See correction

SUBCHAPTER E—AIRSPACE

[Docket No. 10183; Amdt. 77-9]

PART 77—OBJECTS AFFECTING NAVIGABLE AIRSPACE

Standards for Determining Obstructions to Air Navigation

The purpose of these amendments to the Federal Aviation Regulations is to change the standards for determining obstructions to air navigation.

These amendments were proposed in Notice 70-11 and published in the FEDERAL REGISTER on March 14, 1970 (35 F.R. 4554).

Twenty-five public comments were received in response to the Notice. A substantial number of comments were directed to the application of the obstruction standards and to suggestions for improving notice requirements. Since the subjects of these comments were not part of Notice 70-11, they were not considered in the formulation of the rule. However, they will be given full consideration by the FAA in its continuing efforts to improve Part 77.

Numerous comments were received in response to the FAA's request for public comment on two possible future changes to § 77.25 which were not made part of the notice. These two possible changes would revise § 77.25 to specify (1) that the approach surface would begin 200 feet beyond the end of the landing threshold, and (2) that the slope of the transitional surfaces extending outward and upward from the edges of the primary surface would be 4:1 instead of 7:1. The comments reflected many viewpoints pro and contra. Several commentators stated that the approach surface to a runway should be related to the end of the runway, or to the displaced threshold if the landing threshold had been relocated, without applying the current 200-foot buffer zone between the landing threshold and the beginning of the approach surface. Others felt that the beginning of the approach surface should not be moved to relate to a displaced threshold unless the displacement was the result of some irrevocably fixed obstruction. Some opposition was expressed to changing the slope of the primary surface related transitional surfaces from 7:1 to 4:1. It was felt that no factual data or rationale had been presented to justify such a change. Further, it was suggested that such a change would result in unsafe structures near runways and might also affect CAT II missed approach requirements. On the other hand, some commentators suggested that the relaxation of the transitional surface slope would have certain advantages for locating airport parking gates for large airplanes; would be practical and desirable; and would be more realistic in view of current land use concepts. All of these comments will be given careful consideration by the FAA in determining its future action in this area.

While some revision of the proposal was effected in the light of the comments received, the amendment as adopted follows the general form of the notice.

Several commentators proposed modifications for the definitions of the several categories of runways. Concern was expressed as to the use of the phrase "or any other FAA or military planning document" in the proposed definition of a visual runway; that an airport operator might be obligated or under control of a document to which he does not have access. In response to these comments, the definition of a visual runway has been changed to clarify reference to a military approved airport layout plan as a plan for military airports only, and to amend the phrase referring to "any other FAA or military planning document" to specify any planning document submitted to the FAA by competent authority. This will include an airport layout plan or planning document submitted to the FAA by or through a state or local government.

Consideration was given to suggestions by commentators to include a variety of other definitions in § 77.2. However, since the suggested terms have common dictionary definitions or are otherwise defined in the Federal Aviation Regulations, it was determined not to include these terms in § 77.2. However, minor changes in the language of the proposed definitions in § 77.2 have been made to state more clearly their purpose and use.

One comment concerning the proposed change to § 77.13(a)(3) suggested that the railroad height adjustment should be modified so that the "highest possible or intended" object is considered, and that this should include all roads so that plans would not be based upon heights that are impractical. The FAA considers that the height adjustments prescribed are needed for guidance when applying the notice requirement criteria, and should have limited flexibility. It should be noted that 23 feet is the highest tunnel clearance required for railroads in the United States, and this height would be in consonance with the requirements of the various States.

Several commentators objected to the proposed changes to § 77.15(c) that would exclude from the notice requirement of § 77.13 any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meterological device, the location and height of which is fixed by its functional purpose, if of a type approved by "an appropriate military service." After careful consideration of the objections, the FAA decided that type approval of devices and equipment on civil airports should remain with the Administrator. Therefore, the change to § 77.15(c) as proposed, has been modified to exclude from the notice requirement of § 77.13 any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device given type approval by an appropriate military service only when such facilities, aids, or devices would be located on a military airport.

Several isolated comments directed attention to the intention of the FAA to use the applicable MOCA instead of the established MEA as the basis for determining obstructions within an en route obstacle clearance area of a Federal airway or approved off-airway route.

Even though some individuals or groups may consider this concept to be a new one, it is based on the rationale that through use of the MOCA alone and selectively applying the terms obstacle and obstruction to it, the application of the standards of Part 77 will be simplified and will result in bringing the entire system into conformity with international standards. In simplified terms, a MOCA is that minimum safe altitude that will permit an aircraft to traverse a designated area of airspace clear of obstacles below. Generally, the height of the highest or controlling obstacle in that airspace segment provides the imaginary obstacle reference line. The appropriate FAA personnel, applying established and specified standards then supply an additional amount of airspace above the obstacle reference line that forms the MOCA altitude level for that segment of flight.

In applying the standards of Part 77 to this airspace formulation, any proposed structure that does not exceed the obstacle reference line will be classified as an obstacle. However, if the proposed structure would penetrate this airspace above the obstacle reference line, it would be classified as an obstruction. Once a proposal is classified as an obstruction, under the procedures provided for in Part 77, it will be studied to determine whether it will or will not constitute a hazard to air navigation.

Accordingly, new § 77.23(a)(4) establishes that the MOCA instead of the MEA will be the basis for determining whether any object within any en route obstacle clearance area, including turn and termination areas, of any Federal airway or approved off-airway route will be classified as an obstruction to air navigation.

