SUBCHAPTER E—AIRSPACE

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

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Source: Amdt. 71–14, 56 FR 65654, Dec. 17, 1991, unless otherwise noted.

Special Federal Aviation Regulation No. 97

Editorial Note: For the text of SPAR No. 97, see part 91 of this chapter.

§ 71.1 Applicability.

A listing for Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points can be found in FAA Order 7400.9V, Airspace Designations and Reporting Points, dated August 9, 2011. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552 (a) and 1 CFR part 51. The approval to incorporate by reference FAA Order 7400.9V is effective September 15, 2011, through September 15, 2012. During the incorporation by reference period, proposed changes to the listings of Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points will be published in full text as proposed rule documents in the Federal Register. Amendments to the listings of Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points will be published in full text as final rules in the Federal Register. Periodically, the final rule amendments will be integrated into a revised edition of the Order and submitted to the Director of the Federal Register for approval for incorporation by reference in this section. Copies of FAA Order 7400.9V may be obtained from Airspace, Regulations and ATC Procedures Group, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591, (202) 267–8783. An electronic version of the Order is available on the FAA Web site at http://www.faa.gov/air_traffic/publications. Copies of FAA Order 7400.9V may be inspected in Docket No. FAA–2011–0855; Amendment No. 71–43 on http://www.regulations.gov. A copy of FAA Order 7400.9V may be inspected at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: http://www.archives.gov/federal-register/cfr/ibr-locations.html.

§ 71.3 [Reserved]

§ 71.5 Reporting points.

The reporting points listed in subpart H of FAA Order 7400.9V (incorporated by reference, see §71.1) consist of geographic locations at which the position of an aircraft must be reported in accordance with part 91 of this chapter.


EFFECTIVE DATE NOTE: At 76 FR 53329, Aug. 26, 2011, §71.5 was amended by removing the words “FAA Order 7400.9U” and adding, in their place, the words “FAA Order 7400.9V”, effective Sept. 15, 2011 through Sept. 15, 2012.

§ 71.7 Bearings, radials, and mileages.

All bearings and radials in this part are true and are applied from point of origin and all mileages in this part are stated as nautical miles.

§ 71.9 Overlapping airspace designations.

(a) When overlapping airspace designations apply to the same airspace, the operating rules associated with the more restrictive airspace designation apply.

(b) For the purpose of this section—

(1) Class A airspace is more restrictive than Class B, Class C, Class D, Class E, or Class G airspace;

(2) Class B airspace is more restrictive than Class C, Class D, Class E, or Class G airspace;

(3) Class C airspace is more restrictive than Class D, Class E, or Class G airspace;

(4) Class D airspace is more restrictive than Class E or Class G airspace; and

(5) Class E is more restrictive than Class G airspace.

§ 71.11 Air Traffic Service (ATS) routes.

Unless otherwise specified, the following apply:

(a) An Air Traffic Service (ATS) route is based on a centerline that extends from one navigation aid, fix, or intersection, to another navigation aid, fix, or intersection (or through several navigation aids, fixes, or intersections) specified for that route.

(b) An ATS route does not include the airspace of a prohibited area.


§ 71.13 Classification of Air Traffic Service (ATS) routes.

Unless otherwise specified, ATS routes are classified as follows:

(a) In subpart A of this part:

(1) Jet routes.

(2) Area navigation (RNAV) routes.

(b) In subpart E of this part:

(1) VOR Federal airways.

(2) Colored Federal airways.

(i) Green Federal airways.

(ii) Amber Federal airways.

(iii) Red Federal airways.

(iv) Blue Federal airways.

(3) Area navigation (RNAV) routes.


§ 71.15 Designation of jet routes and VOR Federal airways.

Unless otherwise specified, the place names appearing in the descriptions of airspace areas designated as jet routes in subpart A of FAA Order 7400.9V, and as VOR Federal airways in subpart E of FAA Order 7400.9V, are the names of VOR or VORTAC navigation aids. FAA Order 7400.9V is incorporated by reference in §71.1.


EFFECTIVE DATE NOTE: At 76 FR 53329, Aug. 26, 2011, §71.15 was amended by removing the words “FAA Order 7400.9U” and adding, in their place, the words “FAA Order 7400.9V”, effective Sept. 15, 2011 through Sept. 15, 2012.

Subpart A—Class A Airspace

§ 71.31 Class A airspace.

