

# Federal Aviation Agency



**AC NO :** AC 90-9

**AIR TRAFFIC CONTROL  
AND  
GENERAL OPERATIONS**

**EFFECTIVE :** 9/9/63

**EXPIRES:** 11/2/63

**SUBJECT :** FEDERAL AVIATION REGULATIONS CONFERENCES

**1. PURPOSE.** The Federal Aviation Agency is investigating several regulatory areas where preliminary studies have indicated a need for rule making action. To more fully explore these problems, by obtaining opinions and recommendations from the aviation public, the Agency is scheduling a series of informal conferences. This advisory circular is for the purpose of notifying the public of the location and date of these conferences, to invite the participation of interested persons at the meetings, and to solicit the written views of interested persons should they wish to participate in this manner.

**2. REFERENCE.** Civil Air Regulations, Part 60 (Federal Aviation Regulations, Part 91 (New)). Notice 63-8, dated February 20, 1963. Special Civil Air Regulation No. SR-445.

**3. COMMENTS.** Written comments should be submitted prior to October 11, 1963, and should be addressed to the Chief, Regulations and Procedures Division, AT-300, Federal Aviation Agency, Washington, D.C. 20553. Because of the large number of comments anticipated, we will be unable to acknowledge their receipt. However, you may be assured that all comments will be given careful consideration and may form part of the basis for discussion at the meetings.

**4. CONFERENCE SCHEDULE.** Each conference will be scheduled for a two day period. Meet-

ings will convene at the locations indicated below at 9:30 a.m. local time.

**PHILADELPHIA, PENNSYLVANIA—**  
October 18 and 19, 1963.

Sheraton Motor Inn  
39th and Walnut Streets

**BIRMINGHAM, ALABAMA—**October 18  
and 19, 1963.

Airport Motel  
Municipal Airport

**DES MOINES, IOWA—**October 22 and  
23, 1963.

Airport Shelter House  
Municipal Airport

**HOUSTON, TEXAS—**October 22 and 23,  
1963.

Houston Airport Inn  
International Airport

**DENVER, COLORADO—**October 25 and  
26, 1963.

Ken Sair Hangar  
Jefferson County Airport

**PHOENIX, ARIZONA—**October 25 and  
26, 1963.

Group Operations and Training Bldg.,  
Arizona ANG 32nd Street and Watkins  
Road, Sky Harbor Airport

**SEATTLE, WASHINGTON—**October 29  
and 30, 1963.

Seattle Hilton Inn  
South 176th and Highway 99

OAKLAND, CALIFORNIA—October 29 and 30, 1963.

Savern's Restaurant, Main Terminal Building Oakland International Airport

ANCHORAGE, ALASKA—November 1 and 2, 1963.

Room 8J, FAA Headquarters Building  
632 Sixth Avenue

HONOLULU, HAWAII—November 1 and 2, 1963.

Moana Hotel  
2365 Kalakaua Avenue

#### 5. AGENDA.

- a. The agenda for the first day of the meetings will be as follows:
  - (1) *Equipment Malfunction Reports*—concerning the advisability of expanding Special Regulation No. 445 to include VFR flights and to require pilot reports of in-flight malfunction of such things as propeller, power plant, and hydraulic system.
  - (2) *Listing of Alternate Airports*—should the pilot be allowed to omit the alternate airport from his IFR flight plan when weather at his destination is above certain minimums?
  - (3) *Adoption of the Nautical Mile*—consideration of adopting one unit of measurement, the nautical mile, as a national standard for aviation.

- (4) *Control Zone Weather*—should VFR operations, at a satellite airport located within a control zone, continue to be predicated on the weather being reported at the airport upon which the control zone is based?

b. The agenda for the second day will be:

- (1) *Operations at Airports Without a Control Tower*—relating to the standardizing of traffic pattern flight procedures at airports where there is no control tower to provide airport traffic control service.

For your convenience, a more detailed discussion of these items is provided by the attachment to this advisory circular.

6. **NOTIFICATION.** So that we may know of the approximate attendance at each meeting, please complete the tear-off portion of this circular and return it prior to October 11, 1963. If you will be representing an organization or corporation, please so indicate.

