UNITED STATES OF AMERICA
CIVIL AERONAUTICS BOARD
WASHINGTON, D. C.

Civil Air Regulations Amendment 60-7
Effective: November 1, 1957
Adopted: October 1, 1957

AIR TRAFFIC RULES

CONTROL OF AIRSPACE AT HIGH ALTITUDES

Part 60 of the Civil Air Regulations contains the air traffic rules which apply to all aircraft operated anywhere in the United States. Under Part 60, the Administrator has designated those areas in which he presently exercises control over air traffic as control areas or control zones. Currently effective § 60.60 of Part 60 defines a "control area" as an airspace of defined dimensions, designated by the Administrator, extending upwards from an altitude of 700 feet above the surface, within which air traffic control is exercised, and a "control zone" as an airspace of defined dimensions, designated by the Administrator, extending upwards from the surface, to include one or more airports, and within which rules additional to those governing flight in control areas apply for the protection of air traffic.

The consistent and rapid growth of air traffic, coupled with the greatly increased speed ranges inherent in the advanced type of aircraft now in use, has resulted in a considerable strain on the effectiveness of present-day air traffic control services to handle safely and expeditiously the volume of air traffic. Today the capacity of important parts of the Federal airway system is at times overtaxed. In certain areas, the volume and nature of the traffic are such that the airway facilities and services cannot insure its efficient flow in bad weather. Even while the capacity of the system is thus being overtaxed by bad weather operations alone, yet another demand is becoming increasingly apparent; namely, en route control of traffic in good weather. This demand arises from the higher speeds of many aircraft which make avoidance of collision by sight more difficult, and from the great increase in traffic volume. In order to cope with the demands being made on the present air traffic control system and to provide for future requirements, the Civil Aeronautics Administration has developed a comprehensive plan calling for improved and expanded air traffic control services. In formulating this plan, the Administrator has found that improved effectiveness of the air traffic control system can be gained in two ways: (1) By extending the system framework, and (2) by increasing the ability of air traffic control facilities to handle safely a greatly increased flow of traffic. The former is possible by enlarging the areas in which air traffic control is exercised; the latter by improved equipment and techniques.

Since it is axiomatic that the highest aircraft speeds are encountered at high altitude, it is apparent that the traffic separation problem inherent in operations at high speeds should be resolved, at least initially, at high altitudes. It is, therefore, planned to expand the system framework so as to include all that airspace at and above 24,000 feet, exclusive of prohibited and restricted areas, as airspace within which air traffic control is exercised. Although it is not contemplated that all aircraft operating in such airspace will be subject to the instrument flight rules, it is clear that this initial implementation will enable the Administrator to determine what facilities and control techniques will be required to accommodate all traffic.

It is envisaged that the plan will be implemented in two phases; the first will include that airspace at and above 24,000 feet, exclusive of prohibited and restricted areas, while the second phase anticipates lowering the floor of this controlled airspace to 15,000 feet when experience and necessary facilities permit.

The air traffic rules which would be applicable initially in this airspace are similar to those presently prescribed for flight in control areas. Thus, the rules proposed herein do not eliminate VFR or "on top" flight operations. One significant difference between this controlled airspace and the currently used control area is the matter of dimensions. For example, control areas are normally designated along civil airways that are 10 miles wide and the floor of a control area is set at 700 feet above the surface. This new controlled airspace will have a floor of 24,000 feet and its lateral boundaries will be those of the continental United States.

The aircraft that are expected to make the greatest use of this area are the high performance aircraft whose air speeds are such that the present VFR minimums may not provide sufficient time for pilots to observe each other. It is believed, therefore, that the risk of collision in this area will be alleviated if the minimum visibility for VFR flight is increased to 5 miles and the clearance from clouds minimums are increased to 1,000 feet vertically and one mile horizontally.