The airspace descriptions contained in §71.33 and the routes contained in subpart A of FAA Order 7400.9V (incorporated by reference, see §71.1) are designated as Class A airspace within which all pilots and aircraft are subject to the rating requirements, operating
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Class D airspace.

The Class D airspace areas listed in subpart D of FAA Order 7400.9V (incorporated by reference, see §71.1) consist of specified airspace within which all aircraft operators are subject to the minimum pilot qualification requirements, operating rules, and aircraft equipment requirements of part 91 of this chapter.

Subpart C—Class C Airspace

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Class C airspace.

The Class C airspace areas listed in subpart C of FAA Order 7400.9V (incorporated by reference, see §71.1) consist of specified airspace within which all aircraft operators are subject to operating rules and equipment requirements specified in part 91 of this chapter. Each Class C airspace area designated for an airport in subpart C of FAA Order 7400.9V (incorporated by reference, see §71.1) contains at least one primary airport around which the airspace is designated.

Subpart D—Class D Airspace

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Class D airspace.

The Class D airspace areas listed in subpart D of FAA Order 7400.9V (incorporated by reference, see §71.1) consist of specified airspace within which all
§ 71.71 Class E airspace.

Class E Airspace consists of:

(a) The airspace of the United States, including that airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous states and Alaska, extending upward from 14,500 feet MSL up to, but not including 18,000 feet MSL, and the airspace above FL600, excluding—

(1) The Alaska peninsula west of longitude 160°00′00″ W.; and

(2) The airspace below 1,500 feet above the surface of the earth.

(b) The airspace areas designated for an airport in subpart E of FAA Order 7400.9V (incorporated by reference, see §71.1) within which all aircraft operators are subject to the operating rules specified in part 91 of this chapter.

(c) The airspace areas listed as domestic airspace areas in subpart E of FAA Order 7400.9V (incorporated by reference, see §71.1) which extend upward from 700 feet or more above the surface of the earth when designated in conjunction with an airport for which an approved instrument approach procedure has been prescribed, or from 1,200 feet or more above the surface of the earth for the purpose of transitioning to or from the terminal or en route environment. When such areas are designated in conjunction with airways or routes, the extent of such designation has the lateral extent identical to that of a Federal airway and extends upward from 1,200 feet or higher. Unless otherwise specified, the airspace areas in the paragraph extend upward from 1,200 feet or higher above the surface to, but not including, 14,500 feet MSL.

(d) The Federal airways described in subpart E of FAA Order 7400.9V (incorporated by reference, see §71.1).

(e) The airspace areas listed as en route domestic airspace areas in subpart E of FAA Order 7400.9U (incorporated by reference, see §71.1). Unless otherwise specified, each airspace area has a lateral extent identical to that of a Federal airway and extends upward from 1,200 feet above the surface of the earth to the overlying or adjacent controlled airspace.

(f) The airspace areas listed as offshore airspace areas in subpart E of FAA Order 7400.9V (incorporated by reference, see §71.1) that are designated in international airspace within areas of domestic radio navigational signal or ATC radar coverage, and within which domestic ATC procedures are applied. Unless otherwise specified, each airspace area extends upward from a specified altitude up to, but not including, 18,000 feet MSL.

§ 71.901 Applicability.

Unless otherwise designated:

(a) Each reporting point listed in subpart H of FAA Order 7400.9V (incorporated by reference, see §71.1) applies to all directions of flight. In any case where a geographic location is designated as a reporting point for less than all airways passing through that point, or for a particular direction of
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flight along an airway only, it is so indicated by including the airways or direction of flight in the designation of geographical location.

(b) Place names appearing in the reporting point descriptions indicate VOR or VORTAC facilities identified by those names.

§ 73.5 Bearings; radials; miles.

(a) All bearings and radials in this part are true from point of origin.

(b) Unless otherwise specified, all mileages in this part are stated as statute miles.

Subpart A—General

§ 73.1 Applicability.

The airspace that is described in subpart B and subpart C of this part is designated as special use airspace. These parts prescribe the requirements for the use of that airspace.

§ 73.3 Special use airspace.

(a) Special use airspace consists of airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature, or wherein limitations are imposed upon aircraft operations that are not a part of those activities, or both.

