

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 77

[Docket No. 26305; Notice No. 90-18]

RIN 2120-AA09

Objects Affecting Navigable Airspace

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This document proposes amendments to the standards, aeronautical studies, scope, and notice provisions concerning objects affecting navigable airspace. The proposed amendments consist primarily of changes required by recent legislation or recommended by a government-industry task group of the National Airspace Review (NAR) Advisory Committee. This document also incorporates language to cover electromagnetic interference (EMI) phenomena that could create a hazard to air navigation. Another amendment that reflects legislative requirements is a provision that the FAA consider the "cumulative impact" of proposed construction when combined with other existing and proposed construction. As an added basis for the requirement of notice, the agency is to receive notice when notice of the construction or alteration of any structure promotes the efficient use and preservation of airport traffic capacity at public-use airports. The remainder of the proposed amendments consists of NAR recommendations, the primary objective of which is to simplify and clarify existing regulations. This document also proposes the deletion of two entire subparts that pertain to the establishment of antenna farm areas and hearings.

DATES: Comments must be received on or before December 31, 1991.

ADDRESSES: Send comments on the proposal in triplicate to: Federal Aviation Administration, Office of the Chief Counsel, Attention: Rules Docket (AGC-10), Docket No. 26305, 800 Independence Avenue SW., Washington, DC 20591; or deliver comments to: Federal Aviation Administration, Rules Docket, room 915-G, 800 Independence Avenue SW., Washington, DC 20591. Comments may be examined in the rules docket weekdays, except Federal holidays between 8:30 a.m. and 5 p.m.

FOR FURTHER INFORMATION CONTACT: William C. Davis, Air Traffic Rules Branch, Airspace—Rules and Aeronautical Information Division,

Office of the Associate Administrator for Air Traffic, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone (202) 267-8783.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the proposals in this document are also invited. Substantive comments should be accompanied by cost estimates. Comments should identify the regulatory docket or notice number and should be submitted in triplicate to the Rules Docket specified above. All comments received on or before the closing date for comments specified will be considered by the Administrator before taking action on this proposed rulemaking. The proposals contained in this notice may be changed in light of comments received. All comments received will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each substantive public contact with Federal Aviation Administration (FAA) personnel concerned with this proposal will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a preaddressed, stamped postcard on which the following statement is made: "Comments to Docket No. 26305." The postcard will be date stamped and mailed to the commenter.

Availability of NPRM's

Any person may obtain a copy of this NPRM by submitting a request to the Federal Aviation Administration, Office of Public Affairs, Attention: Public Inquiry Center, APA-430, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-3484. Communications must identify the notice number of this NPRM.

Persons interested in being placed on a mailing list for future NPRM's should request from the above office a copy of Advisory Circular (AC) No. 11-2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedure.

Background

Airport and Airway Safety and Capacity Expansion Act of 1987

On December 30, 1987, the President signed the Airport and Airway Safety and Capacity Expansion Act of 1987 (Pub. L. 100-223), hereinafter referred to as the "Act." The primary purpose of the Act was to amend the Airport and Airway Improvement Act of 1982 to allow extension of the authorization of appropriations for airport and airway improvements. The Act also contained amendments to the Federal Aviation Act (FA Act), 49 U.S.C. 1501. In particular, section 206 of the Act amended section 1101 of the FA Act. Section 1101 of the FA Act pertains to submission to the FAA of notice of construction or alteration of any structure that may affect use of the navigable airspace. The amended section 1101 is set forth in its entirety below.

Sec. 1101. Hazards to safe and efficient air commerce and the preservation of navigable airspace and airport traffic capacity.

(a) *Notice of construction.* The Secretary of Transportation (hereinafter in this section referred to as the "Secretary") shall, by rules and regulations, or by order where necessary, require all persons to give adequate public notice, in the form and manner prescribed by the Secretary, of the construction or alteration, or of the proposed construction or alteration, of any structure where notice will promote safety in air commerce as well as the efficient use and preservation of the navigable airspace and of airport traffic capacity at public-use airports.

(b) *Aeronautical studies.*

(1) *Requirement.*—Where the Secretary determines, according to rules and regulations, that the construction or alteration of any structure may constitute an obstruction of navigable airspace or an interference with air navigation facilities and equipment or navigable airspace, the Secretary shall conduct an aeronautical study to determine the extent of the adverse impact, if any, on the safe and efficient use of such airspace, facilities, or equipment.

(2) *Factors to consider.*—When conducting an aeronautical study under this subsection to determine the impact of the construction or alteration of a structure, the Secretary shall thoroughly consider, according to rules and regulations, all factors relevant to the efficient and effective use of the navigable airspace, and shall consider the following:

(A) The impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

(B) The impact on arrival, departure, and en route procedures for aircraft operating under instrument flight rules.

(C) The impact on all existing public-use airports and aeronautical facilities.

(D) The impact on all planned public-use airports and aeronautical facilities.

(E) The cumulative impact resulting from the proposed construction or alteration of a

structure when combined with the impact of other existing or proposed structures.

(3) *Report.*—Upon completion of an aeronautical study under this subsection, the Secretary shall issue a report fully disclosing the extent of the adverse impact on the safe and efficient use of the navigable airspace which the Secretary determines will result from the construction or alteration of a structure.

(c) *Coordination.*—In the administration of laws relating to broadcast applications and the conduct of aeronautical studies relating to broadcast towers, the Federal Communications Commission (FCC) and the FAA shall take such action as may be necessary to efficiently coordinate the receipt, consideration of, and action upon such applications and the completion of associated aeronautical studies.

The provisions of section 1101, as amended, are reflected in the proposed revision of part 77. The FAA solicits comments on the amendatory language proposed to implement the law.

FAA and NAR-Recommended Proposals

On June 16, 1977, the FAA published Notice No. 77-7 (42 FR 30643) inviting persons to submit proposals to amend part 77. On June 17, 1978, the FAA published Notice 78-9 (43 FR 26322) announcing that the FAA would be conducting a regulatory review of part 77 and invited persons to submit recommended amendments to part 77 as agenda to a forthcoming regulatory review conference. After evaluating the proposals submitted in response to those notices, the FAA prepared a compilation of proposals which was mailed to each person responding to Notice Nos. 77-7 and 78-9. A regulatory review conference was held during the period of December 4 through 8, 1978, and the compilation of proposals was made available to the public at that time.

The NAR was a comprehensive review of airspace use and the procedural aspects of the air traffic control (ATC) system. In part, the NAR was a joint FAA/aviation industry effort to improve ATC system efficiency and effectiveness. The review was intended to facilitate the implementation of appropriate changes to airspace use and procedures within the ATC system. The NAR included participation by representatives from the aviation industry, the Department of Defense, the FAA, aviation employee organizations, and State government aviation agencies. The specific function of NAR task group 2-3.2 was to review part 77. That review resulted in 20 recommendations. The NAR recommendations contained in this proposal were submitted to the Administrator of the FAA through the NAR Executive Steering Committee on December 4, 1984. Seven additional

recommendations on which the majority of the NAR participants did not concur were also submitted to the Administrator at that time.