It is apparent from comment received pursuant to Draft Release 57-15 that there is universal acceptance of the need for increasing the visibility and clearance from clouds minimums in this continental control area; however, as might be expected, there is a difference of opinion as to the specific values to be used in establishing these minimums. Although the increase to a 5-mile visibility minimum was received without significant objection, certain pilot and operator groups recommended that the lateral separation from clouds minimums be increased to as much as 5 miles. This distance from clouds criterion was carefully considered and the one-mile separation standard was selected as being operationally sound and the most realistic under the circumstances for the following reasons. Since the proposed continental control area concept is revolutionary in nature it is essential that initial efforts to implement the plan not be so ambitious as to threaten its success. Obviously, the greater the value selected for this standard the greater the number of aircraft that will be required to proceed in accordance with the IFR. Since the capability of the air traffic control system in this new plan is not fully known, it is considered advisable to tailor the standards to the system's current capabilities. It is our belief that the one-mile separation standard is consistent with this rationale.

The Administrator of Civil Aeronautics proposes to establish the following navigational procedures to govern flight conducted in the "continental control area." The results of his studies indicate that it is not feasible at this time to provide effective IFR air traffic control services for flight operations on a completely random basis with existing navigation and control techniques. It is considered, therefore, that IFR flight operations will have to be conducted to the maximum extent possible on a system of routes, if a reasonable volume of traffic is to be handled safely and expeditiously.

The plan for the route structure and navigation at high altitude is based on a demarcation altitude which effectively separates piston-engined aircraft from jet aircraft; 26,000 feet being a practical maximum altitude for the former and 27,000 feet being a minimum altitude for normal en route operation for the latter. The present system of colored and Victor airways will extend up to but not include 27,000 feet mean sea level (MSL). At and above 27,000 feet MSL, navigation will be conducted primarily on designated high altitude L/MF or VOR facilities, with L/MF facilities being phased out as TACAN and VORTAC facilities are phased in and the airborne equipments are implemented.

The designated navigational aids will delineate the high altitude route system to be employed at and above 27,000 feet. It is contemplated that these routes will be given a special designation and will be coded. The designated navigational aids will also serve to define the route to be flown by IFR flights which must operate outside the high altitude route system.

In addition to the foregoing, it is believed vitally important, in order to provide effective and safe air traffic control, that the route of flight be accurately determined for all IFR flights, regardless of the altitude, when such flights are conducted within controlled airspace, or in other words when conducted within control zones and control areas, as well as within the continental control area being established herein. If an entire flight is to be conducted along a civil airway, the route should be described by indicating the type and number of the airway. On the other hand, if a flight is of the direct route type, but still within controlled airspace, which may join or cross civil airways, or terminate within civil airways, the route of flight should be indicated by the names of radio fixes over which the flight will pass and should be flown on a direct course between the navigational aids forming such route. Accordingly, § 60.45 is being amended so as to require that all IFR flights in controlled airspace being flown on routes other than civil airways be flown on the direct course between the aids forming such routes.

Additionally, the provisions of § 60.45 which require that aircraft be flown to the right on L/MF airways and on designated radials of VOR airways, are being amended in favor of a single uniform rule which requires that, on any airway, IFR aircraft be flown "along the center line of the airway." This amendment, in addition to providing a uniform rule for all IFR airway flight, also provides a standard to be observed by those aircraft being navigated with direction finding equipment. It is realized that the maintenance of a specific track may not always be possible with a high degree of precision; however, the rule takes into account the operational tolerances involved. The present practice of achieving lateral separation by use of right side operation on L/MF airways will be retained by including the phrase, "unless otherwise authorized by air traffic control."

This amendment also introduces the phrase "continental control area" into Part 60 and adds therein an appropriate definition. In addition, it is deemed advisable to introduce another phrase, "controlled airspace," and define it as including control zones, control areas, and the continental control area. The use of this single phrase, where appropriate, will avoid complexity and achieve brevity of expression.

The high altitude quadrantal rules applicable to IFR operations in uncontrolled airspace above 29,000 feet will conflict with the rules adopted herein. Accordingly, appropriate amendments to the high altitude quadrantal rules are contained herein.

