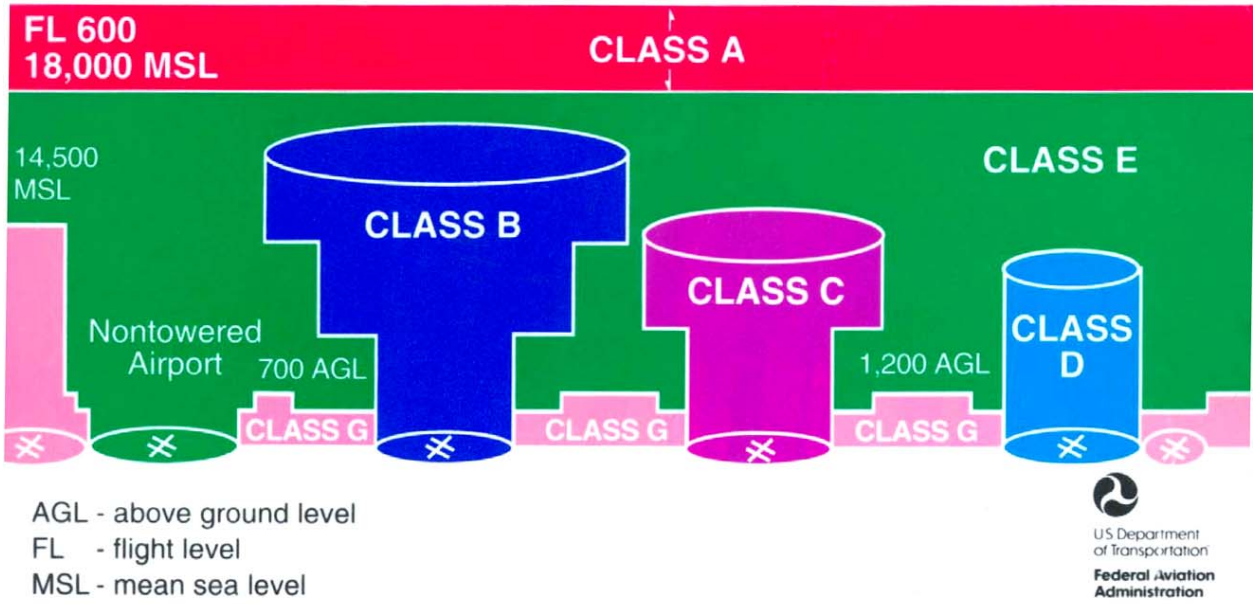
# APPENDIX D
# NATIONAL AIRSPACE SYSTEM

The national airspace system consists of a network of navigational aids and a number of air traffic control facilities designed to operate in conjunction with the various defined classes of airspace. These classes are subdivided into controlled, uncontrolled, special use, and other airspace categories.




## D.1 CONTROLLED AIRSPACE

Controlled airspace includes all airspace categorized as either Class A, Class B, Class C, Class D, or Class E airspace. While operating in controlled airspace pilots are subject to certain operating rules as well as pilot qualification and aircraft equipment requirements. In accordance with each airspace classification, ATC service is provided to aircraft operating under instrument flight rules (IFR) and visual flight rules (VFR).

### D.1.1 Class A Airspace

Class A airspace includes the airspace over the United States and the airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous states, from 18,000 feet mean sea level (MSL) up to and including 60,000 feet MSL, also known as flight level 600 (FL600).

The Federal Aviation Regulations (FAR) requires all persons operating an aircraft in Class A airspace to be flying under IFR. Operations in Class A airspace can only be conducted under an air traffic control (ATC) clearance received prior to entering the airspace and each aircraft must be equipped with a two-way radio capable of communicating with ATC on an assigned frequency and an operating transponder. Class A airspace is not depicted on aeronautical charts.

### D.1.2 Class B Airspace

Class B airspace typically has two or more levels of airspace that are portrayed as a series of interconnected circular patterns around primary airports. Terrain, the amount and flow of air traffic, and the location of other airports all influence the design of Class B airspace. Generally, Class B airspace begins at the surface and extends vertically to 10,000 feet MSL surrounding the nation's busiest airports in terms of IFR operations or passenger enplanements. The floor and ceiling of each layer of Class B airspace are depicted on charts by MSL altitudes with each layer serving as a building block for funneling air traffic into the terminal area.

Aircraft desiring to operate in Class B airspace must receive clearance from ATC and their aircraft must have a two-way radio capable of communications on an assigned frequency, an operable transponder with automatic altitude reporting equipment, and a VOR or TACAN receiver for IFR operations. Class B airspace is charted on Sectional Aeronautical Charts, IFR Enroute Low Altitude Charts, and Terminal Area Charts with a solid blue circle.

### D.1.3 Class C Airspace

Class C airspace surrounds those airports that have an operating control tower serviced by radar approach control and facilitate a given number of annual IFR operations or passenger enplanements. Class C airspace is individually tailored for each airport; however, Class C airspace generally consists of a five nautical mile radius core area that extends from the surface to 4,000 feet above the ground level (AGL) and a ten nautical mile radius shelf that normally extends from 1,200 feet to 4,000 feet above the airport elevation. The outer shelf usually extends out to 20 nautical miles from the primary airport.