Effectively, most of the proposed amendments to part 77 which are not a direct result of the Act are a result of the recommendations made by NAR task group 2-3.2. In formulating its recommendations, the task group made use of:

(1) The compilation of proposals discussed above;

(2) Draft amendatory language to part 77 prepared by the FAA in response to the 1978 regulatory review conference; and

(3) Other FAA-developed recommendations for change in the current regulations.

Provisions of the Act

General

Section 1101 of the Federal Aviation Act, as amended, contains three major provisions, i.e., notice of construction, aeronautical studies, and coordination. The aeronautical studies and coordination requirements are new provisions.

Retitled Section 1101

Section 1101 of the Federal Aviation Act of 1958, as amended, is now entitled "Hazards to Safe and Efficient Air Commerce and the Preservation of Navigable Airspace and Airport Traffic Capacity."

Notice of Construction

Formerly, the general language of section 1101 required notice of construction or alteration where notice would promote safety in air commerce. The new law requires notice in situations where notice would not only promote safety in air commerce, but would also promote the efficient use and preservation of the navigable airspace and specifically "airport traffic capacity" at public-use airports. Although these effects have been major considerations in current FAA studies of the possible adverse effects of objects affecting navigable airspace, consideration of these effects is now required by statute.

Aeronautical Studies

The second major provision of section 1101, as amended, requires the Secretary to conduct aeronautical studies if a proposed structure may constitute " * * * an obstruction of navigable airspace or an interference with air navigation facilities and equipment or navigable airspace * * *." Although "interference" was not defined in the Act, the Conference Report (House of

Representatives Report 100-484, December 15, 1987) states that "interference" includes both physical and electromagnetic effects. Although the EMI effects of objects affecting navigable airspace are currently studied by the FAA under the general air safety provisions of the FA Act, the Act now requires consideration of EMI effects on the safe and efficient use of airspace. Since the FAA must first determine whether EMI will be present, its responsibilities under the law will be met by expanding the notice requirement in part 77 to include constructions or alterations which might produce EMI. In accordance with the Act, the FAA proposes to incorporate this requirement in the revised regulation. The NAR task group specifically supported expansion of the notice requirement to EMI construction or alteration. The NAR EMI recommendation is discussed below in the "Discussion of the Proposals."

The provision directing the Secretary to conduct aeronautical studies requires the Secretary to issue a full report on the adverse impact to safe and efficient use of airspace including impacts on arrival and departure procedures for aircraft operating under either visual or instrument flight rules, impacts on public-use airports and aeronautical facilities, and cumulative impacts of a structure when combined with the impact of other existing or proposed structures. All impact areas, with the exception of cumulative impact, have been a continuing part of FAA policy, practice, and procedure in measuring the impacts of objects that may affect navigable airspace. In accordance with the Act, cumulative impact, as part of aeronautical study, will be included in the revised part 77.

Coordination

Section 1101 as amended also requires the FAA and the Federal Communications Commission (FCC) to " * * * efficiently coordinate the receipt, consideration of, and action upon, such applications and the completion of associated aeronautical studies * * *." Considerable coordination currently exists between the FAA and FCC. Further coordination procedures, if necessary, will be developed between the two agencies. However, no change or amendment to the user-oriented requirements of part 77 is considered appropriate or necessary as a result of this requirement.

Discussion of the Proposals

In addition to the provisions of the Act to be incorporated into part 77, this

notice also consists of proposals in 20 different areas which cover a substantial portion of part 77. The NAR proposals constitute the bulk of proposals in 18 of the areas. In several areas, proposals are generated by the FAA. The task group presented its recommendations in the framework of a reorganized part 77. Since the NAR-generated proposals form the bulk of the proposed amendments to this regulation, all proposals contained in this notice, including those implementing the Act and those generated by the FAA, are presented and discussed within the NAR-recommended format.

Of particular significance are the proposals requiring that the FAA be given notice of electromagnetic construction or alterations; that an aeronautical study examine the cumulative impact resulting from the

proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures; and that antenna farm provisions of subpart F be revoked.

Several of the FAA-originated proposals cover the same subject area as task group recommendations. To illustrate, an FAA-originated proposal is being substituted for one of the task group recommendations—NAR 2-3.2.7. This task group recommendation, if promulgated, would have deleted the exception from the notice requirement pertaining to antennae 20 feet or less in height. This recommendation has not been adopted by the FAA and is not being proposed in this notice for reasons stated in the paragraph entitled "Proposal 7." An alternative recommendation, which would exclude any antenna structure of 20 feet or less

from the notice requirements, is being proposed in this notice. The proposed recommendation differs from the NAR recommendation in that antenna structures that would increase the height of another antenna structure or increase the height of any other structure which previously required notice would require notice even if less than 20 feet in height.

The following is a list of the proposals contained in this NPRM as identified by the appropriate NAR recommendation number and subject area. As stated above, since the NAR proposals constitute the bulk of proposals and proposed reorganization of the NPRM, the other Public Law 100-223 and FAA-generated proposals, when appropriate to a subject area, will be discussed within the framework of the NAR recommendation number.

Proposal	Recommendation	Subject area	Current	Proposed
1	NAR 2-3.2.1	Scope of subpart A.....	77.1	77.1
2	NAR 2-3.2.2	Definition of Terms.....	77.2	77.2
3	NAR 2-3.2.3	Standards.....	77.3	77.3
4	NAR 2-3.2.4	Kinds of Objects Affected.....	77.5	77.5
5	NAR 2-3.2.5	Scope of subpart B.....	77.11	77.11
6	NAR 2-3.2.6	Notice Criteria.....	77.13	77.15/21
7	NAR 2-3.2.7	Notice Not Required.....	77.15	77.17
8	NAR 2-3.2.8	Form/Time of Notice.....	77.17	77.13
9	NAR 2-3.2.9	Acknowledgment of Notice.....	77.19	77.19
10	NAR 2-3.2.10	Scope of subpart C.....	77.21	77.23
11	NAR 2-3.2.11	Obstruction Standards.....	77.23	77.25
12	NAR 2-3.2.12	Airport Imaginary Surfaces.....	77.25/28	77.27/28
13	NAR 2-3.2.13	Heliport Imaginary Surfaces.....	77.29	77.29
14	NAR 2-3.2.14	Scope of subpart D.....	77.31	77.31
15	NAR 2-3.2.15	Initiation of Studies.....	77.33	77.33
16	NAR 2-3.2.16	Aeronautical Studies.....	77.35	77.35/38
17	NAR 2-3.2.17	Discretionary Review.....	77.37	77.37
18	NAR 2-3.2.18	Effective Period.....	77.39	77.39
19	NAR 2-3.2.19	Parties to Hearings.....	77.51	77.51
20	NAR 2-3.2.20	Antenna Farm Areas.....	(¹)	(²)

¹ Subpart F.
² Revoked.