Interested persons have been afforded an opportunity to participate in the making of this amendment (22 F.R. 6020), and due consideration has been given to all relevant matter presented.

In consideration of the foregoing, the Civil Aeronautics Board hereby amends Part 60 of the Civil Air Regulations (14 CFR Part 60, as amended) effective November 1, 1957.

1. By amending § 60.30 by redesignating paragraph (b) as paragraph (c), and by adding a new paragraph (b) to read as follows:

60.30 Ceiling and distance from clouds. * * *

(b) Within the continental control area. Aircraft shall not be flown less than 1,000 feet vertically and one mile horizontally from any cloud formation.

2. By amending § 60.31 by redesignating paragraph (d) as paragraph (e), and by adding a new paragraph (d) to read as follows:

60.31 Visibility. * * *

(d) Flight visibility within the continental control area. When the flight visibility is less than 5 miles, no person shall operate an aircraft within the continental control area;

3. By amending § 60.32 (a) by changing the title thereof to read "Within controlled airspace below 29,000 feet."

4. By amending the introductory paragraph of § 60.41 to read as follows:

60.41 IFR flight plan. Prior to operating in controlled airspace, a flight plan shall be filed with air traffic control. Such flight plan shall contain the following information unless otherwise authorized by air traffic control:

5. By amending § 60.43 to read as follows:

60.43 Air traffic clearance. Prior to operating in controlled airspace, an air traffic clearance shall be obtained from air traffic control.

6. By amending § 60.44 by changing the title of paragraph (a) to read "Within controlled airspace", by changing the title of paragraph (b) to read "Elsewhere", and by deleting paragraph (c).

7. By amending § 60.45 to read as follows:

60.45 Course to be flown. Aircraft operating IFR in controlled airspace shall be flown as follows unless otherwise authorized by air traffic control:

(a) On civil airways. Along the center line of the airway.

(b) On other routes. Along the direct course between the navigational aids or fixes defining the route.

8. By amending § 60.47 by deleting the phrase "Within control zones and control areas" at the beginning of the section and inserting in lieu thereof the phrase "Within controlled airspace".

9. By amending § 60.60 by amending the definition of an "Air traffic clearance" by deleting the words "a control zone or control area" at the end of the definition and inserting in lieu thereof the words "controlled airspace" and by adding in proper alphabetical order the following new definitions:

60.60 Definitions. * * *

Continental control area. The continental control area is an area, designated by the Administrator, which includes that airspace within the continental United States at and above 24,000 feet (mean sea level), exclusive of prohibited and restricted areas.

Controlled airspace. Controlled airspace is that airspace, designated by the Administrator as a control zone, control area, or the continental control area, within which air traffic control is exercised.

(Sec. 205 (a), 52 Stat. 984; 49 U.S.C. 425 (a). Interpret or apply sec. 601, 52 Stat. 1007, as amended 49 U.S.C. 551)

By the Civil Aeronautics Board:

/s/ M. C. Mulligan

M. C. Mulligan
Secretary

(SEAL)

Part 60 last printed September 10, 1955

3. By adding a new definition to § 60.60 to read as follows:

60.60 Definitions. * * *

Flight Test. "Flight test" means the operation of aircraft in flight for the purpose of testing, observing, or measuring the performance of an aircraft, airframe, powerplant, or propeller after its manufacture or major alteration (as defined in Part 18), except for take-off, landing and operation to and from the area authorized for such flight tests.

(Sec. 205 (a), 52 Stat. 984; 49 U.S.C. 425 (a). Interpret or apply secs. 601, 1005, 52 Stat. 1007, 1023, as amended; 49 U.S.C. 551, 645, and sec. 4 (a), 60 Stat. 238; 5 U.S.C. 1003 (a))

By the Civil Aeronautics Board:

/s/ M. C. Mulligan

M. C. Mulligan
Secretary

(SEAL)

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