For: 

LEE E. WARREN

Director

Air Traffic Service

## Attachment 1. DISCUSSION ITEMS

### Equipment Malfunction Reports

Special Civil Air Regulation No. 445 requires a pilot to inform ATC when certain of his navigation or communications equipment fails while operating IFR in controlled airspace. This is intended to give ATC notice that the pilot may not be able to fully comply with the requirements of the system and may require special control handling, or that an emergency situation may develop. This notice to ATC, therefore, allows for a more complete and efficient use of the air traffic control tools and thereby provides for the safe conduct of the flight.

Experience shows that this regulation has been very beneficial and well accepted. In fact, pilots frequently submit reports on other items voluntarily. We are considering expanding the regulation to include failure of such components as propeller, power plant, or hydraulic system. In addition, VFR operations would be included if an ATC facility exists at the destination.

### Listing of Alternate Airport

A pilot operating IFR in controlled airspace is required under Part 60 to list an alternate airport regardless of the weather forecast for his destination airport. The minimum weather requirements for his alternate are listed in Section 60.42 of Part 60. Air carrier and military pilots are not required to list an alternate when weather conditions at destination are above certain specified minimums. The point of issue is whether this same privilege should not be extended to general aviation pilots as well.

Another consideration is: Which airports may be listed as alternates? Section 60.42 permits listing of any airport as an alternate so long as it has the weather minimums required by that section. In the extreme, this allows listing an alternate where the weather is actually below the prescribed landing minimums or listing one where there is no weather reporting service or instrument approach aid. To exclude all such airports, however, would result in a change in the present Part 60 requirements and might work a hardship on pilots in certain areas.

### Adoption of the Knot/Nautical Mile as the Standard Measurement Unit

Since October 1, 1954, this Agency has had a policy which allows for the joint use of the nautical mile and the statute mile as units of measurement in aviation. This provides that all air carrier and military pilots shall use nautical miles for all purposes except for visibility values. Civil pilots may use either, but are encouraged to use nautical references. For all operational purposes except visibility, the Agency uses nautical miles; however, the controller will convert the information to statute miles upon request of the civil pilot.

Although the aviation user has fully cooperated in this plan, the disadvantage of a dual standard has become apparent. For example, a weather report gives the wind

velocity in knots and the visibility in statute miles. Airway widths are designated in statute miles while the distance along the airways is shown on the chart in nautical miles only.

This dual standard often creates ambiguities when control procedures are applied and during coordination with aviation interests. One person may be referring to nautical miles while the other is thinking of statute miles. To resolve this, the Agency is considering whether a single unit—the nautical mile—should be adopted as the aviation standard. If so, complete change-over would be on a gradual basis as individual changes were made to currently published statute mile measurements.

### Control Zone Weather

Section 60.30 of Part 60 states in part that aircraft shall not be flown VFR within a control zone beneath the ceiling when the ceiling is less than 1,000 feet. It also states that no person shall take off or land an aircraft, or enter the traffic pattern of an airport within a control zone, when the ground visibility is less than three miles. Ground visibility, as contained in CAR 60.60, is defined as follows: "The average range of vision in the vicinity of an airport as reported by the U.S. Weather Bureau, or, if unavailable, by an accredited observer."

The official Agency interpretation is that the latest U.S. Weather Bureau report for the master airport in a control zone governs the operations at all airports within that control zone. It has been recommended that the rule be amended so that operations at another airport within a control zone will be governed by the weather at that airport, rather than by the weather being reported at the master airport.

### Operation on and in the Vicinity of Airports Without a Control Tower

Examination of data concerning mid-air collisions, gathered over the past 20 years, reveals that a significant proportion occurs in daylight and during good weather. Most of these collisions have occurred with one or both of the planes in the landing or approach phase of flight, or while in an airport traffic pattern. In most cases the airport was uncontrolled.

On February 20, 1963, the Agency issued an advance notice of proposed rule making (Notice 63-8) which described the various issues involved for operations at uncontrolled airports and listed 10 items which were considered to be the major elements of a proposed regulation to standardize traffic pattern flight procedures. The arguments presented in the notice were those which we have formulated over the years, based on our own study of the matter and the comments received from users. We have received considerable public comment on the uncontrolled airport proposal and have prepared a brief summary of those comments to be used as a basis for discussion of the various elements at the rules conference meetings.