Proposal Areas

Below are summary discussions of each proposal area.

Proposal 1—(NAR Recommendation 2-3.2.1), Scope

Current § 77.1 describes the overall scope of part 77. The NAR task group recommended that this section be amended to include a definite statement of the purpose of part 77. Furthermore, the task group believed that this section should emphasize the FAA's duty to ensure the integrity of the navigable airspace and navigational facilities to promote their safe and efficient utilization. In addition, the task group recommended that two clauses be added to describe activities deserving special mention: Petitions for discretionary review of determinations

and marking and lighting of obstructions.

Finally, as a result of another recommendation of the task group, which is handled separately in this notice (see "Proposal 20"), the scope provision relating to antenna farms is proposed to be deleted.

This subject area would retain its current section number but would be entitled "Scope and Purpose."

Proposal 2—(NAR Recommendation 2-3.2.2), Definition of Terms

Current § 77.2 defines the relevant terms used in part 77. The task group was of the opinion that EMI could be hazardous to air navigation and recommended a definition of such phenomenon be included in this section.

The task group also noted that the definition for "visual runway" is

technically too specific and excludes some runways from the scope of part 77. Accordingly, the task group recommended a simplified definition that would include within its scope any runway except those designated as "precision" or "nonprecision."

Finally, the task group recommended that the definitions for two commonly used and pertinent terms be incorporated into this section. These terms are: "Airport reference point" and "established airport elevation." The group was of the opinion that these terms and their definitions would provide useful information and guidance to users.

In addition to the NAR-recommended definitions, the FAA proposes to introduce a definition of "vertiport" in part 77 to define an area designated to be used for the takeoff and landing of

tiltrotor aircraft and rotorcraft. The term "vertiport" describes a facility that is intended to be capable of accommodating both the tiltrotor aircraft as well as all existing or proposed rotorcraft (helicopters).

Tiltrotor aircraft are able to provide airline type services between communities that are too close to justify jet airplane service and too far apart to be served by rotorcraft. The part 77 surfaces applied for tiltrotor aircraft are the same as those associated with rotorcraft. Institution of similar airspace areas provides communities planning tiltrotor services a basis for assuring that the necessary airspace will be protected from encroachment.

Since airspace requirements associated with vertiports are identical to those of heliports, all references in part 77 notice and obstruction standards to heliports will also apply to vertiports.

This subject area would retain its current section number and title.

Proposal 3—(NAR Recommendation 2-3.2.3), Standards

Current § 77.3 defines the uses to which obstruction standards are applied and notes that other standards, not defined in part 77, are also used in part 77 analyses. The task group recommended language that would make the section more generic and not tied to specific acts of Congress. Specifically, the language, "transferring property of the United States under section 16 of the Federal Airport Act" would be replaced with a more general statement "disposal of Federal surplus real property for public airport purposes."

This subject area would retain its current section number and title.

Proposal 4—(NAR Recommendation 2-3.2.4), Kinds of Objects Affected

Current § 77.5 identifies the types of objects affected by the provisions of part 77. The task group identified the absence of provisions to cover a mobile object on a traverse way. The definition of a "traverse way," as used in part 77, is any surface route used by vehicles or any other mobile objects. While the subject area of traverse ways is presently covered under Subpart C—Obstruction Standards, the task group recommended that it be included in § 77.5.

This subject area would retain its current section number and title.

Proposal 5—(NAR Recommendation 2-3.2.5), Scope of Subpart B

Currently, § 77.11 defines the scope of Subpart B which concerns notice of construction or alteration. The task

group reviewed the comments made during the 1978 regulatory review, specifically, the proposed suggestion that supplemental notice should be handled in another section of this part. The task group agreed with this comment and recommended the transfer of the specifics associated with the supplemental notice provisions to a new section, § 77.21. The task group also recommended that § 77.11 be modified to emphasize that the FAA uses the notice provisions for aeronautical chart purposes and to notify potentially affected airmen.

Paragraph (b) of § 77.11 sets forth the bases for the receipt of notice, to include evaluation of the effects of construction, determination of hazardous effect on air navigation, need for marking and lighting, charting, and determination of appropriate safety measures. An added basis specifically included in the revised section 1101 of the Federal Aviation Act requires notice where such notice will promote the efficient use and preservation of airport traffic capacity at public use airports. This added basis has been included in the revised § 77.11.

This subject area would retain its current section number and title.

Proposal 6—(NAR Recommendation 2-3.2.6), Notice Criteria

Currently, § 77.13 describes the physical criteria for notifying the FAA of proposed construction or alteration. The task group recommended that since paragraphs (b) and (c) of the current § 77.13 deal with supplemental notice requirements, these paragraphs should be incorporated into a separate section dealing with that subject alone (See proposed § 77.21).

The Air Line Pilots Association (ALPA) suggested that the imaginary surfaces defined in paragraph (a) are inadequate to cover "engine-out" performance on large, multi-engine, turbine-powered aircraft and do not adequately cover the area within which potential obstructions to such aircraft may be created. For example, the construction of an obstacle that is less than 200 feet above the surface at its site, may have an adverse effect on departing aircraft with an inoperative engine even though notice to the FAA may not be required. This can occur if the construction site is higher than the elevation of the nearest runway of the nearest airport. To remedy this, ALPA suggested that a 34 to 1 slope be appended to both of the airport surfaces defined in this section. This slope would extend an additional 70,000 feet bringing the total distance beyond the runway to approximately 13 to 15 nautical miles (80,000 to 90,000 feet), the approximate

point at which the obstacle clearance area reaches the en route structure. The task group determined that ALPA's information supplied a sufficient basis for this additional criterion. A representative of the Airport Operators Council International dissented, stating that the 70,000 foot extension would impose an undue reporting burden on the public.

The FAA analysis of the task group's recommendation revealed that the additional 70,000 feet in which the public would be required to give notice of construction or alteration to the FAA would levy a substantially increased reporting burden on the public. The FAA has no evidence to conclude that a significant safety problem exists which would warrant this additional burden. In addition, the proposed notice criteria would not provide an effective means to establish whether a significant volume of aircraft were affected. Therefore, this aspect of NAR 2-3.2.6 is not proposed. For further details of the additional burden, see the text under the caption "Regulatory Evaluation Summary" in this document.

The task group also recommended that notice be required when any, rather than all, of the following conditions exist: (1) When the FAA requests notice; (2) where the construction or alteration would be in an instrument approach or departure area; or (3) where the construction or alteration might exceed an obstruction standard of subpart C. The FAA proposes a modified form of this NAR recommendation. The NAR recommendation would require proponents to be familiar with terminal instrument procedures, part 77 obstruction standards, proposed airports on file with the FAA and EMI effects. The FAA believes this to be an unreasonable burden on the public. The modified NAR recommendation as proposed by the FAA would require notice when requested by the FAA, but only when the FAA, and not the proponent, determines such impacts may be present.