(b) The vertical limits of special use airspace are measured by designated altitude floors and ceilings expressed as flight levels or as feet above mean sea level. Unless otherwise specified, the word “to” (an altitude or flight level) means “to and including” (that altitude or flight level).

(c) The horizontal limits of special use airspace are measured by boundaries described by geographic coordinates or other appropriate references that clearly define their perimeter.

(d) The period of time during which a designation of special use airspace is in effect is stated in the designation.

Subpart B—Restricted Areas

§ 73.11 Applicability.

This subpart designates restricted areas and prescribes limitations on the operation of aircraft within them.

§ 73.13 Restrictions.

No person may operate an aircraft within a restricted area between the designated altitudes and during the time of designation, unless he has the advance permission of

(a) The using agency described in § 73.15; or

(b) The controlling agency described in § 73.17.

§ 73.15 Using agency.

(a) For the purposes of this subpart, the following are using agencies:

(1) The agency, organization, or military command whose activity within a restricted area necessitated the area being so designated.

(b) Upon the request of the FAA, the using agency shall execute a letter establishing procedures for joint use of a restricted area by the using agency and the controlling agency, under which
§ 73.17 Controlling agency.

For the purposes of this part, the controlling agency is the FAA facility that may authorize transit through or flight within a restricted area in accordance with a joint-use letter issued under §73.15.

§ 73.19 Reports by using agency.

(a) Each using agency shall prepare a report on the use of each restricted area assigned thereto during any part of the preceding 12-month period ended September 30, and transmit it by the following January 31 of each year to the Manager, Air Traffic Division in the regional office of the Federal Aviation Administration having jurisdiction over the area in which the restricted area is located, with a copy to the Program Director for Air Traffic Airspace Management, Federal Aviation Administration, Washington, DC 20591.

(b) In the report under this section the using agency shall:

(1) State the name and number of the restricted area as published in this part, and the period covered by the report.

(2) State the activities (including average daily number of operations if appropriate) conducted in the area, and any other pertinent information concerning current and future electronic monitoring devices.

(3) State the number of hours daily, the days of the week, and the number of weeks during the year that the area was used.

(4) For restricted areas having a joint-use designation, also state the number of hours daily, the days of the week, and the number of weeks during the year that the restricted area was released to the controlling agency for public use.

(5) State the mean sea level altitudes or flight levels (whichever is appropriate) used in aircraft operations and the maximum and average ordinate of surface firing (expressed in feet, mean sea level altitude) used on a daily, weekly, and yearly basis.

(6) Include a chart of the area (of optional scale and design) depicting, if used, aircraft operating areas, flight patterns, ordnance delivery areas, surface firing points, and target, fan, and impact areas. After once submitting an appropriate chart, subsequent annual charts are not required unless there is a change in the area, activity or altitude (or flight levels) used, which might alter the depiction of the activities originally reported. If no change is to be submitted, a statement indicating “no change” shall be included in the report.

(7) Include any other information not otherwise required under this part which is considered pertinent to activities carried on in the restricted area.

(c) If it is determined that the information submitted under paragraph (b) of this section is not sufficient to evaluate the nature and extent of the use of a restricted area, the FAA may request the using agency to submit supplementary reports. Within 60 days after receiving a request for additional information, the using agency shall submit such information as the Program Director for Air Traffic Airspace Management considers appropriate. Supplementary reports must be sent to the FAA officials designated in paragraph (a) of this section.

(See secs. 307 and 313(a), Federal Aviation Act of 1958 (49 U.S.C. 1348 and 1354(a))).

[Doc. No. 15379, 42 FR 54798, Oct. 11, 1977, as amended by Amdt. 73–5, 54 FR 39292, Sept. 25, 1989; Amdt. 73–6, 58 FR 42001, Aug. 6, 1993; Amdt. 73–8, 61 FR 26435, May 28, 1996; Amdt. 73–8, 63 FR 16890, Apr. 7, 1998]

Editorial Note: The restricted areas formerly carried as §§608.21 to 608.72 of this title were transferred to part 73 as §§73.21 to 73.72 under subpart B but are not carried in the Code of Federal Regulations. For Federal Register citations affecting these restricted...
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§ 77.3 Subpart D—Aeronautical Studies and Determinations

77.25 Applicability.
77.27 Initiation of studies.
77.29 Evaluating aeronautical effect.
77.31 Determinations.
77.33 Effective period of determinations.
77.35 Extensions, terminations, revisions and corrections.

