

APPENDIX H
AIRSPACE MANAGEMENT

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Controlled Airspace is defined in Federal Aviation Administration (FAA) Order 7400.2. It is airspace of defined dimensions within which Air Traffic Control (ATC) service is provided to Instrument Flight Rule (IFR) flights and to Visual Flight Rule (VFR) flights in accordance with the airspace classification. For IFR operations in controlled airspace, a pilot must file an IFR flight plan and receive an appropriate ATC clearance.

Controlled airspace in the United States is designated as Class A, B, C, D, and E. Each Class B, C, and D airspace designated for an airport contains at least one primary airport around which the airspace is designated.

Class A airspace, generally, is that airspace from 18,000 feet above mean sea level (MSL) up to and including Flight Level (FL) 600. Flight levels are altitudes MSL based on the use of a directed barometric altimeter setting, and are expressed in hundreds-of-feet. Therefore, FL 600 is equal to approximately 60,000 feet MSL. Class A airspace includes the airspace overlying the waters within 12 nautical miles (NM) of the coast of the 48 contiguous States and Alaska (DOT 2001).

Class B airspace, generally, is that airspace from the surface to 10,000 feet MSL around the nation's busiest airports. The actual configuration of Class B airspace is individually tailored and consists of a surface area and two or more layers, and is designed to contain all published instrument procedures (DOT 2001).

Class C airspace, generally, is that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control (RAPCON), and that have a certain number of IFR operations or passenger enplanements. Although the actual configuration of Class C airspace is individually tailored, it usually consists of a surface area with a 5 NM radius, and an outer circle with a 10 NM radius that extends from 1,200 feet to 4,000 feet above the airport elevation (DOT 2001).

Class D airspace, generally, is that airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be designated as Class D or Class E airspace (DOT 2001).

Class E airspace is controlled airspace that is not Class A, B, C, or D. There are seven types of Class E airspace, as described below.

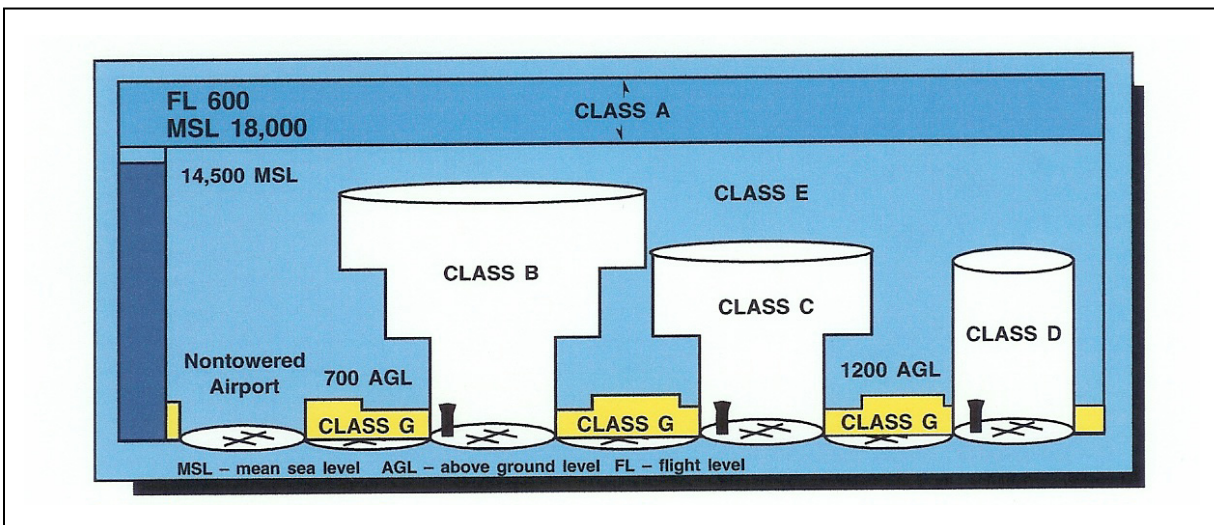
- **Surface Area Designated For An Airport.** When so designated, the airspace will be configured to contain all instrument procedures.
- **Extension To A Surface Area.** There are Class E airspace areas that serve as extensions to Class B, C, and D surface areas designated for an airport. This airspace provides controlled airspace to contain standard instrument approach procedures without imposing a communications requirement on pilots operating under VFR.

- **Airspace Used For Transition.** There are Class E airspace areas beginning at either 700 or 1,200 feet above ground level (AGL) used to transition to/from the terminal or en route environment.
- **En Route Domestic Airspace Areas.** These areas are Class E airspace areas that extend upward from a specified altitude to provide controlled airspace where there is a requirement for IFR en route ATC services, but where the Federal airway system is inadequate.
- **Federal Airways.** Federal Airways (Victor Routes) are Class E airspace areas, and, unless otherwise specified, extend upward from 1,200 feet to, but not including, 18,000 feet MSL.
- **Other.** Unless designated at a lower altitude, Class E airspace begins at 14,500 feet MSL to, but not including 18,000 feet MSL overlying: a) the 48 contiguous States, including the waters within 12 miles from the coast of the 48 contiguous States; b) the District of Columbia; c) Alaska, including the waters within 12 miles from the coast of Alaska, and that airspace above FL 600; d) excluding the Alaska peninsula west of 160°00'00" west longitude, and the airspace below 1,500 feet above the surface of the earth unless specifically so designated.
- **Offshore/Control Airspace Areas.** This includes airspace areas beyond 12 NM from the coast of the United States, wherein ATC services are provided (DOT 2001).

