service. The costs of such service might vary from \$4 to \$8 per person per ride, and many of the figures quoted did not include depreciation of equipment or the administrative costs attributable to such service.

A panel of seven consumers of transportation for elderly and handicapped persons articulated their needs, which could only be fulfilled by personalized door-through-door transportation and in many cases with attendant assistance.

Other speakers spoke on the social responsibility of providing a higher level of service for elderly and handicapped persons, but each speaker referred to the economic aspects of the service supplied and the fact that taxpayers have to agree to the funds to be expended for such service.

Transportation for the Elderly and Handicapped in
Gothenburg, Sweden

Gothenburg, Sweden, is an excellent example of the type of social responsibility and coordination of services that can be provided for elderly and handicapped persons. Prior to 1967, transportation for elderly and handicapped persons was provided by private welfare agencies in Gothenburg. The city council then made the decision that the Gothenburg Transit Authority would be responsible for such services.

Eligibility for such service is determined by the social and welfare department of the city. To be eligible the applicant must be a resident of Gothenburg and be certified by a doctor as handicapped. Persons receiving such eligibility can request as many trips per month as they wish for school or medical treatment. In addition, they may request up to eight leisure trips per month. No fare is charged for school or medical trips. However, there is a fare of 30 cents for work and leisure trips.

The Gothenburg Transit Authority has an arrangement with the local taxicab companies for purchasing transportation service. In 1973 approximately $\frac{7}{8}$ of the trips provided elderly and handicapped persons were accomplished by taxicab. The remaining trips were handled by a division of the transportation authority, which now has a fleet of 40 special vehicles and a staff of 85 people to accomplish approximately 105,000 trips per year.

The average cost per trip including all administrative costs, drivers, maintenance, and capital depreciation is approximately \$8 for the specialized vehicles and \$4 for taxis.

CONCLUSIONS AND RECOMMENDATIONS

1. Very little implementation of transportation of elderly and handicapped persons has occurred to date.
2. There is a social need to provide more mobility for elderly and handicapped persons.
3. The U.S. Department of Transportation's proposed rule making on regulations for transportation for the elderly and handicapped is a giant step toward the formulation of a uniform policy for implementing transportation for elderly and handicapped persons.
4. Improving bus accessibility can benefit the speed, comfort, and safety of boarding and alighting of able-bodied, handicapped, and elderly persons.
5. Total access to all vehicles at all times for persons with all types of handicaps presents many operational difficulties and would be extremely expensive.
6. Some types of fixed-route bus service are not practical for transporting wheelchair users.
7. It is possible that the utilization of the Department of Transportation Section 16b2 funds could cause the proliferation of competing inefficient transportation services for elderly and handicapped persons, rather than the coordinated type of transportation required under the proposed rule making. However, careful administration and approval of the applications for such funds could complement the purposes of the proposed rule making.
8. The organization, successes, and failures of each principal transportation service that has been provided for elderly and/or handicapped persons must be more completely and succinctly tabulated. The study for the Administration on Aging and the Department of Transportation has done an excellent job of beginning this work. Some of the work done by the Department of Health, Education and Welfare and others indicates that it is possible to obtain the cooperation of many of the existing transportation services for elderly and handicapped persons and to combine them into a coordinated network.
9. Delaware, Rhode Island, and portions of Missouri have proved that it is possible to supply coordinated service within a region. Such services should be encouraged, and everything possible should be done to coordinate their funding.
10. In many cases, transit systems and authorities are willing to undertake the

coordination and participate in the implementation of additional transportation services for elderly and handicapped persons, provided that public approval generates sufficient funding. The success of the Brevard County, Florida, Transportation Authority in such activities demonstrates the value of this type of approach.

11. The transit industry, in conjunction with the Departments of Transportation and Health, Education and Welfare, should initiate a series of conversations designed to implement the use of funds from many sources for the coordinated supply of effective transportation for elderly and handicapped persons.

12. Because of its character as a pilot example of successful coordination of transportation services, the Delaware Authority for Specialized Transportation should receive administrative and financial assistance from the Department of Transportation and other interested federal agencies to coordinate transportation for elderly and handicapped persons.

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