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ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

SUBJECT: AIRPORT TERMINAL BUILDING DEVELOPMENT WITH FEDERAL PARTICIPATION 20591

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1. **PURPOSE.** This advisory circular contains guidance pertaining to Federal participation in airport terminal building construction under the provisions of the Airport and Airway Development Act, as amended.
2. **REFERENCES.**
 - a. Advisory Circular (AC) 00-2, Advisory Circular Checklist and Status of Federal Aviation Regulations, updated triannually, contains the listing of all current issuances of advisory circulars and changes thereto. It explains the circular numbering system and gives instructions for ordering advisory circulars that are for sale as well as those distributed free of charge.
 - (1) The following free advisory circulars may be obtained from the Department of Transportation, Publications Section, TAD-443.1, Washington, D.C. 20590.
 - (a) AC 00-2, Federal Register, Advisory Circular Checklist and Status of Federal Aviation Regulations.
 - (b) AC 150/5200-11, Airport Terminals and the Physically Handicapped.
 - (c) AC 150/5360-7, Planning and Design Considerations for Airport Terminal Building Development.
 - (2) The following advisory circular may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402:
 - (a) AC 150/5070-6, Airport Master Plans

b. The following FAA reports are for sale and may be obtained from the National Technical Information Service, Springfield, Virginia 22151:

- (1) Report No. FAA-RD-73-82, The Apron-Terminal Complex.
- (2) Report No. FAA-RD-75-191, The Apron and Terminal Building Planning Report.

3. HOW TO GET THIS PUBLICATION. Obtain additional copies of this circular, AC 150/5360-6, Airport Terminal Building Development with Federal Participation, from the Department of Transportation, Publications Section, TAD-443.1, Washington, D.C. 20590.



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- c. Eligible vehicles are those which are specially designed and are to be used to move passengers between public-use areas within or between terminal facilities or between these public-use areas and aircraft. The fact that monies are recovered to defray the costs of amortization, maintenance, and operations will not make such vehicles ineligible.
- 3. MULTIMODAL TERMINAL BUILDINGS. These buildings serve as an interchange for passengers and baggage between and among two or more modes of transportation, which operate on a scheduled basis under a franchise or similar authority granted by a state or local agency, with connecting route structures that extend beyond the local service area. Eligibility under ADAP will be limited to the nonrevenue producing public-use areas which are directly related to the movement of passengers and baggage in air commerce within the boundaries of the airport. The many facets involved in such a project will require extensive coordination with local and governmental bodies before an agreed upon plan can be developed.
- 4. SPECIAL REQUIREMENTS. At existing airports, all safety and security equipment required by rule or regulation at the airport must be acquired or contracted for before any commitment of Federal aid can be made for terminal building development. Access to the passenger enplaning and deplaning area of the airport must be provided for passengers enplaning and deplaning from general aviation aircraft. These items must be also be included in plans for new terminal building development.
- 5. FUNDING LIMITATIONS. Participation of the United States in the cost of a terminal building project is:
 - a. Limited to projects at air carrier airports;
 - b. Limited to 50 percent of the allowable cost of the nonrevenue producing public-use areas; and,
 - c. No more than 60 percent of the funds apportioned to the sponsor of an air carrier airport for enplanements at the airport in any one fiscal year. Reimbursement to cover costs incurred since July 1, 1970, and for which there is an outstanding indebtedness is authorized on the same basis.
- 6. RETROACTIVITY. Reimbursement to cover the immediate retirement of the principal of bonds or other evidences of indebtedness for terminal development carried out on or after July 1, 1970, is permitted if:
 - a. The sponsor certifies that he has met all safety and security certification requirements;

- b. The Secretary of Transportation determines that no project for airport development at such airport outside the terminal area will be deferred if such sums are used for retirement; and,
- c. No funds available for airport development under this program are obligated for any project for additional terminal development at such airport for a period of three years beginning on the date any such sums are used for such retirement.

7. PRORATION OF TERMINAL BUILDING DEVELOPMENT COSTS. Financial assistance for nonrevenue producing public-use areas may be determined as follows:

- a. Detailed Cost Analysis. This method of proration is particularly applicable to new terminal construction. A detailed analysis is undertaken by the sponsor's design consultant during the design stage and prepared on the basis of assigning costs to nonrevenue public-use areas under the guidelines outlined above. This analysis would also prorate costs for items such as site preparation, foundations, and utilities that contribute to public-use areas.
- b. Proration on a Square Footage Basis. This method is particularly applicable to determining retroactive financial assistance for existing terminal facilities. Construction costs are prorated on the ratio the square footage of the nonrevenue producing public-use area bears to the total usable square footage of the structure. The proration of costs for items that contribute to public-use areas such as site preparation, foundations, and utilities is based on this ratio.
- c. Final Eligible Costs. The amount eligible for Federal participation will be the total actual construction cost times the percent of total cost assigned to nonrevenue producing public-use components based on the above methods of analyses. The final amount of Federal participation will be subject to review and acceptance and limitations of the grant. It should be recognized that the methods of analysis and computation for obtaining prorated costs are at best imprecise. However, these methods provide for reasonable and equitable solutions. Attempts to relate proration to unobtainable degrees of precision can only frustrate the review and acceptance process.

