Airport Demand Characteristics Affecting Freeway Operations

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ABRIDGMENT

•BELATED recognition of the magnitude of growth in automobile trip generation at major airports has caused some recent limited research at individual airports directed primarily toward solution of immediately pressing problems, such as parking requirements and terminal curb use. However, the studies to date have not sufficiently evaluated the question of impact on freeways and arterials, nor defined the problem adequately to predict future freeway demand levels at airports with much confidence. Further research is badly needed, but must be more comprehensive in nature. First, the airport must be recognized as more complex than past studies have indicated, and the separate functions occurring at the airport must be separately analyzed.

For example, airports are major employment centers, and the travel demands and trip characteristics for this function are entirely different from and only indirectly related to the primary function of transportation transfer terminal. A third function of major airports is as a place of commerce, sales, services, and recreation, and these trips are also different in character and should be treated separately.

Airport demand studies should also be directed toward the following problems:

1. The present relationships between daily air passenger and cargo volumes at individual airports and the volumes of vehicles required to serve those activity levels. Care must be taken in developing these parameters to evaluate sensitivity of such ratios to other factors, including the types of air trips served, the percentage of air transfers, the seasonal variations in air travel, and the role of the airport in the region. In some respects, each airport is unique. But what families of curves could be developed?
2. The time distribution of travel to airports (for each airport function) and the relationship of the time distribution to overall aviation patterns and air trip purposes. Can peaks be spread?
3. The possibility of separating airport functions spatially, to distribute vehicle demands to more than one interchange or freeway facility.
4. The sensitivity of all the foregoing relationships to new aviation technology, including "jumbo" aircraft, VSTOL development, supersonic travel, and improved ticketing and baggage handling.

The growth in air travel has made airports some of the most important traffic generators in metropolitan regions. To understand fully the implications for freeway travel of this growth and the future technology in aviation, individual airports must be analyzed by their separate functions, and their travel patterns thoroughly understood. Even though individual airports will vary in their demand characteristics, parameters should be established based on continuing research that will enable freeway planners to better foresee the needs of the future.

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