Airspace that has not been designated as Class A, B, C, D, or E airspace is **Uncontrolled Airspace (Class G)** (DOT 2001).

These airspaces are shown graphically in Figure 1.

Figure 1. Controlled / Uncontrolled Airspace



Source: DOT 2003

Airspace for Special Use (ASU) is used to collectively identify non-SUA assets. It is of defined dimensions wherein activities must be confined because of their nature, and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. ASU includes Military Training Routes (MTRs) (Instrument Routes [IR]/Visual Routes [VR]), Air Traffic Control Assigned Airspace (ATCAA), aerial refueling track/anchors (AR), slow routes (SR), and low-altitude tactical navigation areas.

Military Operations Area (MOA) is airspace of defined vertical and lateral limits established outside Class A airspace to separate and segregate certain non-hazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted (P/CG 2004). Class A airspace covers the continental U.S. and limited parts of Alaska, including the airspace overlying the water within 12 nautical miles (NM) of the U.S. coast. It extends from 18,000 feet above mean sea level (MSL) up to and including 60,000 feet MSL (P/CG 2004). MOAs are considered “joint use” airspace. Non-participating aircraft operating under VFR are permitted to enter a MOA, even when the MOA is active for military use. Aircraft operating under IFR must remain clear of an active MOA unless approved by the responsible ARTCC. Flight by both participating and VFR non-participating aircraft is conducted under the “see-and-avoid” concept, which stipulates that “when weather conditions permit, pilots operating IFR or VFR are required to observe and maneuver to avoid other aircraft. Right-of-way rules are contained in CFR Part 91” (P/CG 2004). The responsible ARTCC provides separation service for aircraft operating under IFR and MOA participants. The “see-and-avoid” procedures mean that if a MOA were active during inclement weather, the general aviation pilot could not safely access the MOA airspace.

Air Traffic Control Assigned Airspace (ATCAA) is airspace of defined vertical and lateral limits, assigned by Air Traffic Control (ATC), for the purpose of providing air traffic segregation between the specified activities being conducted within the assigned airspace and other IFR air traffic (P/CG 2004). This airspace, if not required for other purposes, may be made available for military use. ATCAAs are frequently structured and used to extend the horizontal and/or vertical boundaries of MOAs.

Restricted Area is designated airspace that supports ground or flight activities that could be hazardous to non-participating aircraft. A Restricted Area is airspace designated under 14 Code of Federal Regulations (CFR) Part 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated “joint-use” and IFR/VFR operations in the area may be authorized by the controlling ATC facility when it is not being utilized by the using agency (P/CG 2004).

Military Training Routes (MTRs) are flight corridors developed and used by the DoD to practice high-speed, low-altitude flight, generally below 10,000 feet MSL. Specifically, MTRs are airspace of defined vertical and lateral dimensions established for the conduct of military flight training at airspeeds in excess of 250 knots indicated airspeed (KIAS) (P/CG 2004). MTRs are developed in accordance with criteria specified in FAA Order 7610.4 (DoD 2004). They are described by a centerline (often with defined horizontal limits on either side of the centerline) and vertical limits expressed as minimum and maximum altitudes along the flight track. MTRs are identified as Visual Routes (VR) or Instrument Routes (IR).

VRs and IRs are used by DoD and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training. VRs are under VFR conditions (usually below 10,000 feet MSL) at airspeeds in excess of 250 KIAS (P/CG 2004). IRs are used by DoD,

including associated Reserve and Air Guard units, for the purpose of conducting low-altitude navigation and tactical training in both IFR and VFR weather conditions usually below 10,000 feet MSL at airspeeds in excess of 250 KIAS (P/CG 2004).

Special Use Airspace (SUA) is airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not part of those activities. Types of SUA include Alert Areas, Controlled Firing Areas, MOAs, Prohibited Areas, Restricted Areas, and Warning Areas.

REFERENCES

- U.S. Department of Transportation (DOT), Federal Aviation Administration (FAA). 2006. Aeronautical Information Manual, February 16, 2006. Headquarters Air Combat Command (ACC) Page 12, Supplement 1 to Air Force Instruction 13-201, Air Force Airspace Management, 24 June 1999.
- U.S. Department of Transportation (DOT), Federal Aviation Administration (FAA). 2003. FAA-H-8083-25, Pilot's Handbook of Aeronautical Knowledge.
- U.S. Department of Transportation (DOT), Federal Aviation Administration (FAA). 2001. FAA Order 7400.2E, Procedures For Handling Airspace Matters. June 4.