§ 77.3 Subpart E—Petitions for Discretionary Review

77.37 General.
77.39 Contents of a petition.
77.41 Discretionary review results.

§ 77.3 Definitions.

For the purpose of this part:

(a) The requirements to provide notice to the FAA of certain proposed construction, or the alteration of existing structures;

(b) The standards used to determine obstructions to air navigation, and navigational and communication facilities;

(c) The process for aeronautical studies of obstructions to air navigation or navigational facilities to determine the effect on the safe and efficient use of navigable airspace, air navigation facilities or equipment; and

(d) The process to petition the FAA for discretionary review of determinations, revisions, and extensions of determinations.

§ 77.3 Definitions.

For the purpose of this part:

Non-precision instrument runway means a runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in non-precision instrument approach procedure has been approved, or planned, and for which no precision approach facilities are planned, or indicated on an FAA planning document or military service military airport planning document.
Planned or proposed airport is an airport that is the subject of at least one of the following documents received by the FAA:

2. Airport Improvement Program requests for aid.
3. Notices of existing airports where prior notice of the airport construction or alteration was not provided as required by 14 CFR part 157.
4. Airport layout plans.
5. DOD proposals for airports used only by the U.S. Armed Forces.
6. DOD proposals on joint-use (civil-military) airports.
7. Completed airport site selection feasibility study.

Precision instrument runway means a runway having an existing instrument approach procedure utilizing an Instrument Landing System (ILS), or a Precision Approach Radar (PAR). It also means a runway for which a precision approach system is planned and is so indicated by an FAA-approved airport layout plan; a military service approved military airport layout plan; any other FAA planning document, or military service military airport planning document.

Public use airport is an airport available for use by the general public without a requirement for prior approval of the airport owner or operator.

Seaplane base is considered to be an airport only if its sea lanes are outlined by visual markers.

Utility runway means a runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less.

Visual runway means a runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan, a military service approved military airport layout plan, or by any planning document submitted to the FAA by competent authority.

§ 77.5—Notice Requirements

(a) If you propose any construction or alteration described in § 77.9, you must provide adequate notice to the FAA of that construction or alteration.

(b) If requested by the FAA, you must also file supplemental notice before the start date and upon completion of certain construction or alterations that are described in § 77.9.

(c) Notice received by the FAA under this subpart is used to:

1. Evaluate the effect of the proposed construction or alteration on safety in air commerce and the efficient use and preservation of the navigable airspace and of airport traffic capacity at public use airports;
2. Determine whether the effect of proposed construction or alteration is a hazard to air navigation;
3. Determine appropriate marking and lighting recommendations, using FAA Advisory Circular 70/7460–1, Obstruction Marking and Lighting;
4. Determine other appropriate measures to be applied for continued safety of air navigation; and
5. Notify the aviation community of the construction or alteration of objects that affect the navigable airspace, including the revision of charts, when necessary.

§ 77.7—Form and time of notice.

(a) If you are required to file notice under § 77.9, you must submit to the FAA a completed FAA Form 7460–1, Notice of Proposed Construction or Alteration. FAA Form 7460–1 is available at FAA regional offices and on the Internet.

(b) You must submit this form at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest.

(c) If you propose construction or alteration that is also subject to the licensing requirements of the Federal Communications Commission (FCC), you must submit notice to the FAA on or before the date that the application is filed with the FCC.

(d) If you propose construction or alteration to an existing structure that
§ 77.9 Construction or alteration requiring notice.

If requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA of:

(a) Any construction or alteration that is more than 200 ft. AGL at its site.

(b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:

1. 100 to 1 for a horizontal distance of 20,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 ft. in actual length, excluding heliports.

2. 50 to 1 for a horizontal distance of 10,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 ft. in actual length, excluding heliports.

3. 25 to 1 for a horizontal distance of 5,000 ft. from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section.

(c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.

(d) Any construction or alteration on any of the following airports and heliports:


2. A military airport under construction, or an airport under construction that will be available for public use;

3. An airport operated by a Federal agency or the DOD;

4. An airport or heliport with at least one FAA-approved instrument approach procedure.

(e) You do not need to file notice for construction or alteration of:

1. Any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation;

2. Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose;

3. Any construction or alteration for which notice is required by any other FAA regulation.

4. Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.
§ 77.11 Supplemental notice requirements.

