

Cancelled 00-22

AC NO: 91-30

DATE: 6/11/70



ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

SUBJECT: TERMINAL CONTROL AREAS (TCA)

-
1. PURPOSE. This Advisory Circular explains the TCA concept and answers some of the most frequently asked questions pertaining to TCA. This Circular is designed to assist persons in complying with the requirements of Part 91 pertaining to TCA.
 2. REFERENCES. Federal Aviation Regulations (FAR) Part 91 and Part 71, Airman's Information Manual (AIM).
 3. DISCUSSION.
 - a. The Federal Aviation Administration has recently amended FAR Part 91 setting forth requirements for operation within TCAs designated as Group I and Group II. These TCAs have been identified through analysis of the operational needs of each area, resulting in requirements tailored to the individual area, and the needs of its users. The specific airspace assignments for each location are described in FAR Part 71.
 - b. Through appropriate rulemaking action, terminal control areas have already been designated for the Atlanta, Georgia terminal area and for the Washington, D. C. and Chicago, Illinois terminal areas. These are effective on the dates indicated below. The remaining TCA airspace configurations will not be adopted without the issuance of individual notices of proposed rulemaking, thus offering all interested persons the opportunity to contribute to the end product.
-

6/11/70

Group I

Atlanta - Effective date 6/25/70
Washington - Effective date 7/23/70
Chicago - Effective date 7/23/70
Boston
Dallas
JFK International
LaGuardia
Los Angeles
Miami
San Francisco

*Group II

Cincinnati
Cleveland
Denver
Detroit
Houston
Kansas City
Las Vegas
Minneapolis
Newark
New Orleans
Philadelphia
Pittsburgh
Seattle
St. Louis

*Tentative locations

4. OPERATING RULES AND PILOT/EQUIPMENT REQUIREMENTS. Regardless of weather conditions, an ATC authorization is required prior to operating within the TCA. Pilots should not request such clearances unless the requirements of FAR 91 are met. Included among these requirements are:
- Two-way radio capable of communicating with ATC on appropriate frequencies.
 - A VOR or TACAN receiver. This is not required for helicopters.
 - An appropriate transponder beacon. This is not required for helicopters or for IFR flights at airports other than the primary. Additionally, this is not required for VFR flights at Group II locations.
 - Private pilot certificate or better in order to operate at the primary airport. This is not required at Group II airports.
 - Unless otherwise authorized by ATC, large turbine powered aircraft must operate at or above the floor of the TCA while operating to or from the primary airport.

Additionally, there is a 200 knot speed limit for aircraft operating beneath the depicted floors of the TCA and within the VFR corridor.

5. FLIGHT PROCEDURES.

- IFR Flights. Aircraft operating within the TCA will be operated in accordance with current IFR procedures except that pilots of large (over 12,500 lbs) turbine powered aircraft should operate at or above the designated TCA floors while arriving/departing the primary airport. Such aircraft will also avoid the VFR corridor where established for uncontrolled operations to transit the TCA.

b. VFR Flights.

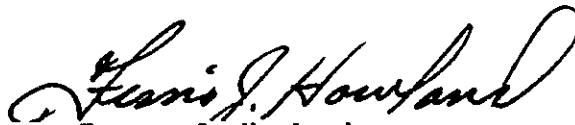
- (1) Arriving aircraft should contact ATC on specified frequencies and in relation to geographical fixes shown on local charts. Although arriving aircraft may be operating beneath the floor of the TCA on initial contact, communications should be established with ATC in relation to the points indicated for sequencing and spacing purposes.
- (2) Departing aircraft are requested to advise the ground controller the intended altitude and route of flight to depart the TCA.
- (3) Aircraft not landing/departing the primary airport (i.e., the airport for which TCA is designated) may obtain an ATC clearance to transit the TCA when traffic conditions permit, provided the requirements of FAR 91 are met. Notwithstanding this, VFR transiting traffic should avoid the TCA to the extent possible since sufficient airspace is available for flight beneath, above and through VFR corridors without excessive flight penalties.

