

Cleveland Rail Transit Airport Service

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• THIS STUDY is organized around the recent extension of the Cleveland Transit System (CTS) rail rapid transit line to Hopkins International Airport. An objective in this study has been to develop the means to make accurate forecasts of transit demand as a supplementary mode for airport access, based on the empirical data and experience in Cleveland. The rail rapid link to the Cleveland airport represented a unique opportunity for such a project; it is the only direct connection of a rail rapid system to a major airport in the United States and was only made possible through a federal grant under the Mass Transportation Act of 1964. To the extent that grant applications for similar extensions may be made in the near future and because of the Department of Transportation's responsibility for coordinating and promoting interstate transportation, this study will have a direct application in policy decisions of the Department. It will also provide some valuable information that can be used on the state and local levels for regional transportation planning.

STUDY APPROACH

The approach of the study has been to collect data, both before and after the opening of rail service to the airport, relating to the characteristics of airport trip-makers and their trips. These sets of data are now being compared to determine the diversion of travelers from automobiles, taxis, and limousines to the rapid transit system, as a function of time and cost savings and other variables. The following four types of trip-makers have been included in the study:

1. Inbound and outbound air passengers,
2. Persons meeting or seeing off air passengers,
3. Casual visitors to the airport such as sightseers, and
4. Employees at the airport.

Two extensive surveys have been undertaken. The first was September 8-14, 1968, about 2 months before rail service began to Hopkins Airport. The second survey was during September 7-13, 1969, 1 year after the first survey. In addition to the data collected in the two special surveys, the 1963 regional transportation data of the Cleveland-Seven County Transportation-Land Use Study are being used. In the two recent surveys, almost 80,000 responses were obtained from the various population groups being studied, representing over 1 million bits of information. At present we are still processing and analyzing most of the data. Our timetable calls for completion of the study by June 1970, and publication of the results shortly thereafter.

As background for those who are not familiar with Cleveland and its transportation system, the CTS is a publicly owned transit system that, in addition to extensive bus operations, operates a 19-mile, two-track rail rapid transit line. There are 17 stations on the line, with the airport as the last stop on the west end. The ninth stop from the airport is Cleveland Union Terminal, the only downtown station and the transfer point to the Shaker Heights rail rapid line. Travel time to downtown Cleveland from the airport is 25 minutes on the rail rapid line, with a train departing every 10 minutes. Currently there are no express trains. No special services are offered to the air traveler

on this line, but there are baggage racks in the newer cars that make some of the runs to the airport. Since last spring the fare has been 40 cents. Free parking lots for transit patrons are available at most of the suburban stops, except the airport. There is standing room only on the system during the peak hours.

FINDINGS

There are some preliminary findings extracted from the data processed to date and some qualitative observations regarding the potential of transit as a mode for airport access ground transportation. Travel time from the airport on Interstate 71 and Interstate 90 is just about as fast or faster to most points served by the rail rapid line, except perhaps during the peak hours. At those times, only a 10- or 15-minute delay at most could be expected on the highway.

Hopkins International Airport is relatively small compared to other major U. S. airports, ranking 17th in the number of enplaned passengers. It has only one-sixth the number of enplanements as O'Hare in Chicago and one-half the enplanements of Washington National Airport. It has only 3,100 employees as compared to over 40,000 at JFK International in New York. Despite its relatively small size as a traffic generator, Hopkins Airport has added about 7 percent to the total ridership on the CTS rail rapid line.

Prior to the opening of the rail rapid line to the airport, 62 percent of the air travelers ingressed or egressed Hopkins Airport via private automobile, 13 percent by limousine, and 20 percent by taxi or rent-a-car. Only slightly more than 1 percent used a public bus. Based on preliminary response tabulation of our September 1969 survey, about 15 percent of all the originating and terminating air passengers at Hopkins are now riding the rail rapid line to and from the airport.

This, however, does not tell the whole story. Only about 10 percent of the air travelers using Hopkins Airport travel to downtown Cleveland. Another 30 to 40 percent travel to other areas in Cleveland served by the rail rapid line. The remaining air travelers begin and end their trips at rather dispersed locations throughout Cleveland and the surrounding counties. A large number, for example, come from such cities as Akron and Canton, and even as far away as Columbus. As a result, as many as 50 percent of the air travelers coming from some locations served by the rail rapid line are riding it to the airport. From downtown Cleveland, which has good highway access to the airport, over 40 percent of the air travelers are taking the rail rapid line.

Half of the air travelers using this form of transportation to the airport board the CTS at the downtown station. However, almost 30 percent of those boarding downtown transfer from the Shaker Heights rail rapid line, having originated their trip in the eastern suburbs. Almost 20 percent of the air travelers riding the CTS rapid transit originate their trip at Windermere Station in the northeastern suburbs of Cleveland. The significance of these statistics is that the line is being used by air travelers not only to travel from the airport to the CBD but also, for the most part, to travel between the airport and the suburban residential communities. Only 26 percent of the air travelers using the line have an origin or destination in downtown Cleveland. Transfers between rapid transit lines and many local stops (as many as 26 stops from the airport to the end of the Shaker line) do not appear in themselves to greatly inhibit the use of the rail rapid line to the airport.

