

# Abstracts of Papers

## INVESTIGATION OF MODAL CHOICE FOR DUAL-MODE TRANSIT

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The attitudes of individuals regarding dual-mode transit, personal rapid transit, and people-mover forms of urban transportation were collected through a home-interview survey. It was hypothesized that a more thorough understanding of mode choice could be obtained by stratifying the sample into homogeneous groups rather than by considering the set of respondents collectively. Respondents were grouped according to two alternative criteria: socioeconomic characteristics and preference judgments.

A multivariate clustering procedure was used to determine groups. Frequently used variables for defining socioeconomic groups were income, age, education, and race. Of the 12 system attributes, those selected most often to define preference groups were temperature control, automatic control, and vehicle privacy. However, socioeconomic groupings were stratified by a more consistent set of variables than the preference groups.

Mode choice was examined through the use of linear additive models. The predictor set for socioeconomic and preference groupings was composed of mode-dependent satisfaction judgments. These judgments were made with respect to system characteristics such as waiting time, comfort, and accessibility. The variability of mode-choice judgments was accounted for more accurately by models that stratified individuals into homogeneous population segments than by models that totally disaggregated individuals; this confirms the main hypothesis. Also, it was possible to account for a greater percentage of the mode choices with stratification by socioeconomic characteristics than by preference judgments of respondents. In general, the socioeconomic and preference groups used alternative predictor sets to explain their mode choices. Dual-mode transit was preferred to either personal rapid transit or people movers.

## FREIGHT MOVEMENT CONSIDERATIONS IN PLANNING DUAL-MODE SYSTEMS

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A transit system planned and designed for passengers is not necessarily suitable for carrying freight. Like passengers, freight moves in an urban area to reach a particular destination in a timely manner. The timeliness of these moves is often critical and can be translated into business costs and sales dollars. A transportation system to accommodate freight must be planned and designed to maintain or improve the quality and economics of service.

Dual-mode transportation for urban goods movement is an exciting idea. Special terminals located outside the central business district could consolidate general freight and specialized commodities for delivery to congested urban centers by dual-mode vehicles. These vehicles could pick up and transport shipments to the consolidation terminal for breakbulk and transfer to the private and for-hire carrier vehicles. This could significantly reduce the number of trucks on city streets and freeways and, in turn, free the flow of all traffic in the urban area.

To determine dual-mode system requirements will require that the shipping patterns of potential users of a dual-mode system be defined. The amount of freight, service demand, and local traffic conditions will determine the number of dual-mode vehicles necessary to provide the required level of service.

Although some people have suggested that freight could be carried in passenger vehicle compartments and that passenger vehicles could be converted to freight vehicles during off-peak hours, I think that such common use of dual-mode vehicles makes no sense. Special vehicles should be designed to maneuver in tight alleys and loading areas and to interface with the dual-mode facilities and equipment.

Moving freight, like passengers, improves certain requirements on any new transportation system. Moving freight by a dual-mode transit system would contribute to the solution of many urban problems and, therefore, should be considered in the planning, design, and economic analysis of such a system.