**Traffic Pattern Components.** While there were several suggestions for minor changes in the traffic pattern components, the majority of the comments recommended adoption of the component definitions as written in the notice. Included in the comments were recommendations for such changes as:

- (a) elimination of the requirement for a final approach of at least 1,000 feet;
- (b) inclusion of specified maximum and minimum distances from the airport for all legs of the pattern; and
- (c) establishment of a circular pattern for larger and faster aircraft.

However, suggestions of this type were in the minority. The consensus is that a 1,000' final is very desirable but that in the interest of simplicity, limitations of this type must be kept to a minimum. Also, since there was no safety advantage of a circular pattern over a rectangular pattern, the rectangular pattern—which is the one most commonly used at uncontrolled airports and best for inexperienced pilots—should be adopted as the standard.

While there was only one comment to the effect that the suggested standard components were so detailed and precise as to be impractical, there were a few who felt that differences in terrain, tall structures, adjacent airports etc., would complicate application of the components at many locations.

**Traffic Pattern Entry.** There were quite a few comments which proposed only one entry point—between 45° and 90° to the downwind leg, about midfield. This would provide a common entry point and the pilot would be especially vigilant as he entered that one area. Others advocated either 45° entry to any leg, except base or final, or straight-in on the upwind, downwind, or crosswind leg. The argument for straight-in entry on the four corners of the pattern is that the aircraft enters in straight and level flight, allowing maximum view and opportunity for proper spacing. Still others want nothing to do with entry on crosswind because of the hazard of conflicting with departing aircraft. Another group considers it just as safe to enter on any leg so long as vigilance is maintained and the direction of landing has been determined. They add that the less time in the pattern, the more safety. Several commenters felt that to regulate entry procedures would be to deprive the pilot of using his best judgment in each circumstance.

**Traffic Pattern Altitudes.** Comments favoring a standard traffic pattern altitude were almost three times those favoring separate altitudes for small and large aircraft. The overwhelming majority favored 1,000 feet above the surface while a few desired 600, 700 or 800 feet or a variable standard between 500 and 1,000 feet. The advantage cited for using one altitude for all aircraft was that this makes it easier to see and be seen. It was brought out that in addition to the possibility of the view being blocked by the wing, a lower aircraft blends in with the terrain thereby reducing its conspicuity. Variations suggested to the standard altitude would set up a lower altitude for agricultural aircraft and for local training flights in the pattern. It was

frequently noted that a natural segregation of traffic would exist because of the maneuvering room required by the different types of aircraft.

Those advocating separate altitudes did so because a standard—which would probably have to be about 1,000 feet to accommodate large aircraft—would necessarily slow down all traffic because it would force smaller and slower aircraft to spend more time getting to and from traffic pattern altitude. Several others commented that variations of terrain, obstructions, and populated areas would not lend themselves to a standardized altitude rule. It was said that safety would be derogated because the pilot's judgment would be replaced by an inflexible regulation.

**Aircraft Speed.** The comments ran better than two to one in favor of the establishment of a limitation on aircraft speed within traffic patterns. Arguments in favor of a speed limitation were that this would enhance the see and be seen concept of traffic separation and that it would prevent the hazardous situation created by aircraft entering a pattern at excessive speed and slowing down at the very last moment. Some of those opposed to the establishment of traffic pattern speed limitations felt that the existing requirements of § 60.27 were sufficient; some felt that there would be a natural lateral separation of aircraft due to speed differentials; and others felt that altitude separation should be provided to resolve the problem. Still others maintain that no real problem exists in this area since aircraft normally decrease speed upon entering a traffic pattern.

Suggestions concerning specific speed limits varied greatly. The recommendations for maximum speed ran from 120 knots to 200 knots, and from suggestions for a very general rule requiring a "safe and reasonable speed" to suggestions for specific maximums for each type aircraft. Some suggested maximum allowable gear down speed, and others that the rule require that all aircraft with flaps be required to enter the pattern with flaps one half down. The most generally endorsed limits, however, were those which are presently prescribed in CAR 60.18 (a) (2) for operations at tower controlled airports.