The task group recommended that a new notice requirement be added to require that each sponsor notify the FAA when that sponsor proposes construction or alteration of a structure that is higher than a surface that follows the contours of the terrain at ground level and which is longitudinally centered on the runway centerline extended at a distance and width greater than the existing runway clear zone dimensions. The task group was of the opinion that such a provision would alert the FAA of potential hazards when

such construction generates substantial adverse effect on air traffic operations.

The task group also recommended a new notice requirement for construction or alteration that could cause EMI. The National Association of Broadcasters (NAB), an observer to the NAR task group, filed a formal dissent to this recommendation. Subsequent to the task group adjournment, Public Law 100-223 was enacted on December 30, 1987. Section 206 of the Act required that the part 77 notice requirement cover construction or alteration which could cause interference with air navigation facilities or equipment. It is clear that Congress intended this provision to include EMI. H.R. 2310, which became Public Law 100-223, was amended in conference. Specifically, the conference substitute on Issue 54, Tall Towers, stated the following: "Senate provision, modified to clarify that requirements cover structures which create electromagnetic interference." Accordingly, the FAA is proposing to require notice of construction or alteration that would cause EMI in accordance with the Act and the task group recommendation.

The proposed EMI notice criteria would encompass construction or alteration of radio frequency transmitting stations whose antennae are located physically below airport imaginary surfaces and which have an operating frequency above 30 Megahertz and effective radiated power above 10,000 watts. This notice requirement, as related to areas below airport imaginary surfaces contained in part 77, would capture those proposed installations whose proposed heights would not penetrate physical obstruction standards, but whose location could likely present possible EMI problems. In addition, to protect air navigation and communication aids from interference effects that may otherwise not need to be reported, notice would be required for other introductions of possible EMI activity. Other reportable actions would include changes in the authorized frequency or effective radiated power of a transmitting station within 3,000 feet of an air navigation or communication aid, construction of new FM or VHF-TV stations on existing antenna towers (side-mounting), and any alteration of existing FM and VHF-TV stations including height, frequency, and power. This subject area, excluding the provisions for supplemental notice, would be renumbered § 77.15 and would retain its current title.

Proposal 7—(NAR Recommendation 2-3.2.7), Notice Not Required

Currently, § 77.15 describes the construction or alteration for which notice under part 77 is not required. The task group examined the consequences of the "20-foot antenna" provision which excludes from the notice requirement any antenna less than 20 feet in height unless that antenna is added to an existing antenna structure. The task group used the following example: "When an antenna less than 20 feet in height is placed on an existing building that heretofore had not penetrated a "horizontal surface," notice is not required even if that "altered" structure now penetrates a surface.

The task group noted that when knowledge of the antenna is received, the FAA must make reactive procedural or operational adjustments in flight patterns, etc., to compensate for the antenna's existence. A frequent case, according to the task group, is one involving the minimum descent altitude (MDA) of an instrument approach procedure which must be raised when the FAA learns that the structure, as altered, penetrates an instrument approach slope at the MDA. The task group therefore, recommended that the "20-foot antenna" exception be deleted.

The FAA does not agree with this task group recommendation as it would create too great a reporting burden on the public, especially on those who currently have limited or no knowledge of part 77. Other members shared FAA's view. The FAA analysis of the task group's recommendation is that it would make all antennae, regardless of height, subject to the notice requirement.

Promulgation of this recommendation would significantly increase the number of required notices without providing an increased level of aviation safety. The economic and administrative impact on the public would be most severe due to the number of antenna applications from industrial and public safety radio services. Nearly all other applications would require analysis and review by the public to determine whether a notice to the FAA would be required. Moreover, in a large number of cases, the promulgation of this recommendation would result in homeowners being required to file notice with the FAA prior to the installation of a roof-mounted television antenna regardless of its height. Furthermore, a notice requirement similar to the obstruction criteria of subpart C of part 77 would be impracticable in application. The exclusion of certain structures, e.g., antenna structures of 20 feet or less in

height, has been found advantageous to both the FAA and industry. Certain necessary structures, although they may be obstructions, are therefore excluded due to their utility or the relative absence of any associated hazard.

Accordingly, this proposed section would maintain the notice exception for any antenna structure of 20 feet or less. However, this proposed section would require notice to be given for any antenna structure of 20 feet or less which would increase the height of any existing antenna and any other structure for which notice to the Administrator was previously required. A structure, for which notice has been given previously and has been studied as to its aeronautical effect(s), is usually constructed at or near the maximum height at which it presents no substantial adverse aeronautical effect. The FAA believes that notice of any increase in height of a structure, which previously required notice to the FAA, must be provided so that any new or revised aeronautical effect may be determined. The FAA believes this proposed provision would be a more practical method of dealing with the problem raised by the NAR task group.

This subject area would be renumbered § 77.17, but would retain its current title.

Proposal 8—(NAR Recommendation 2-3.2.8), Form/Time of Notice

The current § 77.17 describes the form and time of notice that must be given to the FAA in the event that § 77.13 criteria are met. The task group sought to require notice of a proposed construction or alteration as early as possible so that corrective actions might be proposed at a time when the least cost would be incurred by the proponent. The task group determined that the best way to accomplish this objective would be to require that notice be given to the FAA in conjunction with the application to local zoning authorities for a construction permit. The task group also recommended certain minor technical corrections, including placing this section before the notice criteria section (See NAR 2-3.2.6).

Independent of the task group's recommendation in this subject area, the FAA is proposing that a 60-day advance notice period be required before any construction or alteration is initiated. The existing notice criteria requires that a proponent notify the FAA 30 days in advance of construction or alteration on any project. The FAA's experience in processing notices indicates that the current 30-day waiting period is too brief and should be extended. During

this period the FAA must first identify any adverse effects the proposal may have on the navigable airspace and then, with few exceptions, circulate the proposal, with the adverse effects identified, to the aviation community and State and local governments. This circularization process normally provides for a 30-day comment period. A problem arises due to the fact that proponents may proceed with construction 30 days after their original notice, while the FAA may not act on the aeronautical study until the comment period lapses. Consequently, the 30-day advance notice of construction period does not allow the FAA to respond adequately to comments received on the circularization or, generally, to the interests of aviation safety.

This subject area would be renumbered § 77.13 but would retain its current title.

Proposal 9—(NAR Recommendation 2-3.2.9), Acknowledgment of Notice

The current § 77.19 specifies the form of the FAA acknowledgments to notices of construction or alteration. The task group consensus was that most of the existing provisions of this section are acceptable. However, the task group was of the opinion that an additional acknowledgment provision would be desirable. Such an acknowledgment would apply, at the discretion of the FAA, where no obstruction standard was violated but further study was required to determine whether the proposed construction or alteration would constitute a hazard to air navigation. The recommendation was therefore made to amend the regulation to provide for such an acknowledgment. This would give aviation users notice of a proposed construction or alteration that might create undesirable results.