6. ATC PROCEDURES. All aircraft will be controlled and separated by ATC while operating within the Group I TCAs. Large turbine powered aircraft will be separated from all other aircraft within Group II TCAs. (Other aircraft operating within Group II will be provided normal IFR or VFR radar service.) Although radar separation will be the primary separation standard used, approved visual separation and other nonradar procedures will be applied as required or deemed appropriate. Traffic information on observed but unidentified radar targets will be provided on a workload permitting basis to aircraft operating outside of the TCA. Initially, this additional service will be provided within TCAs on a traffic permitting basis because of the likelihood of unintentional violations.

NOTE: Assignment of radar headings and/or altitudes are based on the provision that a pilot operating in accordance with visual flight rules is expected to advise ATC if compliance with an assigned route, radar heading or altitude will cause the pilot to violate such rules.

7. PILOT EDUCATION. The success of any program of this magnitude depends on pilot and controller understanding, and the integrity of the people using the airspace. Therefore, to accomplish this understanding the FAA is undertaking an educational program designed to explain TCA to each pilot. The program is expected to include local pilot briefings, revision of pilot written tests, revision of pilot practical tests, and demonstration of knowledge of the TCA concept in biennial flight instructor renewals.

8. PUBLICATION. An extensive charting and publication effort is being undertaken with respect to the TCA program. Each TCA will be depicted on new VFR Terminal Area Charts. These charts, which will be similar to the former Local Aeronautical Charts, will include a plan view of the TCA on the face of the chart and the back of the chart will have a resume of pilot operating procedures for the information and guidance of VFR pilots. A notation will be made on other aeronautical charts to inform pilots about the TCA environment and to refer them to the appropriate VFR Terminal Area Chart. In addition, a handout portraying the TCA and a resume of pilot operating procedures will be distributed free in the manner calculated to reach the widest possible aviation audience. Copies will be distributed to FSSs, CS/Ts and airport operations offices. The Airman's Information Manual will also contain a graphic portrayal of the TCA and pilot operating procedures for each Terminal Area.
9. FUTURE ACTION. The TCA program will be closely monitored at each location. Further refinements and changes will be made as operational experience reveal the need for such changes. Pilot comments and suggestions in this regard are solicited.
10. MISCELLANEOUS. Attached to this Advisory Circular are a number of typical questions and answers relating to the TCA concept. These questions will provide you with a better understanding of the TCA rules and operating procedures. The questions are those most frequently asked at public hearings and in correspondence from the aviation public.



Ferris J. Howland
Acting Director, Air Traffic Service

TYPICAL QUESTIONS AND ANSWERS

REGARDING

TERMINAL CONTROL AREAS (TCA)

1. Why are TCAs being established?

To reduce the risk of midair collisions between aircraft operating in accordance with an ATC clearance and other aircraft operating within the same airspace without the knowledge of the air traffic controller. In addition to this safety factor, the requirement for all aircraft to be in communication with ATC prior to entering the TCA will provide for a more effective and orderly flow of traffic to and from those airports which serve the greatest number of people.

2. What impact will TCA have on the airspace user?

Any program designed to bring a higher order of regulation and control within the random flying VFR environment will result in some impact, not only on the airspace users but on the air traffic control system. Every effort has been, and will continue to be made to minimize this impact and to provide for as equitable use of the airspace as possible. It is important to remember, however, that the requirements for TCA are established for reasons of safety. If the requirements of the system should prevent the present controller force from handling as much traffic as it did before TCA becomes operational, then the reduction in capacity must be made for reasons of safety.

3. What is the main difference between the Group I and Group II TCA requirements and why are they different?

The main difference is in the transponder requirement. VFR aircraft must be equipped with an operable transponder at the Group I locations but not Group II. The other difference is that student pilots may not land/depart the primary airport at Group I but this is permitted at Group II.