**Calmwind, Crosswind, and Downwind Operations.** The large majority favored operation as indicated by the landing direction indicator, if installed; otherwise, on or parallel to the runway most nearly aligned into the wind. Exceptions were recommended in training situations and when safety dictates use of a different runway. However, some comments were very definitely against any requirement to use the runway indicated by such a device. These persons said that in far too many cases the indicator is inoperative because it is tied down, the mechanism is stuck, or the field attendant has not had time to change it to the proper direction.

There was strong feeling that wind direction indicators should be required—or at least encouraged—on all uncontrolled airports, and that their design and location should be standardized. It was also frequently recommended that each uncontrolled airport have a calmwind runway established, published, and marked. Some sug-

gest prohibiting all downwind and crosswind operations, and others maintain that no regulation on this subject could, or should, be substituted for the pilot's judgment.

*En route operations.* On the question of a provision which would require avoidance of traffic patterns by en route aircraft, there was virtually unanimous agreement that the lack of such provision would seriously derogate the effectiveness of all other traffic pattern procedures. Many recommended a provision requiring strict avoidance of traffic patterns by en route aircraft, with no exceptions. It was pointed out that a rule of this type would provide maximum safety and would be most beneficial in the long run. The majority, however, favor an "avoid or conform" provision, for simplicity and ease of understanding and because low ceilings would otherwise completely block en route traffic in some areas.

A prerequisite to any avoidance rule, however, is an established criteria on what constitutes avoidance. On this point, there was greater variance in the comments. Suggestions for a specific lateral distance varied from one to five miles, with the largest number favoring three miles. However, there were many who favored the more general requirement that en route aircraft remain "well clear" of traffic patterns. In the matter of vertical clearance, suggestions varied from "above traffic pattern altitudes" to "1,000 feet above traffic pattern altitudes," and from "1,200 feet above the airport" to "3,000 feet above the airport." By actual count, "500 feet above traffic pattern altitude" received the strongest endorsement, with "1,500 feet above the airport" running a close second. (In fact, many considered these to be basically the same requirement.) The suggestion that en route aircraft be required to fly at least 2,000 feet above uncontrolled airports was next in volume, the primary objective here being to keep the requirement consistent with the present requirement at tower controlled airports. Another suggestion which received substantial support was that 1,200 feet above the airport be adopted as the minimum, so that the minimum would be consistent with the base of control areas.

Another question frequently addressed was: At which airports would an avoidance rule apply? It was suggested that uncontrolled airports would have to be classified according to traffic volume since it is not necessary or practical to require avoidance of very small, light activity airports and landing strips. As the comments point out, airports—as defined in FAR-1—include all areas of land or water that are used or intended to be used for the landing and take-off of aircraft. Many of these are not readily discernible to pilots in the air and are not shown on navigation charts. It was not considered practical to require avoidance of these airports when there is no traffic in the pattern, especially in areas where there is a high concentration of airports.

*Straight-in Approaches.* Commenters invariably had strong views either for or against straight-in approaches. There were many who would absolutely forbid them because the pilot on straight-in frequently only can assume which is the active runway, his aircraft is hard to see, and the pilot (especially students) in the traffic pat-

tern is likely to be concentrating on the touchdown point rather than "way out" on final. It was felt that the traffic, wind, and runway condition information gained by entering the traffic pattern more than offsets the reduced flying time and economic considerations cited as advantages of the straight-in approach.

There was also considerable support for the straight-in approach. It was stressed that the pattern entry which requires the least amount of maneuvering will give the pilot more time to scan the area for other traffic, and that less time in the air means more safety. Differences in maneuverability, speed, visibility, and altitude requirements were pointed out as reasons to allow straight-ins for large aircraft. Those advocating straight-ins recognized the obligation to give way to conflicting traffic in the regular pattern. Others conditioned their approval of such operations on there being an advisory service on the airport or the intention to make a straight-in being broadcast over Unicom.

*Right-of-way.* The premise set forth in the notice—that en route aircraft or aircraft entering a traffic pattern should give way to aircraft already in the pattern—was given substantial support. The majority of the comments indicated that this should be reflected in the regulations. There were several comments, however, which took the position that the existing regulations are clear and adequate, and that no further rule making in this area is necessary. It was also noted that about four training aircraft, conducting touch and go operations, could effectively close an airport to other traffic desiring to land or take off. Some commenters feel that cooperativeness, airmanship and good judgement are the only practical solutions to the problem of right-of-way in the traffic pattern at an uncontrolled airport.