One comment was received concerning the proposed new § 77.21(b). The new paragraph was added to insure proper application of the imaginary surfaces outlined in § 77.25 at airports that have defined landing and takeoff strips, or pathways that are designated as runways but do not have specially prepared hard surfaces, or have a defined landing and takeoff area with no defined landing and takeoff strips or pathways designated as runways. For the purpose of

77

surface applied to each end of a runway are determined by the most precise approach existing or planned for that runway end.

(a) *Horizontal surface.* A horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The radius of each arc is:

(1) 5,000 feet for all runways designated as utility or visual;

(2) 10,000 feet for all other runways. The radius of the arc specified for each end of a runway will have the same arithmetical value. That value will be the highest determined for either end of the runway. When a 5,000-foot arc is encompassed by tangents connecting two adjacent 10,000-foot arcs, the 5,000-foot arc shall be disregarded on the construction of the perimeter of the horizontal surface.

(b) *Conical surface.* A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

(c) *Primary surface.* A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway; but when the runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of a primary surface is:

(1) 250 feet for utility runways having only visual approaches.

(2) 500 feet for utility runways having nonprecision instrument approaches.

(3) For other than utility runway the width is:

(i) 500 feet for visual runways having only visual approaches.

(ii) 500 feet for nonprecision instrument runways having visibility minimums greater than three-fourths statute mile.

(iii) 1,000 feet for a nonprecision instrument runway having a nonprecision instrument approach with visibility minimums as low as three-fourths of a statute mile, and for precision instrument runways.

The width of the primary surface of a runway will be that width prescribed in this section for the most precise approach existing or planned for either end of that runway.

(d) *Approach surface.* A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

(1) The inner edge of the approach surface is the same width as the primary surface and it expands uniformly to a width of:

(i) 1,250 feet for that end of a utility runway with only visual approaches;

(ii) 1,500 feet for that end of a runway other than a utility runway with only visual approaches;

(iii) 2,000 feet for that end of a utility runway with a nonprecision instrument approach;

(iv) 3,500 feet for that end of a nonprecision instrument runway other than utility, having visibility minimums greater than three-fourths of a statute mile;

(v) 4,000 feet for that end of a nonprecision instrument runway, other than utility, having a nonprecision instrument approach with visibility minimums as low as three-fourths statute mile; and

(vi) 16,000 feet for precision instrument runways.

(2) The approach surface extends for a horizontal distance of:

(i) 5,000 feet at a slope of 20 to 1 for all utility and visual runways;

(ii) 10,000 feet at a slope of 34 to 1 for all nonprecision instrument runways other than utility; and,

(iii) 10,000 feet at a slope of 50 to 1 with an additional 40,000 feet at a slope of 40 to 1 for all precision instrument runways.

(3) The outer width of an approach surface to an end of a runway will be that width prescribed in this subsection for the most precise approach existing or planned for that runway end.

(e) *Transitional surface.* These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces. Transitional surfaces for those portions of the precision approach surface which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline.

§ 77.27 [Revoked]

9. By revoking § 77.27 *Civil airport imaginary surfaces related to runways.*

10. By amending paragraphs (a) and (b)(1) of § 77.28 to read as follows:

§ 77.28 Military airport imaginary surfaces.

(a) *Related to airport reference points.* These surfaces apply to all military airports. For the purposes of this section a military airport is any airport operated by an armed force of the United States.

(b) *Related to runways.* These surfaces apply to all military airports.

(1) *Primary surface.* A surface located on the ground or water longitudinally centered on each runway with the same length as the runway. The width of the primary surface for runways is 2,000 feet. However, at established bases where substantial construction has taken place in accordance with a previous lateral clearance criteria, the 2,000-foot width may be reduced to the former criteria.

* * * * *

11. By amending paragraph (b) of § 77.29 to read as follows:

§ 77.29 Airport imaginary surfaces for heliports.

* * * * *

(b) *Heliport approach surface.* The approach surface begins at each end of the heliport primary surface with the same width as the primary surface, and extends outward and upward for a horizontal distance of 4,000 feet where its width in 500 feet. The slope of the approach surface is 8 to 1 for civil heliports and 10 to 1 for military heliports.

* * * * *

(Secs. 307, 313, 1101, Federal Aviation Act of 1958, 49 U.S.C. 1348, 1354, 1501; sec. 6(c), Department of Transportation Act, 49 U.S.C. 1655(c))

Issued in Washington, D.C., on March 25, 1971.

J. H. SHAFFER,
Administrator.

[FR Doc.71-4494 Filed 3-31-71;8:50 am]

[Docket No. 10183; Amdt. 77-9]

PART 77—OBJECTS AFFECTING NAVIGABLE AIRSPACE

Standards for Determining Obstructions to Air Navigation

Correction

In F.R. Doc. 71-4494 appearing at page 5968 in the issue for Thursday, April 1, 1971, the following changes should be made:

1. In § 77.21 a line of five asterisks should appear immediately following paragraph (b) to indicate the existence of omitted text.

2. In the introductory text of § 77.25 (c)(3) the word "runway" should read "runways".

3. In § 77.28 a line of five asterisks should appear between paragraphs (a) and (b) to indicate the existence of omitted text.

4. In § 77.29(b) the word "in" appearing in the seventh line should read "is".