Aircraft desiring to operate within Class C airspace must establish and maintain two-way radio communications with ATC prior to operations. Class C airspace is charted on Sectional Aeronautical Charts, IFR Enroute Low Altitude charts, and Terminal Area Charts with solid magenta circle.

### D.1.4 Class D Airspace

Class D airspace normally extends from the surface up to approximately 2,500 feet AGL and surrounds those airports with an operating control tower that does not provide radar service. This airspace is classified as Class D only when the tower is operational.

Prior to operating within Class D airspace, aircraft must establish and maintain two-way radio communications with ATC. The lateral dimensions of Class D airspace are based on the instrument procedures for which the controlled airspace is established. Class D airspace is depicted on Sectional Aeronautical Charts and Terminal Charts with a segmented blue circle and on IFR En Route Low Altitude Charts with a boxed [D].

### D.1.5 Class E Airspace

Class E airspace consists of all controlled airspace that is not associated with Class A, Class B, Class C, or Class D airspace. This airspace is typically found around airports that do not have an operating control tower or en route airspace above 700 feet AGL or 1,200 feet AGL. The weather minimums a pilot must maintain when operating in Class E airspace is dependent upon whether they are operating at an altitude below 10,000 feet MSL or at or above 10,000 feet MSL.

While direction communications are not required to operate within Class E airspace under VFR, aircraft desiring to operate under IFR must contact the area air traffic control facility for clearance information. Class E airspace below 14,500 feet MSL is charted in a variety of forms on Sectional Aeronautical Charts, Terminal Charts, World Charts, and IFR En Route Low Altitude Charts.

Victor airways are also designated Class E airspace and are based on VOR or VORTAC navigational aids. These airways usually extend to four nautical miles on each side of the airway centerline and, unless otherwise indicated, extend from 1,200 feet AGL up to, but not including, 18,000 feet MSL.

## D.2 UNCONTROLLED AIRSPACE

Uncontrolled airspace is designated Class G airspace. Typically, Class G airspace includes all airspace not classified as Class, A, Class B, Class C, Class D, or Class E airspace. Whereas ATC services are provided with controlled airspace, no air traffic control services are provided within Class G airspace. Class G airspace typically extends from the surface to the base of the overlying controlled airspace, which is normally 700 or 1,200 feet AGL. In some areas of the western United States and Alaska, Class G airspace may extend from the surface to 14,500 feet MSL.

Specific VFR weather minimums apply in Class G airspace below 1,200 feet AGL, between 1,200 feet AGL and 10,000 feet AGL, and above 10,000 feet AGL. The minimums a pilot must maintain are also dependent upon whether operations are conducted during the day or night.

## D.3 SPECIAL USE AIRSPACE

Special use airspace consists of areas in which activities within the airspace must be confined because of their nature, or limitations are imposed upon aircraft operations, which are not part of the specific activities taking place within the segregated area. With the exception of Controlled Firing Areas, utilized during military training or testing exercises, special use airspace areas are depicted on aeronautical charts. The following list identifies the different types of special use airspace.

- Alert Areas are depicted on aeronautical charts to inform nonparticipating pilots of areas that may contain a high volume of pilot training or unusual types of aerial activity.
- Controlled Firing Areas contain activity, which if not conducted in a controlled environment, could be hazardous to nonparticipating aircraft.
- Military Operations Areas consist of airspace with defined vertical and lateral limits established for the purpose of separating certain military training activities from civilian air traffic.
- National Security Areas consist of airspace with defined vertical and lateral dimensions established at locations where there is a requirement for increased security and safety of ground facilities.
- Prohibited Areas contain airspace of defined dimensions identified by an area on the surface of the earth within which the flight of aircraft is prohibited. In addition to being depicted on aeronautical charts, Restricted Areas are published in the Federal Register and constitute FAR Part 73.
- Restricted Areas contain airspace identified by an area on the surface of the earth within which the flight of aircraft, while not wholly prohibited, is subject to restrictions. Restricted Areas denote the existence of unusual, often invisible hazards to aircraft such as artillery firing, aerial

gunnery, or guided missiles. Similar to Prohibited Areas, Restricted Areas are published in the Federal Register and constitute FAR Part 73.

- Warning Areas are airspace extending three nautical miles outward from the coast of the United States. A Warning Area contains activity deemed hazardous to nonparticipating aircraft. Furthermore, a Warning Area may be established over domestic waters, international waters or a combination of both.

## D.4 OTHER AIRSPACE

Airspace designated as Other Airspace is primarily composed of airport advisory areas and military training routes. All military training routes positioned above 1,500 feet AGL are depicted on IFR Low Altitude Enroute Charts. These routes have been established to provide a means for military aircraft to practice low level combat tactics. Generally, military training routes are established below 10,000 feet MSL for operations at speeds in excess of 250 knots.

Airport Advisory Areas extend 10 statue miles from airports where there is a flight service station located on the field and no operating tower. The flight service station provides advisories on wind direction and velocity, favored runways, altimeter setting, and reported traffic within the area.

In addition to military training routes and Airport Advisory Areas, other airspace also includes temporary flight restrictions, flight limitations and restrictions, and parachute jump aircraft areas. Temporary flight restrictions are imposed by the FAA to protect persons or property on the surface or in the air from a specific hazard or situation. Flight limitations and restrictions are normally issued in the proximity of space flight operations and Presidential or other government parties. Parachute jump areas that are used on a frequent basis and have existed for a period of at least one year are depicted on aeronautical charts.