In regard to the question of right-of-way during crosswind and downwind operations and during straight-in approaches, there were many who recommended against operations of this type and indicated that if they were eliminated the problem would be greatly simplified. In addition, the consensus of those not advocating the elimination of these operations was that they should be permitted only for training or because of aircraft limitations. In any case, most of the comments indicated that aircraft in a traffic pattern which conforms to the landing direction indicator should have the right-of-way over these other operations. Others suggested that crosswind and downwind operations be discontinued when an aircraft enters the normal pattern, and that an arriving aircraft, intending to land crosswind or downwind, be required to circle the field to observe other traffic before landing.

*Departure Procedures.* Many of those replying to this item considered the present rule in CAR 60.18 adequate: i.e., on departure comply with any FAA established traffic pattern. Others agreed with this but added that where a pattern has not been established locally, a standard departure procedure should be set forth in the rule. Pilot judgment rather than regulation was advocated in other comments.

There was considerable support for a standard de-

parture procedure which would consist of a 90° left turn onto crosswind followed by a 45° right turn. It was contended that this is the usual standard which has been taught for years, that it fits most situations, and that there is no need to change it. Many others opposed this, however, saying that it is not practical for faster aircraft. In addition, it is difficult for the pilot to clear himself for a right turn, the turn out frequently comes close to the usual downwind entry point, and the turn out often takes the aircraft back over or near the departure path of subsequent departures.

The most favored procedure was a straight-out departure until above or beyond the normal traffic pattern and then a turn in either direction to on course. A suggested variation of this procedure would allow an option of proceeding straight-out or of making an immediate 45° turn in either direction. The benefits would be better pilot visibility, faster departure from the traffic pattern area, and the fact that traffic in the pattern would be able to more quickly determine the intention of the departing aircraft.

**Communications.** The majority considered that there are very good reasons for a communications requirement at uncontrolled airports, radio equipment permitting. In several instances, comments mentioned that such an arrangement already exists at their particular airport. It was said that it has "speeded up traffic, reduced near-misses, and kept tempers from flaring over traffic sequence." The bulk of the supporters felt it was "just good operating procedure" for a pilot with radio to get on the air and broadcast his position and intentions when near an uncontrolled airport.

Most of those opposed to a radio requirement recognized its safety value but were against it being made mandatory. They cited the false sense of security a pilot might get if he heard no other traffic, plus the fact that many Unicom stations are manned by persons inexperienced in aviation. It was claimed that the Unicom operator is frequently not in a good position to see all local traffic; that wrong information is sometimes given by the Unicom operator; and that the airport manager or local operator would assume air traffic control duties.

Also mentioned were the problems of frequency congestion and enforceability.

In this regard, one of the principal ideas set forth in the draft release was that safety could be enhanced simply by having the pilot make a blind transmission of his position and intention on a designated frequency *if he had the necessary radio equipment*. This would apply whether or not a Unicom ground station was located on the field. However, it is apparent that this was misconstrued by many who understood that a communications requirement would mean the aircraft *had* to be radio equipped and that the Unicom station *had* to be manned and give out traffic control information.

**General.** There were many comments of a general nature which were not directly related to any one of the above traffic pattern elements, or were indirectly related to several. A frequently repeated observation was that the matter of traffic direction indicators (type of wind direction indicator employed, method used to control this device, the questionable accuracy of some), and the method of designating a calmwind runway, must be resolved if effective standardization is to be achieved. Questions concerning standard airport markings were also raised by many. For example: Are these sufficient indication of right traffic patterns? Should their location be standardized? Can the conspicuity of airport markings be improved? Again, the problem of the definition of "Airport," as contained in FAR-1, was raised. Would it be feasible to tie the question of airport marking to the question of the applicability of the rule to small private airports or landing strips?

There were also questions concerning the method to be used to indicate the existence of a nonstandard pattern and the nonstandard elements of such patterns. Should airport markings be devised to indicate this information? Should the information be included on navigation charts? or carried in the Airman's Guide?

Other general questions were: Should taxiing restrictions be included in the proposed regulations? Should rules be adopted for the operation of other vehicular traffic on the airport surface? Finally, what impact would the standard traffic pattern rules have on IFR operations at airports without a control tower?