



TAD-4946
AC NO: 150/5090-2

DATE: 25 Jun 71

ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

SUBJECT: NATIONAL AIRPORT CLASSIFICATION SYSTEM
(AIRPORT SYSTEM PLANNING)

1. PURPOSE. This advisory circular sets forth the new national airport classification system. The system is designed for use in the identification and classification of airports within the National System of Airports and for use as a planning tool in long-range airport system planning. As part of its continuing effort to update the airport system planning process, the Federal Aviation Administration (FAA) is implementing this classification system to appropriately identify airports within the revised National Airport System Plan, thus offering a greater opportunity for utilizing a systems approach to long-range airport planning.
2. BACKGROUND.
 - a. National System of Airports. The National System of Airports consists of those public, civil, and joint use (military/civil) airport facilities within the United States and its territories considered necessary to provide a system of airports adequate to anticipate and meet the needs of civil aeronautics. By law, these airports are identified periodically in the FAA's National Airport System Plan (NASP) which was formerly the National Airport Plan (NAP).
 - b. Previous Classification.
 - (1) Past national classification criteria categorized airports by the two principal users in the system:
 - (a) Airports accommodating air carrier service, and
 - (b) Airports used exclusively by general aviation.

- (2) Airports were further identified by the type of airline service offered:
 - (a) Civil Aeronautics Board (CAB) certificated route trunk carriers (and for both trunk and local carriers where combined), and
 - (b) Local carriers, intra-Alaska or intra-Hawaii carriers, exclusively.
- (3) Airports developed solely for use by general aviation aircraft were identified by type: General Transport, Basic Transport, General Utility, Basic Utility, STOL ports, and Heliports.
- (4) This system of classifying airports was used in past editions of the National Airport Plan and has been used by others in the aviation community. As a systems analysis tool for long-range planning of the national airport system, it better identified operational roles rather than the functional role of an airport.

c. New Classification. The new national airport classification system is based on the concept that all airports in the system have a functional role - this role being reasonably discernible by what the landing facility currently does or is projected into the future as having a need to accommodate in terms of its level of public service (enplaning passengers) and its level of aeronautical operational density (aircraft operations). The new classification system will reflect both the current level of service provided by the airports and projected demand for development purposes rather than merely the type of users. Categories of airports under the new classification system can be developed further to provide additional information on facility requirements of the total airport. Included could be such features as the terminal area, runway, separation criteria, geometric considerations, approaches, landing aids, etc., all based on a specific system requirement for airports in that category. Anticipated uses of the classification system are:

- (1) The identification of present system facilities and future system requirements;
- (2) Evaluations of both present and future needs from a national system planning point of view; and
- (3) Guidance for minimum design and safety standards for each of the airport subsystems.

3. SYSTEM DESCRIPTION. The new national airport classification system consists of three distinct subsystems of airports, differentiated by level of public service, that is, the number of enplaning passengers that are, or planned to be, accommodated by the airports. Each subsystem is further classified into three levels of aeronautical operational density (aircraft operations) for planning purposes. This is shown in Figure 1. The following paragraphs discuss each of the major subsystems.

a. The Primary System.