(a) You must file supplemental notice with the FAA when:
(1) The construction or alteration is more than 200 feet in height AGL at its site; or
(2) Requested by the FAA.

(b) You must file supplemental notice on a prescribed FAA form to be received within the time limits specified in the FAA determination. If no time limit has been specified, you must submit supplemental notice of construction to the FAA within 5 days after the structure reaches its greatest height.

(c) If you abandon a construction or alteration proposal that requires supplemental notice, you must submit notice to the FAA within 5 days after the project is abandoned.

(d) If the construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Subpart C—Standards for Determining Obstructions to Air Navigation or Navigational Aids or Facilities

§ 77.13 Applicability.

This subpart describes the standards used for determining obstructions to air navigation, navigational aids, or navigational facilities. These standards apply to the following:

(a) Any object of natural growth, terrain, or permanent or temporary construction or alteration, including equipment or materials used and any permanent or temporary apparatus.

(b) The alteration of any permanent or temporary existing structure by a change in its height, including appurtenances, or lateral dimensions, including equipment or material used therein.

§ 77.15 Scope.

(a) This subpart describes standards used to determine obstructions to air navigation that may affect the safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities. Such facilities include air navigation aids, communication equipment, airports, Federal airways, instrument approach or departure procedures, and approved off-airway routes.

(b) Objects that are considered obstructions under the standards described in this subpart are presumed hazards to air navigation unless further aeronautical study concludes that the object is not a hazard. Once further aeronautical study has been initiated, the FAA will use the standards in this subpart, along with FAA policy and guidance material, to determine if the object is a hazard to air navigation.

(c) The FAA will apply these standards with reference to an existing airport facility, and airport proposals received by the FAA, or the appropriate military service, before it issues a final determination.

(d) For airports having defined runways with specially prepared hard surfaces, the primary surface for each runway extends 200 feet beyond each end of the runway. For airports having defined strips or pathways used regularly for aircraft takeoffs and landings, and designated runways, without specially prepared hard surfaces, each end of the primary surface for each such runway shall coincide with the corresponding end of the runway. At airports, excluding seaplane bases, having a defined landing and takeoff area with no defined pathways for aircraft takeoffs and landings, a determination must be made as to which portions of the landing and takeoff area are regularly used as landing and takeoff pathways. Those determined pathways must be considered runways, and an appropriate primary surface as defined in §77.19 will be considered as longitudinally centered on each such runway. Each end of that primary surface must coincide with the corresponding end of that runway.

(e) The standards in this subpart apply to construction or alteration proposals on an airport (including heliports and seaplane bases with marked lanes) if that airport is one of the following before the issuance of the final determination:
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(1) Available for public use and is listed in the Airport/Facility Directory, Supplement Alaska, or Supplement Pacific of the U.S. Government Flight Information Publications; or
(2) A planned or proposed airport or an airport under construction of which the FAA has received actual notice, except DOD airports, where there is a clear indication the airport will be available for public use; or,
(3) An airport operated by a Federal agency or the DOD; or,
(4) An airport that has at least one FAA-approved instrument approach.

§ 77.17 Obstruction standards.

(a) An existing object, including a mobile object, is, and a future object would be an obstruction to air navigation if it is of greater height than any of the following heights or surfaces:
(1) A height of 499 feet AGL at the site of the object.
(2) A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet.
(3) A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.
(4) A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.
(5) The surface of a takeoff and landing area of an airport or any imaginary surface established under §77.19, 77.21, or 77.23. However, no part of the takeoff or landing area itself will be considered an obstruction.
(b) Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:
(1) 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance.
(2) 15 feet for any other public roadway.
(3) 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.
(4) 23 feet for a railroad.
(5) For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it.

§ 77.19 Civil airport imaginary surfaces.

The following civil airport imaginary surfaces are established with relation to the airport and to each runway. The size of each such imaginary surface is based on the category of each runway according to the type of approach available or planned for that runway. The slope and dimensions of the approach surface applied to each end of a runway are determined by the most precise approach procedure 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 a specified radii from the center of each end of the primary surface of each runway 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 extend-
ing outward and upward from the pe-
riphery of the horizontal surface at a
slope of 20 to 1 for a horizontal distance of
4,000 feet.