This subject area would retain its current section number and title.

Proposal 10—(NAR Recommendation 2-3.2.10), Obstruction Standards, Scope

The current § 77.21 defines the scope of subpart C. Subpart C contains the standards that identify obstructions to air navigation. While the task group found this section to be largely acceptable, it was of the opinion that the statement of scope was too general with regard to aviation-related facilities. The task group therefore recommended that language be inserted in this section to enumerate the types of aviation-related facilities covered by subpart C. Such enumeration, the task group believed, would provide a clearer indication to aviation users, the public, and obstruction evaluators of the coverage,

procedures, and policy of this subpart. The task group also believed it particularly important to include language to the effect that standards other than those in subpart C may be used to study an object for any potential hazard to air navigation.

This subject area would be renumbered as § 77.23 but would retain its current title.

Proposal 11—(NAR Recommendation 2-3.2.11), Obstruction Standards

The current § 77.23 sets forth standards which enable the FAA to determine whether an aeronautical study under subpart D should be performed in relation to a proposed construction or alteration. The task group was of the opinion that this section, with few exceptions, is satisfactory. One exception concerned terminal obstacle clearance areas. The task group felt that the FAA must be able to define more specifically obstructions which would require the FAA to alter ceiling and visibility minimums or flight procedures.

In one other exception, the task group recommended that EMI be considered a potential obstruction to which the standards of this section would apply. The NAB objected to this recommendation stating that the task group was attempting to preclude or modify radio services' access to the allocated radio frequency spectrum. The NAB stated that the outcome of this recommendation would be that the FAA would assume the role of a spectrum manager and that such a role is not within the FAA's authority. Notwithstanding the NAB's objection, the task group recommended that EMI be considered as a potential obstruction. The FAA proposes this amendment to the obstruction standards because it is necessary to implement section 206 of Public Law 100-223.

This subject area would be renumbered as § 77.25 but would retain its current title.

Proposal 12—(NAR Recommendation 2-3.2.12), Airport Imaginary Surfaces

The current § 77.25 defines imaginary surfaces for areas surrounding civil airports and provides that any structure penetrating those surfaces is to be considered an obstruction. The task group examined this section with respect to its organization, coverage of departures, and treatment of displaced thresholds. The task group also reviewed recent changes to aviation statutes which make utility runways eligible for certain navigational equipment.

With regard to organization, the task group believed that the imaginary surface provisions should begin with the airport runway primary surface followed by the approach, transition, horizontal, conical, and departure surfaces.

With regard to the definition of surfaces for departures, the task group recommended the establishment of a 62.5 to 1 surface for the first 12,500 feet followed by a 38 to 1 surface out to 90,000 feet. These surfaces were proposed as a follow-on to the 34 to 1 notice criteria surface recommended in NAR 2-3.2.6. The task group rationale supporting the recommendation was that any proposed construction or alteration that might pose an obstruction to engine-out performance of large, two-engine jet aircraft should be identified.

A dissenting view noted that the current terminal instrument approach procedures (TERP) criteria do not exist to support the recommended surfaces; and, that the ultimate effect of any determination that would be based on these surfaces would be questionable, and perhaps unenforceable. The dissenting viewpoint maintained that such criteria would appropriately belong in TERP's and that including these slopes in part 77 would provide nothing except a surface below which a proponent could only be persuaded not to build the structure. However, the task group consensus supported the recommendation because of its potential to provide a basis for negotiating with proponents of construction or alteration.

Existing imaginary surfaces are designed to identify adverse effects to aeronautical operations. The identified adverse effects are then examined to determine whether they are substantial, due to their effects on a significant volume of aircraft. Only where substantial adverse effects are identified is a Determination of Hazard to Air Navigation warranted.

The FAA analysis revealed that the surfaces proposed by ALPA could not be utilized in the same manner as existing imaginary surfaces. Adverse effect would be difficult to conclude since there are no current TERPS criteria which could be used to support such a conclusion. In addition, there would never be a significant volume of aircraft affected since ALPA's concern involves a contingency plan to be used for certain aircraft only in the event of an engine failure during departure, an infrequent occurrence. Existing obstruction evaluation criteria are designed to identify obstacles that require aircraft to alter course or altitude to avoid colliding with the structure. The proposed surfaces merely

would aid the operator of a large, turbine-powered transport aircraft in the identification of a planned departure path to be used in the unlikely event of an engine failure or shutdown shortly after takeoff. Such a plan could be devised in many directions and, even then, would be utilized only on rare occasions. As a result, the proposed surfaces would have no practical value in the obstruction evaluation process.

The negotiation process is utilized in obstruction evaluation to resolve situations where a substantial adverse effect has been identified. The purpose of negotiation is to work with a proponent of construction or alteration to achieve a relocation and/or reduction in the height of a proposal that would eliminate substantial adverse effect. As explained above, however, the proposed criteria, if implemented, could not be utilized to reach a conclusion of substantial adverse effect. Therefore, the FAA does not concur with the adoption of these imaginary surfaces.

This subject area would be renumbered as § 77.27 but would retain its current title.

Proposal 13—(NAR Recommendation 2-3.2.13), Heliport Imaginary Surfaces

The current § 77.29 defines the imaginary surfaces to be used in judging whether a proposed construction or alteration in heliport environs constitutes an obstruction. The task group reviewed this section in conjunction with civilian and military heliport user input. The task group was of the opinion that changes were generally unnecessary. However, the group did recommend a change in the slope of the approach surface to make civilian standards consistent with military standards. The recommendation for the military standard would change the slope of the surface from 10:1 to 8:1.

In addition to the NAR proposal, the FAA proposes to change the title of § 77.29 to "Airport imaginary surfaces for heliports or vertiports." Vertiports are introduced into part 77 under § 77.2, Definition of Terms as identifiable ground or elevated areas to be used for the takeoff and landing of tiltrotor aircraft and rotorcraft. In the discussion of proposal area 2 dealing with definitions, it was stated that the airspace requirements associated with vertiports would be the same as those used for heliports and that notice and obstruction standards referenced throughout part 77 would be the same for both. The title and imaginary surfaces of proposed § 77.29 therefore refer to both heliports and vertiports.

This subject area would retain its current section number but would be retitled.

Proposal 14—(NAR Recommendation 2-3.2.14), Aeronautical Studies, Scope

The current § 77.31 describes the scope of subpart D, which details the performance and review of aeronautical studies. The task group was of the opinion that there is a need to clarify and emphasize that other standards, in addition to those specifically identified in subpart C, are used to evaluate proposed construction or alteration. The task group recommended that the language of § 77.31 be amended to reflect this. In addition to revising § 77.31, the FAA further proposes to add appendix A to this NPRM which would list the publications containing the relevant non-part 77 standards. The standards listed in appendix A comprise internal orders for the guidance of FAA employees and non-regulatory reference standards published as Advisory Circulars.