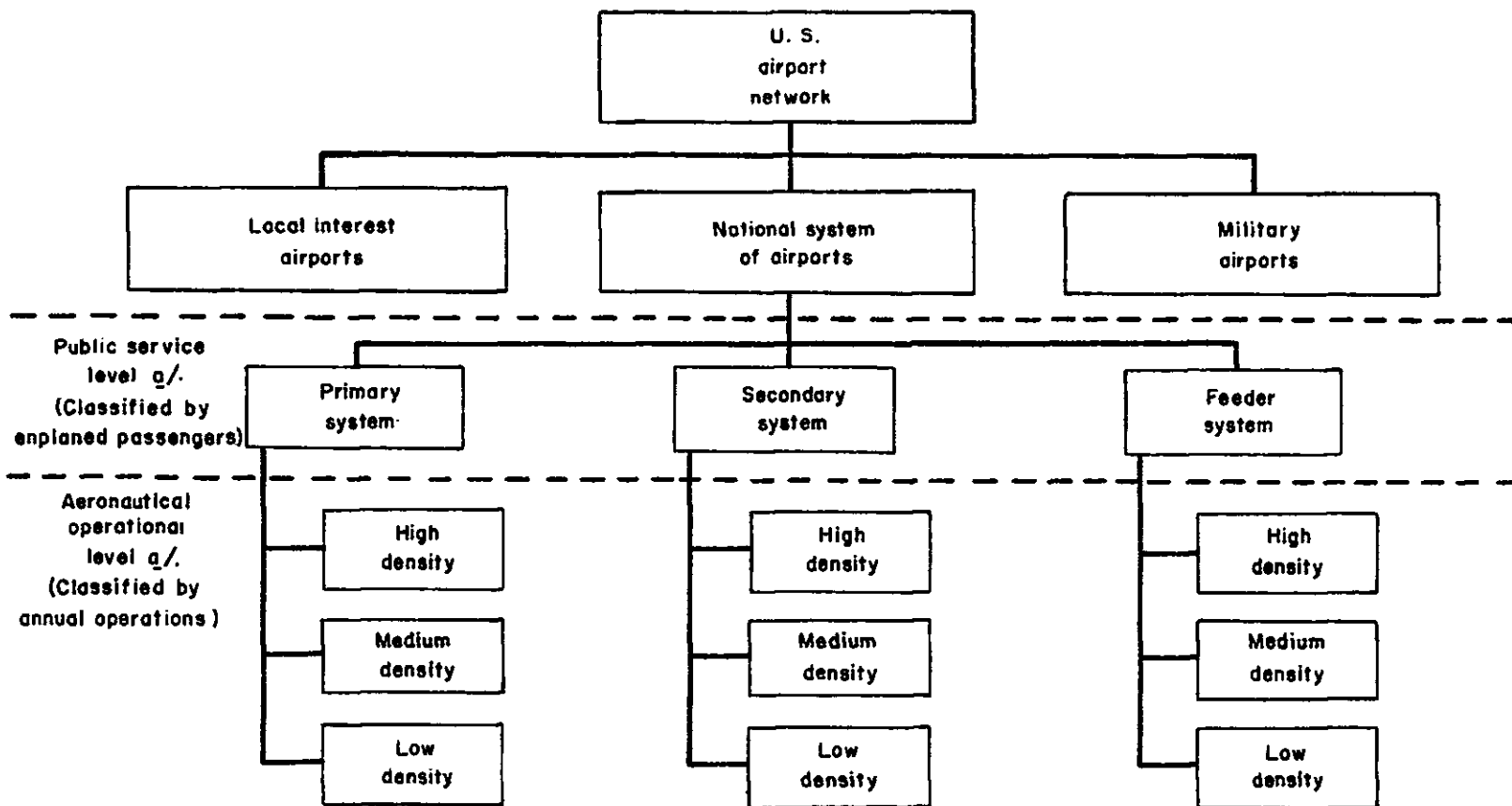
- (1) This system identifies airports with the highest level of public service within the national system. Therefore, it is considered important to the national air transportation system. This system consists of three subcategories representing various levels of aeronautical operational density primarily identified with air carrier served airports. The operational density levels are relevant to the runway capacity requirements of the airport.
- (2) Airports included in this category will, in most cases, be located in the largest of our metropolitan areas. The system will serve high to medium flows of intercity and international aeronautical needs, with airport facilities capable of handling the largest and most sophisticated aircraft in the air carrier and general aviation fleets.
- (3) The ideal airport configuration for each subcategory will normally be typified by a parallel runway system (with the exception of STOL operations and exclusion of crosswind runways) with adequate separation to permit simultaneous operations under IFR weather conditions and a terminal with a capacity for high-density passenger flow.
- (4) Each of the airports in the Primary System will have a requirement for an airport traffic control tower and an instrument approach procedure. In addition, for STOL service there will be a requirement for offset approaches to permit either use of separate airspace in terminal areas of conventional airports or avoidance of obstructions and populated areas at city-center locations.

b. Secondary System.

- (1) The Secondary System identifies the next highest level of public service airports in the national system. It consists of those airports defined as having a secondary public service role and is also divided into three operational density subcategories.

FIGURE 1

NATIONAL SYSTEM OF AIRPORTS CLASSIFICATION SYSTEM



a/ See Figure 2.

- (2) The role of airports in this subsystem will dictate a configuration characterized by at least a single full-length runway (excluding crosswind runways), as opposed to parallel runways at the Primary System airports. Where additional capacity is needed, the capacity may be provided for with a short runway of sufficient length to meet that need. Thus, airports in the Secondary System may in some cases have a requirement for a short runway as a reliever to the principal runway.
- (3) The airports in this category are typified by a medium to low density passenger flow and terminal facility requirements, with a runway length based on a critical length of haul that may vary from short to long range.
- (4) Usually the airports serving general aviation only in this category function principally as relievers to the airports used by air carriers in the larger communities. Aeronautical demand in some of these cases might be typified by a justification for service by large business transports or business jets; however, based on today's experience the percentages may relatively be very low.
- (5) The airport activity levels of the Secondary System will, in most cases, justify an airport traffic control tower and landing aids under currently applicable criteria.

c. Feeder System.

