

Each terminal area is served by access roads and parking areas designed to accommodate the various vehicles attracted to and used at the airport.

The airports comprising the national system serve both air carrier aviation and general aviation. General aviation is the term applied to that part of civil aviation engaged in pleasure, instructional, and commercial and business flying other than air carrier. The extent of activities within this segment of civil aviation precludes listing all the purposes and missions it fulfills.

Airport capacity is usually measured in terms of the number of air operations per unit of time. An air operation is defined as the takeoff or landing of one airplane. The runway system is therefore the major controlling element of the airport facility complex which influences airport capacity. In this context, a single runway has a capacity of from 140,000 to 150,000 annual operations depending upon the type of aircraft involved. Airport capacity can be increased by the construction of additional runways. The relative orientation of the runways in the airfield configuration greatly influences the increased capacity realized by the construction of additional runways. For instance, adding a runway to a 1 runway airport may increase the capacity to only 160,000 annual operations if the 2 runways intersect near their midpoints. If, on the other hand, the 2 runways intersect at their ends and the operations are away from the intersection 100 percent of the time, the capacity is increased to between 230,000 and 270,000 annual operations depending on the type of aircraft involved. The optimum two runway configuration for capacity is referred to as open-parallel runways. In this instance, the runways are separated at least 5,000 feet with the passenger terminal between the runways. The capacity for this scheme ranges from 300,000 to 400,000 annual operations depending on the type of aircraft involved. There are many variations of the examples cited with corresponding varying capacities.

(b) *Standards of Performance*

The standards to which airports in the national system are designed and constructed depend on the type of aircraft used to provide the service desired. These aircraft range from small single-engine, piston-powered general aviation aircraft weighing less than 12,500 pounds, to large multiengine turbojet, high-performance aircraft currently weighing up to 325,000 pounds. The runway length provided for these aircraft at sea level and 59° F. ranges from approximately 1,500 feet to as much as 10,500 feet. These lengths are increased for elevation and temperature above the standards of sea level and 59° F. The pavement strength of the entire airfield and the runway length are predicated on the specific critical airplane in the group of aircraft for which the airport is designed. The remaining standards, i.e., runway and taxiway widths and clearances, traverse and longitudinal grades, and approach clearances, are in turn related to the runway length provided. Visual aids including controls and power supply are provided to permit continuance of operations under adverse weather conditions.