Also added to the scope of aeronautical studies recommended by the NAR is the requirement of Public Law 100-223 that aeronautical studies include consideration of the cumulative impact of proposed construction or alteration when combined with the impact of other existing or proposed structures. This subject area would retain its current section number and title.

Proposal 15—(NAR Recommendation 2-3.2.15), Initiation of Studies

The current § 77.33 identifies the circumstances under which an aeronautical study is to be undertaken. The task group made a technical correction to this section to reflect NAR 2-3.2.20, which would revoke subpart F, Establishment of Antenna Farm Areas.

This subject area would retain its current section number and title.

Proposal 16—(NAR Recommendation 2-3.2.16), Aeronautical Studies

Section 77.35 describes the purpose of and process by which aeronautical studies are conducted. The task group reviewed this section with regard to how thoroughly it describes the elements of a study and how consistent it is with current practices.

The task group recommended that the description of the elements of an aeronautical study be separated from the description of the determination. The task group also recommended that provisions be included to ensure comments would be solicited whenever a study is undertaken. The solicitation, in the task group's opinion, would

provide users with notice of the proposal as well as the opportunity to identify and notify the FAA of any potential problems.

The task group also recommended that the current language concerning determinations be amended to provide more detail and to conform more closely to the current FAA practice in processing aeronautical studies.

Both the NAR recommendations and the specific requirements of Public Law 100-223 relating to necessary elements of study are included in proposed § 77.35. These elements include the specific requirements to consider aeronautical effects on airport capacity and the cumulative impact of proposed construction when combined with the effects of other existing or proposed structures.

This subject area would be divided into two sections, § 77.35, Evaluating aeronautical effect, and § 77.36, Determinations. Also, in these sections and in the section on discretionary review, references to "Regional Director" have been changed to "Manager, Air Traffic Division" in accordance with FAA organizational changes.

Proposal 17—(NAR Recommendation 2-3.2.17), Discretionary Review

The current § 77.37 describes the circumstances under which discretionary reviews of determinations may be granted and performed. The task group reviewed this section and was of the opinion that the basis for petitioning and granting discretionary reviews is not adequately delineated. The task group also felt that by including more detailed language, proponents would feel confident that arguments for discretionary review would be considered and not dismissed on purely technical grounds. Accordingly, more detailed language associated with the petitioning and granting of discretionary reviews was recommended by the task group to be included in § 77.37.

The effective period in which to file a petition for discretionary review would also be expanded from 30 to 45 days to enable petitioners sufficient time in which to file. This proposal is made by the FAA in recognition of the fact that 30 days allows petitioners insufficient time to receive the determination, prepare an aeronautical objection, and have it received by the agency within this limited time period. The petition for discretionary review would be effectively filed if it is received by the Administrator of the FAA within the 45-day period. In computing the 45-day period, the last day of the period shall

not include a Saturday, Sunday, or legal holiday, but shall be the next day which is not one of the aforementioned days.

This subject area would retain its current section number but would be retitled "Petitions for discretionary review."

Proposal 18—(NAR Recommendation 2-3.2.18), Effective Period

The current § 77.39 describes the time period during which a determination of no hazard to air navigation issued under subpart B, D, or E is effective.

The task group recommended that the subject material of § 77.39 be separated into two subject areas: Effective period of determination, and extensions. The task group was of the opinion that while an 18-month initial effective period for a no hazard determination is appropriate, extensions should be granted only under exceptional circumstances. Specifically, the task group recommended that automatic extensions should not be granted.

Although not inclined to treat FCC construction permit/license applicants differently from others with regard to extensions, the task group did note that confusion might arise if governmental decisions were not coordinated. As a result, the task group recommended that extensions to FCC applicants should be granted only where an application has in fact been filed with the FCC and the sponsor produces evidence that additional time is warranted due to FCC requirements. Further, the task group recommended that the regulation be amended so that an extension is required when the FCC has extended the initial construction date of a previously granted permit.

This subject area would be divided into two sections, § 77.39, Determination effective period, and § 77.40, Extension or reconsideration of determination of no hazard to air navigation. The effective date of a determination of no hazard to air navigation is extended from 40 to 55 days to allow for the increased time to submit a petition for discretionary review.

Proposal 19—(NAR Recommendation 2-3.2.19), Parties to Hearings

The current subpart E lists the rules of practice for a public hearing concerning a proposed construction or alteration of a structure. As distinct from the process under subpart E, the present petition for review procedures based on written materials (§ 77.37) permit petitioners (or proponents if they are not the petitioners) to submit written material and information supporting their positions.

The hearing procedures cited in subpart E have not been utilized in recent years due to the fact that petitioners are given ample opportunity to submit all the material they believe is necessary to support their positions. Further, the courts have upheld a review process exclusively based on the submission of written materials by the petitioner. In addition, the FAA is proposing to add a new § 77.37(e) to ensure that petitioners who wish to submit material in support of their positions will be given notice if the FAA plans to review additional issues not cited in petitioners' petitions for review. For all of the above reasons, the FAA is proposing to delete subpart E in its entirety.

Proposal 20—(NAR Recommendation 2-3.2.20), Antenna Farm Areas

The current subpart F describes the scope, policy, and general provisions for the establishment of antenna farms. The task group noted that the provisions of subpart F are consistent with the task group's views regarding efficient airspace utilization. However, the group was of the opinion that the interference and related complications generated from antennae in proximity to each other tend to make antenna farms infeasible. Also, no antenna farms have been designated under existing subpart F.

The task group, therefore, recommended that this subpart be revoked. However, certain basic tenets associated with this subject area would be retained in the proposed amendment to § 77.35 contained in this notice. Specifically, proposed construction of a limited number of antennae in proximity to other antennae would still be encouraged and would be considered in the aeronautical study process. Therefore, subpart F would be revoked in its entirety.

Paperwork Reduction Act

Information collection requirements for part 77 have previously been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (Pub. L. 96-511) and have been assigned OMB Control Number 2120-0001. To the extent that new requirements would be added by this rule, if adopted, the information collection reporting requirements would be amended to reflect the change.

Regulatory Evaluation Summary

Introduction

Executive Order 12291 dated February 17, 1981, directs Federal agencies to

promulgate new regulations or modify existing regulations only if the potential benefits to society for the regulatory change outweigh the potential costs. The order also requires the preparation of a draft Regulatory Analysis of all "major" proposals except those responding to emergency situations or other narrowly defined exigencies. A "major" proposal is one that is likely to result in an annual effect on the economy of \$100 million or more, a major increase in consumer costs, a significant adverse effect on competition or is highly controversial.