The reason for the less stringent requirements at Group II locations is that these airports are generally less busy in terms of aircraft operations and passengers carried. There is a smaller percentage of use by air carriers and a larger use by slower, more maneuverable aircraft at the Group II locations. Thus, the speed and operating characteristics are not as critical from an air traffic control standpoint.

4. According to the language of the Rule, the transponder requirement is not applicable to helicopters operating within the TCA, or to IFR flights to or from an airport other than the primary airport. What is the rationale behind these exceptions?

The helicopter was excluded from the transponder requirement because of their maneuverability characteristics, slower speeds and lower altitudes. The other exception was made so that nonbeacon equipped aircraft could conduct an instrument approach/departure procedure at satellite airports when the procedure required a portion of the flight to be conducted within the TCA.

5. Will IFR operations be afforded priority over VFR traffic within the TCA environment?

No. Air traffic control service will continue to be provided on a "first-come-first-served" basis as circumstances permit.

6. Will TCA rules and airspace apply during instrument conditions?

The TCA rules and airspace are effective at all times, regardless of weather. It is true that TCA is not needed when VFR operations are suspended due to weather, however, it would not be operationally feasible to turn TCA "on and off" during varying weather conditions. First, controllers are not aware of the weather conditions existing throughout the TCA. Secondly, it would be a cumbersome, if not impossible, task to ensure that all pilots are apprised of the current status of an "on-again off-again" TCA environment.

7. Why isn't the size and shape of the TCA a standard design?

The TCA was purposely designed to provide as much free airspace as possible for satellite airport operations and for VFR transiting traffic. This individual "tailoring" has necessarily resulted in a more complex configuration than a standard or uniform design. Initial attempts to provide a more standardized configuration resulted in an undue impact on uncontrolled operations. A number of factors were considered in determining individual airspace requirements. For instance, the number and location of adjacent airports, instrument approach and departure procedures, noise abatement considerations, surrounding terrain, etc., all have a bearing on the size and shape of each TCA. There is no easy solution to this problem and it is incumbent upon each pilot to become familiar with TCA airspace so that he can identify these areas the same as he identifies control zones, restricted areas and other designated airspace.

8. A climb and descent corridor concept was proposed by numerous people and organizations as an alternate to TCA. Why didn't the FAA adopt this alternative?

The revised TCA concept incorporates many features of the corridor concept and provides additional vectoring airspace for maneuvering aircraft. Thus, the TCA configuration is essentially a "corridor-cake" representing a reasonable compromise between a pure corridor design and the so-called wedding cake design.

9. Do the rules governing operation within control zones and transition areas apply within a TCA environment?

Yes. It is important to understand that designation of TCA does not negate the need for other controlled airspace. There is a common misconception that airspace beneath the floors of a TCA and within VFR corridors are uncontrolled airspace wherein VFR operations can be conducted clear of clouds and with one mile flight visibility. This is not the case since portions of these excluded areas are within control zones and transition areas.

10. What is the purpose of the VFR corridors which are provided at some locations and how are they to be used?

VFR corridors are free airspace which has been excluded from the TCA so that VFR aircraft may overfly the airport (considered by many as the safest place) without contacting ATC or having to meet the transponder requirement.

Except for large turbine powered aircraft, the corridor airspace can be used by any aircraft (IFR or VFR) provided the 200 knot speed limit is not exceeded.

While in the corridor, VFR aircraft operating more than 3,000 feet above the surface must fly at the appropriate VFR altitude for direction of flight being flown. Where possible, the VFR corridor will be defined by VOR radials overlying prominent visual landmarks. It will be up to each pilot to determine whether he can navigate through the corridor and remain clear of the TCA. Factors to consider in making this determination are weather conditions existing at the time, pilot experience level and familiarity with the area. When requested by the pilot, radar advisory information will be furnished on a workload permitting basis to aircraft within the corridor.