(c) Primary surface. A surface longitu-
dinally centered on a runway. When
the runway has a specially prepared
hard surface, the primary surface ex-
tends 200 feet beyond each end of that
runway; but when the runway has no
specially prepared 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 the primary surface is:
(1) 250 feet for utility runways having
only visual approaches.
(2) 500 feet for utility runways having
non-precision instrument approaches.
(3) For other than utility runways, the
width is:
(i) 500 feet for visual runways having
only visual approaches.
(ii) 500 feet for non-precision instru-
ment runways having visibility mini-
mums greater than three-fourths stat-
tue mile.
(iii) 1,000 feet for a non-precision in-
strument runway having a non-preci-
sion instrument approach with visibility
minimums as low as three-fourths stat-
tue mile.
(iv) The width of the primary surface
of a runway will be that width pre-
scribed in this section for the most pre-
cise approach existing or planned for
either end of that runway.
(d) Approach surface. A surface longi-
tudinally centered on the extended
runway centerline and extending out-
ward and upward from each end of the
primary surface. An approach surface
is applied to each end of each runway
dependent 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 pri-
mary 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 non-precision instru-
mment approach;
(iv) 3,500 feet for that end of a non-
precision instrument runway other
than utility, having visibility mini-
mums greater than three-fourths of a
statute mile;
(v) 4,000 feet for that end of a non-
precision instrument runway, other
than utility, having a non-precision in-
strument approach with visibility
minimums as low as three-fourths stat-
tue mile; and
(vi) 16,000 feet for precision instru-
ment 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 non-precision 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 sub-
section for the most precise approach
existing or planned for that runway end.
(e) Transitional surface. These sur-
faces 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 preci-
sion 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.

§ 77.21 Department of Defense (DOD)
airport imaginary surfaces.

(a) Related to airport reference points.
These surfaces apply to all military
airports. For the purposes of this sec-
tion, a military airport is any airport
operated by the DOD.
Federal Aviation Administration, DOT

§ 77.25 Applicability.

(a) This subpart applies to any aeronautical study of a proposed construction or alteration for which notice to the FAA is required under §77.9.

(b) The purpose of an aeronautical study is to determine whether the aeronautical effects of the specific proposal and, where appropriate, the cumulative impact resulting from the proposed construction or alteration when combined with the effects of other existing or proposed structures, would constitute a hazard to air navigation.

(c) The obstruction standards in subpart C of this part are supplemented by other manuals and directives used in determining the effect on the navigable airspace of a proposed construction or alteration. When the FAA needs additional information, it may circulate a
§ 77.27 Initiation of studies.

The FAA will conduct an aeronautical study when:
(a) Requested by the sponsor of any proposed construction or alteration for which a notice is submitted; or
(b) The FAA determines a study is necessary.

§ 77.29 Evaluating aeronautical effect.

(a) The FAA conducts an aeronautical study to determine the impact of a proposed structure, an existing structure that has not yet been studied by the FAA, or an alteration of an existing structure on aeronautical operations, procedures, and the safety of flight. These studies include evaluating:
(1) The impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules;
(2) The impact on arrival, departure, and en route procedures for aircraft operating under instrument flight rules;
(3) The impact on existing and planned public use airports;
(4) Airport traffic capacity of existing public use airports and public use airport development plans received before the issuance of the final determination;
(5) Minimum obstacle clearance altitudes, minimum instrument flight rules altitudes, approved or planned instrument approach procedures, and departure procedures;
(6) The potential effect on ATC radar, direction finders, ATC tower line-of-sight visibility, and physical or electromagnetic effects on air navigation, communication facilities, and other surveillance systems;
(7) The aeronautical effects resulting from the cumulative impact of a proposed construction or alteration of a structure when combined with the effects of other existing or proposed structures.
(b) If you withdraw the proposed construction or alteration or revise it so that it is no longer identified as an obstruction, or if no further aeronautical study is necessary, the FAA may terminate the study.

§ 77.31 Determinations.