This proposed regulatory action is determined not to be "major" as defined in the executive order, so a full draft Regulatory Analysis identifying and evaluating alternative proposals has not been prepared. A more concise draft Regulatory Evaluation has been prepared, however, which is limited to only this proposal and does not identify any alternatives. This draft evaluation is included in the docket, and quantifies, to the extent practicable, estimated costs to the private sector, consumers, Federal, State, and local governments, as well as anticipated benefits and impacts.

A summary of the draft Regulatory Evaluation is contained in this section. For a more detailed analysis, the reader is referred to the full draft evaluation contained in the docket. This section also contains an initial Regulatory Flexibility notice criteria cited in § 77.15 (b)(1) through (b)(4) and the new notice requirements of the "20-foot antenna" provision specified in § 77.17(e), the balance of the proposals contained in this NPRM will have a negligible or no-cost impact.

The costs and benefits associated with this proposal are summarized below. Total costs associated with the amendments determined to have a cost impact are estimated to be between \$239,000 and \$402,000 over a ten-year period. Total benefits are estimated to be about \$4 million over the same period. Those elements of the rule determined to have a negligible or no cost impact are identified and explained in appendix A of the full regulatory evaluation. The amendments contained in appendix A essentially restructure and clarify this part and are likely to produce cost savings as a result of improved understanding on the part of proponents, local officials, and the FAA. The savings associated with these improvements, however, are considered unquantifiable.

A copy of the Regulatory Evaluation prepared for this action is available for review in Docket No. 26305, and a copy may be obtained by contacting the

person identified under the caption, "FOR FURTHER INFORMATION CONTACT."

Cost and Benefit Summary

Section 77.15(a)(4) (i) through (iv)—Construction or alteration requiring notice. The proposal adds new notice surfaces whose areas follow ground contours that are Determination required by the Regulatory Flexibility Act of 1980 and an International Trade Impact Analysis.

The primary objective of these proposed amendments to part 77 is to substantially revise and reorganize the regulation to enable the public to better understand its requirements. A secondary objective is to eliminate loopholes identified by aviation users and the FAA which allow disruption of air navigation operations. Finally, the rule defines the standards for the electromagnetic effects of construction or alteration that would require notice under this part and proposes the revocation of the rules of practice for hearings of subpart E and the antenna farm provisions of subpart F. This NPRM is a result of the recommendations of task group 2-3.2 of the NAR Program, the FAA's experience in the administration of the rule since its adoption on December 12, 1962, and the mandates of Public Law 100-223. In developing its recommendations, task group 2-3.2 reviewed part 77 in its entirety, taking into account a 1978 regulatory review of the rule along with the comments received on a 1980 draft document. The task group formulated 20 major recommendations which proposed multiple changes to subparts A through F of part 77.

These amendments would potentially affect the private and public sectors in the vicinity of the 5,920 public-use airports currently subject to this part. The FAA has determined that, with the exception of the new construction or alteration requirements defined in § 77.15(a)(4) (i) through (iv), the EMI longitudinally centered on the runway centerline and which extend beyond the runway end no more than 3,000 feet and with widths no greater than 3,000 feet. Thus, any sponsor of a construction or alteration project located in the newly defined area that is of greater height than the elevation of the terrain at the proposed construction or alteration site must notify the FAA.

Costs: The proposal is likely to impose on proponents minimal discounted total costs ranging from \$2,625 to \$4,594 over the 10-year period following its enactment.

Benefits: The FAA has not been able to quantify the savings in time and resources to proponents, local officials,

and to the FAA that would result from this proposal. However, if during the same 10-year period the proposal prevents the forced relocation of one navigational aid with a present value exceeding \$4,577, the rule would be cost effective.

Section 77.15(b) (1), (2), (3), and (4)—Construction or alteration requiring notice. New § 77.15 (b)(1) through (b)(4) add electromagnetic construction or alteration notice criteria to part 77.

Thus, sponsors of construction or alteration would be required to file notice with the FAA if their projects meet or exceed the following criteria—

(1) Any construction or alteration of a radio frequency transmitting station with an operating frequency above 30 Megahertz (Mhz) and an effective radiated power (ERP) above 10,000 watts that has its antenna physically located below the airport imaginary surfaces of § 77.25, § 77.28, or § 77.29 applicable to the airport concerned.

(2) Any initial or modified operation of a transmitting station, including a change in authorized frequency or effective radiated power, within 3,000 feet of an air navigation or communications aid.

(3) Any construction of a new FM or VHF-TV station utilizing an existing antenna tower.

(4) Any alteration, including changes in authorized frequency, effective radiated power, antenna height, and antenna type of existing FM and VHF-TV stations.

Costs: Compliance with proposed § 77.15 (b)(1) through (b)(4) is estimated to impose present value costs on proponents ranging from \$237,000 to \$397,000 over the 10-year period following enactment of the rule. These costs are based on the assumption that approximately 1500 proponents will be required to file notice annually under § 77.15 (b)(1) and (b)(3), and between 3000 and 6000 notifications will be required to be filed annually under § 77.15 (b)(2) and (b)(4).

Benefits: The prevention of disruptions of vital communications and navigational aids estimated to have a 10-year discounted value of approximately \$4 million.

Section 77.17(e)—Construction or alteration requiring notice. Section 77.17(e) is amended to include notice requirements for antennae less than 20 feet in height that would increase the height of a structure for which a previous notice was required under this part.

Cost: The cost associated with compliance has not been quantified. The FAA believes however, that enactment of the proposal will result in relatively

few new notices and, therefore, minimal costs.

Benefit: Benefits are not quantifiable. Undetermined benefits are expected to accrue to the aviation public from the prevention of disruption of the navigable airspace caused by low-height antennae in the vicinity of public-use airports. The FAA believes that the benefits of this proposal, although unquantifiable, will be greater than the minimal cost of compliance.

International Trade Impact Analysis

The FAA has determined that, because the proposed changes would only affect enterprises located in U.S. communities, the sale of foreign products domestically or the sale of U.S. products or services in foreign countries will not be influenced. Therefore, the FAA has determined that this rule will not eliminate existing or create additional barriers to the sale of foreign aviation products or services in the United States. The FAA has also determined that the rule will not eliminate existing or create additional barriers to the sale of U.S. aviation products and services in foreign countries.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 requires agencies to specifically review proposed rulemaking actions to determine if they have a "significant economic impact on a substantial number of small entities." This proposal is likely to impact individual or business entities proposing to construct or modify a structure that meets the notice requirements of part 77 in the vicinity of the 5,850 public airports, heliports, vertiports, and seaplane bases considered in this analysis. This proposal will require only that proponents of construction or alteration projects give notice to the FAA in the manner and form prescribed by this part. The cost associated with completing and submitting a notice form (FAA-7469-1) is estimated to be \$8.12. The minimum threshold used by the FAA to make determinations pursuant to the Regulatory Flexibility Act is \$3,800 per year. A small entity would have to file 467 notices per year ($467 \times \$8.12 = \$3,806$) to exceed the minimum threshold established for significant economic impact. The FAA believes that the probability of this occurring is extremely remote. Thus, the FAA has concluded that this proposal will not have a significant economic impact on a substantial number of small entities.