In terms of competition with other modes, the airport line has taken its patronage about equally from limousines and the automobile in the downtown area. Not all of the automobiles are taxis either; there was a 35 percent drop in air traveler use of private cars and rent-a-cars from the CBD.

Three-fourths of all the air travelers riding the transit line between the airport and the downtown station are nonresidents of the county in which Cleveland is located. Over one-quarter of the air travelers who take the rapid transit walk from it to their final destinations. In the CBD, one-half walk to the rapid transit. Only 5 percent of the rapid transit riders use the free CTS parking lots.

Aside from the overwhelming acceptance of the rail rapid service by the air traveler, probably the most important finding to date is the peaking characteristics at the airport

station as compared with the commuter peaks at the other stations. As is commonly understood, transit is primarily geared to commuter peaks. For example, 40 percent of all passengers that board at the West Park Station pass through during 1 hour in the morning rush. In contrast to these commuter peaks, the peaks at the airport station were found to be relatively flat, with significant volumes at midday and as late as 10 p. m. The volume of weekend trips through the airport station is comparable to that of the weekday trips, whereas the rest of the system is comparatively idle on Saturday and Sunday. Because the airport is located in the suburbs rather than downtown, much of the ridership on the rapid transit to the airport is in the opposite direction of peak travel.

The significance of this off-peak ridership to the airport is found in its effect on the fare box. The off-peak rider pays the same fare as the commuter during the peak hour but utilizes otherwise unused capacity. To the extent that system peaking is reduced by the airport-bound transit rider, the fare for all passengers may be kept at a lower level.

TRENDS IN RAIL RAPID TRANSIT USAGE

It has been found that the ridership on rapid transit from the airport declined somewhat after the first 6 months of operation but has leveled off since then to slightly less than 2,000 boarding passengers per day. Moreover, since last spring, the ratio of people boarding at the airport station to the number of passenger displacements has been about 0.25. In terms of future growth, this ratio has significance. This year was a poor year in terms of growth in the air travel market. In Cleveland especially, the average passenger enplanements for September-October 1969 was only 3 percent above that of the previous year. This can be compared to an average growth of 12 percent per year over the preceding 10-year period. If we were to conservatively assume that a 10 percent per year growth rate would occur at the Cleveland Airport over the next 10 years and that the ratio of rapid transit users at the airport station to airport activity would remain fairly constant, then the use of rapid transit to Hopkins in 1980 should be about 2½ times what it is today. If the trend for the other ridership on rapid transit continues at its present level, then by 1980 the airport station will be responsible for 15 percent of the total ridership as compared with its current 7 percent. As noted earlier, this will probably be off-peak ridership to a very substantial degree.

There are, of course, many other factors that determine long-range demand for transit, but it is interesting to note that airport usage has a potential for substantial growth in a transit industry that has been noted for growth stagnation and relative decline in its share of the market.

I have emphasized the usage of the rail rapid line to the airport with respect to air travelers, in that they constitute almost 60 percent of the riders to the airport. Other airport user groups also result in significant transit patronage, with the airport employees and air passenger-related visitors comprising 6.5 and 10.5 percent of the airport rapid transit ridership respectively. Casual visitors and others account for over 20 percent. This latter group has had perhaps the most dramatic shift to the rail rapid line; 32 percent of the casual visitors interviewed in our second survey had taken rapid transit to the airport, whereas in the previous year over 90 percent had arrived by private automobile. Little evidence was found of people working in the vicinity of the Cleveland airport or commuting to downtown Cleveland by using the airport rapid transit station.

SUMMARY

We have found that the rapid transit service to the Cleveland airport has been a significant benefit to air travelers and other airport users, as evidenced by their acceptance of the system. Some evidence seems to indicate that the usage of transit results from both time savings and dependability of rapid transit in contrast to the advantages of comfort and privacy of alternative modes of access to the airport.

The rapid transit service to the airport also has indirectly benefited the city of Cleveland and the regular CTS commuters; the off-peak airport ridership should act to hold down transit fares in the long run.

Looking further into the potential of transit to airports at other major U. S. cities, we should not overlook the possibility of setting transit fares for air passengers more on the basis of value of service. This might be implemented by setting a special zone fare for trips to the airport, perhaps with discount passes for employees and other daily commuters to the airport. The air traveler is generally insensitive to out-of-pocket costs, especially if he is reimbursed for such fares as a business expense. Furthermore, as we found in Cleveland, most of the air travelers going to the city are not residents of that city, and therefore their private automobile is not available to them. The service that these air travelers may be willing to pay for, with substantial benefits to other transit users, would be high frequency, dependability, and time savings.

It is hoped that the research the Department of Transportation is conducting in Cleveland will result in improved airport access and community benefits to several other U. S. cities. The purpose of this research is to develop ways to better estimate demand and identify the benefits of providing transit for airport ground access. However, much more must be done before such service can be offered where needed. Airport access must be included in regional transportation planning such that the benefits to the airport users and the community can be identified and evaluated. Coordination between government agencies and industry groups, some of which historically have had few channels of communication, must be established. Such communication between the administrations within the Department of Transportation responsible for promoting air and ground modes of transportation is being established. More is definitely needed at the local level between the aviation interests and the ground transportation sector.

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