8. COORDINATION. Each terminal is a unique facility that has been or will be developed in response to various constraints and demands. In many instances, the building design is dictated by the limitations imposed by airport boundaries or other physical restraints. It is impossible to develop simplified criteria to determine space requirements that can be applied uniformly and from which an elementary cost calculation can be made. The solution is not

susceptible to a "cookbook" approach. Therefore, it is important that an early understanding be reached on an approach to be followed in determining public-use areas. The approach should be initiated by the sponsor and coordinated with the FAA and other involved parties.

9. FACTORS AFFECTING THE DESIGN OF AIRPORT TERMINAL BUILDINGS. Federal participation in airport terminal development does not mean that any particular style of architecture will be imposed on airport sponsors and their designers. Each community should be free to select the architectural style and treatment that expresses local wishes and needs subject to the limitations set forth in subparagraph d below. Construction details should be in accord with appropriate local, state, or national building codes. These codes have wide acceptance within the building industry and reflect safe and prudent procedures that are applicable to all types of structures. However, the designer must give special attention to security consideration. He should locate lockers and incorporate design features that will minimize the potential for bomb injury to the public, and he should evolve a design that will provide for the effective control of passenger flow in such areas. The designer should also make provision for accommodation of the handicapped. Other factors which should be considered in the planning and design of terminal area development are identified below. These are discussed in detail in FAA Advisory Circular (AC) 150/5360-7, Planning and Design Considerations for Airport Terminal Building Development.

- a. Forecasts of Aviation Demand. Terminal development should be designed for peak hour demands forecasted to occur at an appropriate time period in the future. The degree of providing for projected requirements should be predicated on present cost compared to subsequent expansion cost, inflation, and overall feasibility. Short, intermediate, and long-range forecasts covering enplaned passengers, aircraft mix, aircraft operations, and airport access data should be considered in arriving at the timing and extent of construction. Wherever possible the plan selected should provide for expansion, and the sponsor should assure that available land is reserved for this purpose. General guidance in developing forecasts for terminal development is contained in Chapter 1 of AC 150/5360-7.
- b. Approximations of Terminal Area Space Needs. Forecasts are used to establish the relationships between demand and capacity from which initial approximations of gate requirements and terminal space can be determined. These approximations are then used to analyze various terminal types or concepts which best fit the needs of a particular airport. General guidance for approximating gate requirements and terminal space is contained in Chapter 2 of AC 150/5360-7.

- c. Terminal Functions and Concepts. After approximations of gate and terminal space requirements have been developed, various terminal concepts should be analyzed to determine which best fits the needs of a particular airport. Types to be considered are the simple terminal concept consisting of a single waiting and ticketing area, the pier concept, the satellite concept, the linear concept, and the transporter concept. Some terminal area complexes are made up of a series of unit terminals which combine the various concepts. The functions of various components of the terminal should be examined in selecting a terminal concept. Selection should be based on concept studies and drawings. General guidance on the selection of a terminal concept is contained in Chapter 3 of AC 150/5360-7.
- d. Design Details. After a terminal concept has been selected and concept drawings have been developed, details of spatial requirements and design for particular components of the terminal complex, including complementary landscaping, should be developed. In design, airport sponsors and their architects and engineers should carefully coordinate their efforts with the FAA, the air carriers, and other users to be responsive to the projected needs of the community. Terminal finishes should be subject to architectural judgment and local needs. Factors to be considered in design should include construction, maintenance, and operating costs. The facility should be energy efficient to the extent practical. If the materials selected are commonly employed in the construction of public buildings, objections should not be raised because other materials are less expensive. General guidance for developing design details of specific areas within the terminal is contained in Chapter 4 of AC 150/5360-7.

10. APPLICATION OF FEDERAL GUIDANCE. As individual areas are considered in computing Federal participation, "Gray Zones" and ambiguities may unfold. In each instance, a determination for that particular situation will have to be made. The FAA and sponsors should not spend extensive effort in solving problems and answering questions about terminal proposals that are hypothetical or cannot be financed. As a general rule the design should be functional and economical. The community should have the freedom to select the style and treatment best suited to meet local needs. It must be clearly understood that there is no desire to impose any particular style of architecture on airport sponsors and their designers. Accordingly, the material which is presented in this advisory circular and in AC 150/5360-7 should only be considered as general guidance to the aviation community on airport terminal buildings. The final review and approval of Federal assistance for these projects must depend on the rationale presented by the airport sponsor and his designer after careful coordination with all parties involved.

11. RELATED GUIDANCE MATERIAL. Much of the guidance in this advisory circular has resulted from the condensation of material contained in Advisory Circular 150/5070-6, Airport Master Plans, FAA Report No. FAA-RD-73-82, The Apron-Terminal Complex, and FAA Report No. FAA-RD-75-191, the Apron and Terminal Building Planning Report. These documents provide more detailed information on the planning and design of the terminal complex and should be used in conjunction with other publications and criteria related to this subject. Additional guidance material such as Advisory Circular 150/5200-11, Airport Terminals and the Physically Handicapped, should be consulted regarding accommodation for the handicapped. In the final analysis, the basic responsibility lies with the airport sponsor for selecting the criteria which best suits the solution of problems and design for the particular airport involved.

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