11. What will be the vertical limits of the VFR corridor?

This will vary depending upon individual requirements. Normally the corridor vertical limits will be described as being between 3,000 and

5,000 feet. This will permit VFR transit at 3,500 and 4,500, depending on direction of flight. The important thing to understand here is that large turbine powered aircraft may cross the corridor, in the above example, at 3,000 or below and at 5,000 or above. VFR corridor traffic must be above 3,000 and below 5,000.

12. Will VFR corridors be provided at all locations?

No. Although every effort will be made to provide these corridors there are some locations, such as Chicago O'Hare, where this is not operationally feasible because of the many instrument approach procedures. A corridor through the busy O'Hare control zone would not only result in an unacceptable loss in system capacity but would require extensive changes to approved parallel approach procedures.

13. What is the minimum vertical separation (or buffer) between controlled aircraft operating within the TCA and uncontrolled operations underneath?

There is no specified "buffer," however, adherence to appropriate VFR cruising altitudes and the use of good judgement when flying beneath the designated floors will result in the desired segregation. In this regard the depicted floors are to let you know at what minimum altitude you may expect to encounter a large turbine powered aircraft. Common sense would dictate that you fly as far beneath these altitudes as possible.

14. When operating to/from the primary airport, am I required to confine my operation to the designated airspace while within its lateral limits?

To obtain maximum separation and protection from uncontrolled traffic, all users of the primary airport will be encouraged to remain above the TCA floor and to avoid VFR corridors, however, this will not be mandatory except for large turbine powered aircraft.

15. If I avoid the TCA am I assured of protection from aircraft operating to and from the primary airport?

No, primary airport traffic may also be operating outside of the TCA. Large turbine powered aircraft will be required to operate above the floors of the TCA but such aircraft may be above the ceiling prior to entering or departing the lateral limits. In short, you will be protected from large turbine powered aircraft operating to or from the primary airport if you are beneath the established floors or within the designated VFR corridors. If you are above the TCA or outside of the lateral limits, the situation will be the same as it is today.

16. Will I be required to file a VFR flight plan in order to operate within the TCA?

No. If you intend to land at the primary airport you will be expected to request an ATC clearance on listed frequency and give your position with respect to designated entry points. Communications should be established prior to reaching the outer limits, even though you may be operating above or below the TCA at the time. This is necessary for effective spacing and sequencing of arrival traffic. If you are departing the primary airport, merely give your intended route of flight and altitude to ground control so that he can plan accordingly.

17. Will I be able to obtain a clearance through the TCA if I am not landing at the primary airport?

Yes, such clearances will be issued on a traffic permitting basis if your aircraft meets the equipment requirements of FAR 91. It would be misleading, however, to imply that such clearances will always be issued, particularly during peak traffic conditions. It is not uncommon in today's system to deny the use of certain altitudes for IFR aircraft "overflying" congested terminal areas because of the disruption such operations would have on traffic flow to and from the major airports. For this reason, VFR pilots transiting the area are encouraged to avoid the TCA during peak periods or confine their operations to VFR corridors.

18. What does a VFR pilot do if he encounters radio failure?

If the aircraft is operating within TCA at the time of the radio failure he should proceed to the airport of intended landing or if departing he should exit the TCA in accordance with his latest clearance. If the failure occurs outside of the TCA, the pilot will be expected to remain clear of TCA and land at a satellite airport.

19. I am a noninstrument rated pilot and prior to entering the TCA I have received a clearance but after entering the airspace I find that it is not possible to comply with the clearance due to a cloud condition. What action do I take?

It is the pilot's responsibility to remain VFR in these circumstances and notify ATC immediately so an alternate clearance can be issued.

20. En route to a TCA airport I have an in-flight transponder failure. May I continue to my destination airport with the transponder inoperative?

Yes. The Rule provides for this if an appropriate ATC clearance is obtained.

21. Referring to Question 20, what happens if after landing I find that I cannot get my transponder repaired? Will I be able to depart with an inoperative transponder?

Yes. Provisions will be made to accommodate this type of situation.