(a) The FAA will issue a determination stating whether the proposed construction or alteration would be a hazard to air navigation, and will advise all known interested persons.
(b) The FAA will make determinations based on the aeronautical study findings and will identify the following:
(1) The effects on VFR/IFR aeronautical departure/arrival operations, air traffic procedures, minimum flight altitudes, and existing, planned, or proposed airports listed in §77.15(e) of which the FAA has received actual notice prior to issuance of a final determination.
(2) The extent of the physical and/or electromagnetic effect on the operation of existing or proposed air navigation facilities, communication aids, or surveillance systems.
(c) The FAA will issue a Determination of Hazard to Air Navigation when the aeronautical study concludes that the proposed construction or alteration will exceed an obstruction standard and would have a substantial aeronautical impact.
(d) A Determination of No Hazard to Air Navigation will be issued when the aeronautical study concludes that the proposed construction or alteration will exceed an obstruction standard but would not have a substantial aeronautical impact. A Determination of No Hazard to Air Navigation may include the following:
(1) Conditional provisions of a determination.
(2) Limitations necessary to minimize potential problems, such as the use of temporary construction equipment.
(3) Supplemental notice requirements, when required.
(4) Marking and lighting recommendations, as appropriate.
(e) The FAA will issue a Determination of No Hazard to Air Navigation when a proposed structure does not exceed any of the obstruction standards and would not be a hazard to air navigation.
§ 77.33 Effective period of determinations.

(a) The effective date of a determination not subject to discretionary review under § 77.37(b) is the date of issuance. The effective date of all other determinations for a proposed or existing structure is 40 days from the date of issuance, provided a valid petition for review has not been received by the FAA. If a valid petition for review is filed, the determination will not become final, pending disposition of the petition.

(b) Unless extended, revised, or terminated, each Determination of No Hazard to Air Navigation issued under this subpart expires 18 months after the effective date of the determination, or on the date the proposed construction or alteration is abandoned, whichever is earlier.

(c) A Determination of Hazard to Air Navigation has no expiration date.


§ 77.35 Extensions, terminations, revisions and corrections.

(a) You may petition the FAA official that issued the Determination of No Hazard to Air Navigation to revise or reconsider the determination based on new facts or to extend the effective period of the determination, provided that:

1. Actual structural work of the proposed construction or alteration, such as the laying of a foundation, but not including excavation, has not been started; and

2. The petition is submitted at least 15 days before the expiration date of the Determination of No Hazard to Air Navigation.

(b) A Determination of No Hazard to Air Navigation issued for those construction or alteration proposals not requiring an FCC construction permit may be extended by the FAA one time for a period not to exceed 18 months.

(c) A Determination of No Hazard to Air Navigation issued for a proposal requiring an FCC construction permit may be granted extensions for up to 18 months, provided that:

1. You submit evidence that an application for a construction permit/license was filed with the FCC for the associated site within 6 months of issuance of the determination; and

2. You submit evidence that additional time is warranted because of FCC requirements; and

3. Where the FCC issues a construction permit, a final Determination of No Hazard to Air Navigation is effective until the date prescribed by the FCC for completion of the construction. If an extension of the original FCC completion date is needed, an extension of the FAA determination must be requested from the Obstruction Evaluation Service (OES).

4. If the Commission refuses to issue a construction permit, the final determination expires on the date of its refusal.

Subpart E—Petitions for Discretionary Review

§ 77.37 General.

(a) If you are the sponsor, provided a substantive aeronautical comment on a proposal in an aeronautical study, or have a substantive aeronautical comment on the proposal but were not given an opportunity to state it, you may petition the FAA for a discretionary review of a determination, revision, or extension of a determination issued by the FAA.

(b) You may not file a petition for discretionary review for a Determination of No Hazard that is issued for a temporary structure, marking and lighting recommendation, or when a proposed structure or alteration does not exceed obstruction standards contained in subpart C of this part.

§ 77.39 Contents of a petition.

(a) You must file a petition for discretionary review in writing and it must be received by the FAA within 30 days after the issuance of a determination under § 77.31, or a revision or extension of the determination under § 77.35.

(b) The petition must contain a full statement of the aeronautical basis on which the petition is made, and must include new information or facts not previously considered or presented during the aeronautical study, including...
§ 77.41 Discretionary review results.

(a) If discretionary review is granted, the FAA will inform the petitioner and the sponsor (if other than the petitioner) of the issues to be studied and reviewed. The review may include a request for comments and a review of all records from the initial aeronautical study.

(b) If discretionary review is denied, the FAA will notify the petitioner and the sponsor (if other than the petitioner), and the FCC, whenever a FCC-related proposal is involved, of the basis for the denial along with a statement that the determination is final.

(c) After concluding the discretionary review process, the FAA will revise, affirm, or reverse the determination.