

tential catastrophies. The Bureau of Public Roads also has access to technical knowledge and experience in other Department of Transportation agencies by which these requirements could be written in a detailed and satisfactory manner.

It is apparent that the provision of such adequate regulations would restrict the use of airspace above and below highways, or increase the cost of such construction, or in some cases, require the rerouting of some types of carriers. Costly practices of this type, adopted in some modal operations to restrict the scope of catastrophe in crowded areas, are not high when weighed against the scope of potential disasters, and if they are adopted now will be far less costly than if mistakes must later be corrected.

Complete and absolute safety cannot be attained by regulation for all persons who may occupy airspace above or below highways, but the nature of the hazards must be specifically treated by requirements, and logical reasoning must be employed to determine what hazards are present and to insure that practical measures are taken to resolve these hazards.

We are dealing here not with the question of individual accidents, or hazards to individual persons, but with the likelihood of catastrophic accidents which may involve great numbers of deaths and injuries, and incur high property damage.

#### RECOMMENDATIONS

The National Transportation Safety Board recommends:

1. That there be established by the Federal Highway Administration interim specifications concerning the safety of facilities which will occupy airspace above and below Federally aided highways, pending the completion of studies hereinafter recommended and adoption of permanent specifications or regulations for such safety.

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2. That the Department, through the Federal Highway Administration and the Urban Mass Transportation Administration to the extent it may be concerned, initiate full-scale studies of the hazards and sources of potential catastrophe involved in the use of highway airspace. Such studies should include attention to the kind of occupancy of such structures, the ability of persons occupying the structures to escape, consideration of the emergencies which may develop, minimization of fire and/or explosion initiated in cargoes carried or accidentally released on the highway, and the routing of hazardous materials carriers away from highway airspace facilities, as justifiable. Attention also should be given to architectural and engineering design factors of airspace structures to afford all reasonable protection to occupants from highway hazards, and to the feasibility of restricting the use of highway airspace for such purposes as schools, hospitals, hotels, and auditoriums, where people congregate indoors in large numbers, and where the hazard of panic exists, apart from any direct hazard from fire, explosion, or contamination from released cargoes. In undertaking the studies, the technical knowledge of hazardous materials, and their hazard potential, available in other Offices and Administrations of the Department, including the Office of Hazardous Materials, should be utilized.
3. That the interim and permanent specifications and the product of the studies be disseminated to State, county, and city authorities for their use in providing adequate safety for highway airspace not subject to Federal aid.