- (1) The Feeder System category identifies the lowest public service level for airports within the national system. Airport facility requirements are less than for airports in the first two systems due to the smaller amounts of activity to be accommodated. Although of lower level of activity, the bulk of the air carrier served airports are in this system category. These airports exhibit differences principally in the size of the passenger terminals and runway lengths.
- (2) Airport configuration for this category will be typified by a single runway (excluding crosswind runways) with associated taxiways and a low density passenger terminal. A large proportion of airports in this category will have need for electronic landing aids, with only the high and medium aeronautical operational density subcategories having a requirement for a control tower.

- (3) Critical aircraft types for the air carrier served airports will usually be twin jets for the DC-9, B-737 type operated over short stage lengths. Exceptions to this may be required where, because of airline routings, longer stage lengths are necessary.
- (4) At "smaller" communities, general aviation activity demands on the airport may far surpass those imposed by air carrier service. However, the design configuration of the airport, where served by air carrier, is usually based on the air carrier used aircraft because of its greater facility requirements.
- (5) The airports exclusively serving general aviation within the Feeder System are typified by a low-density, single-runway airport similar in configuration to the "general utility category." They can accommodate about 95 percent of the general aviation fleet up to 12,500 pounds gross weight.

4. CLASSIFICATION CRITERIA.

- a. The aeronautical activity levels selected for the classification categories are fairly definitive of the size of airports presently or required in the system, particularly for long-range planning purposes. Adjustments to these limits may be made in the future, and possibly additional categories added, following further analyses on the effect of an airport's role on facility requirements.
- b. Aeronautical activity levels in terms of enplaning passengers and total aircraft operations are considered most representative of intercity transportation demand and are types of activity for which statistics are normally collected and forecast. This was, in part, the basis for the selection of aeronautical activity levels to differentiate the airport classification categories discussed herein. The activity levels selected for differentiating the categories are presented in the following figure.

**FIGURE 2. AERONAUTICAL ACTIVITY LEVELS FOR
FUNCTIONAL ROLE AIRPORT CLASSIFICATION SYSTEM**

Airport Category	(NASP Codes)	Public Service Level (Annual Enplaned Passengers)	Aeronautical Operational Density (Annual Aircraft Operations)
<u>Primary System</u>		More than 1,000,000	
High Density	(P1)		More than 350,000
Medium Density	(P2)		250,000 to 350,000
Low Density	(P3)		Less than 250,000
<u>Secondary System</u>		50,000 to 1,000,000	
High Density	(S1)		More than 250,000
Medium Density	(S2)		100,000 to 250,000
Low Density	(S3)		Less than 100,000
<u>Feeder System</u>		Less than 50,000	
High Density	(F1)		More than 100,000
Medium Density	(F2)		20,000 to 100,000
Low Density	(F3)		Less than 20,000

5. CRITERIA FOR FUNCTIONAL ROLE AIRPORT CATEGORIES.

- a. Design criteria relating to each of the functional role airport categories described in paragraph 3 have not been fully developed. When complete, the criteria may provide design guidance for the total airport including its airfield and terminal areas. These will be based on requirements imposed by the functional role of the airport in the overall system and may include such factors as:

- (1) Aeronautical activity level in enplaned passengers.
- (2) Aeronautical activity level in aircraft operations.
- (3) General aviation or air carrier service role.
- (4) Critical types of aircraft which use or which are projected to use the airport.
- (5) Significant length of haul of departing aircraft.
- (6) Requirement for acceptance of aircraft under VFR and IFR conditions.

b. These factors provide, either singly or in various combinations, the basic considerations in establishing airport design requirements.

6. AGENCY IMPLEMENTATION. The new classification system is being implemented by Airports Service in preparation of the revised DOT/FAA National Airport System Plan. Its influence will be seen primarily in the long-range system planning aspect of the Plan. The revised NASP will include classification codes for each airport therein in accordance with its present and future system roles. It will be possible to quickly ascertain the current and projected activity levels of any airport within the national system of airports. The classification system should be of significant value to airport planners who must translate aeronautical demand into airport development requirements.
7. HOW TO OBTAIN ADDITIONAL COPIES OF THIS ADVISORY CIRCULAR. Additional copies of this circular, AC 150/5090-2, National Airport Classification System (Airport System Planning), may be obtained from the Department of Transportation, Distribution Unit, TAD-484.3, Washington, D. C. 20590.



CLYDE W. PACE, JR.
Acting Director, Airports Service