Federalism Implications

The regulations proposed herein would not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. Thus, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Conclusion

For the reasons discussed in the preamble, and based on the findings in the Regulatory Evaluation and Regulatory Flexibility Determination, the FAA has determined that this proposed regulation is not major under Executive Order 12291 and is not considered significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). In addition, the FAA certifies that this proposal, if adopted, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. An initial regulatory evaluation of the proposal, including a Regulatory Flexibility Determination, has been placed in the docket. A copy may be obtained by contacting the person identified under **FOR FURTHER INFORMATION CONTACT**.

List of Subjects in 14 CFR Part 77

Administrative practice and procedure, Airports, Airspace, Aviation safety, Navigation (air), Reporting and recordkeeping requirements.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me, the FAA proposes to revise part 77 of the Federal Aviation Regulations, (14 CFR part 77) as follows:

PART 77—OBJECTS AFFECTING NAVIGABLE AIRSPACE**Subpart A—General**

- Sec.
77.1 Scope and purpose.
77.2 Definition of terms.
77.3 Standards.
77.5 Kinds of objects affected.

Subpart B—Notice of Construction or Alteration

- 77.11 Scope.
77.13 Form and time of notice.
77.15 Construction or alteration requiring notice.
77.17 Construction or alteration not requiring notice.
77.19 Acknowledgment of notice.
77.21 Supplemental notice requirements.

Part C—Obstruction Standards

- 77.23 Scope.
77.25 Standards for determining obstructions.
77.27 Civil airport imaginary surfaces.
77.28 Military airport imaginary surfaces.
77.29 Airport imaginary surfaces for heliports or vertiports.

Subpart D—Aeronautical Studies of Effect of Proposed Construction on Navigable Airspace

- 77.31 Scope.
77.33 Initiation of studies.
77.35 Evaluating aeronautical effect.
77.36 Determinations.
77.37 Petitions for discretionary review.
77.39 Determination effective period.
77.40 Extension or reconsideration of determination of no hazard to air navigation.

Appendix A—FAA Documents Used in Aeronautical Studies

Authority: 49 U.S.C. 1348, 1354, 1421 through 1430, 1501; 49 U.S.C. 1005(g) (Revised Pub. L. 97-449, January 12, 1983; revised Pub. L. 100-223, December 30, 1987).

Subpart A—General**§ 77.1 Scope and purpose.**

The purpose of this part is to protect the navigable airspace and navigation facilities for their safe and efficient utilization by aircraft and to preserve airport traffic capacity. To accomplish these purposes, this part:

- Establishes standards for determining obstructions in navigable airspace;
- Sets forth the requirements for notice to the Administrator of certain proposed construction or alteration;
- Provides for aeronautical studies of obstructions to air navigation to determine the effect on the safe and efficient utilization of navigable airspace by aircraft and on air navigation or communication facilities;
- Establishes provisions for the marking and lighting of obstructions to air navigation as a condition for a determination of no hazard, when the Administrator finds it necessary;
- Provides procedures for petitioning the Administrator for a discretionary review of determinations, revisions, and extensions issued.

§ 77.2 Definition of terms.

For the purpose of this part:
A seaplane base is considered to be an airport only if its sea lanes are outlined by visual markers.

Airport available for public use means an airport that is open to the general public with or without a prior request to use the airport.

Airport reference point means the computed geometric airport center described in latitude and longitude, usually to the nearest second, having equal relationship to all existing and proposed landing and takeoff areas.

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

Electromagnetic effect means any harmful effect on the availability or quality of navigation or communication signals to or from aircraft, meteorological equipment, navigation equipment, communications equipment, or air traffic control facilities caused by a power source, radio frequency transmitter, or an object or surface which emits, reflects, or re-radiates an electromagnetic signal or electrical pulse.

Established airport elevation means the highest point of an airport's usable runways measured in feet above mean sea level.

Nonprecision instrument runway means any runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance or area navigation type equipment, for which a nonprecision instrument approach procedure that meets straight-in alignment criteria has been approved or planned, and for which no precision approach facilities are planned or indicated on an FAA planning document or military airport planning document.

Planned or proposed airport for which notice is on file means any of the following documents received by the FAA—

- Airport proposals submitted pursuant to the provisions of part 157 of this chapter;
- Airport Improvement Program requests for aid;
- Notices of existing airports where prior notice of the airport construction or alteration was not provided as required by part 157 of this chapter;
- Airport layout plans, including consideration of the effect of structures which may restrict control tower line-of-sight capability and effects upon electronic and visual aids to air navigation;
- Military proposals for military airports used only by the armed forces;
- Military proposals on joint-use (civil-military) airports;
- Proposed designation of precision instrument landing runways; and
- Completed airport site selection feasibility studies and recommendations.

Precision instrument runway means—

- Any runway having an existing instrument approach procedure utilizing an Instrument Landing System, a Microwave Landing System, or a Precision Approach Radar; or
- A runway for which a precision approach procedure or system has been

designated or 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 a military service airport planning document.

Utility runway means a runway that is to be used by aircraft of 12,500 pounds maximum gross weight or less.

Vertiport means an identifiable ground or elevated area, including any buildings or facilities thereon, that has been designated to be used for the takeoff and landing of tiltrotor aircraft and rotorcraft.

Visual runway means a runway, existing or planned, which is other than precision or nonprecision.

§ 77.3 Standards.

(a) The standards established in this part for determining obstructions to air navigation are used by the Administrator in—

(1) Administering the Federal-aid to Airports Program and the Surplus Airport Program;

(2) Disposal of Federal surplus real property for public airport purposes;

(3) Developing technical standards and guidance in the design and construction of airports; and

(4) Imposing requirements for public notice of the construction or alteration of any structure where notice will promote air safety and preservation of airport capacity.

(b) The standards used by the Administrator in the establishment of flight procedures and aircraft operational limitations are not set forth in this part but are contained in other publications of the Administrator (see appendix A of this part).

§ 77.5 Kinds of objects affected.

This part applies to—

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

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

(c) Any mobile object on a traverse way.

Subpart B—Notice of Construction or Alteration

§ 77.11 Scope.

(a) This subpart requires each person proposing any kind of construction or alteration described in § 77.15 of this

part to give adequate notice to the Administrator. This subpart also specifies the locations and dimensions of the construction or alteration for which notice is required and prescribes the form and manner of the notice. It also requires supplemental notices before the start and upon completion of certain construction or alteration that was the subject of a notice under § 77.15.

(b) Notices received under this subpart provide a basis for—

(1) Evaluating the effect of the construction or alteration on existing or planned operational procedures and on airport traffic capacity at public-use airports;

(2) Determinations of whether the effect of proposed construction or alteration would constitute a hazard to air navigation;

(3) Recommendations for identifying the construction or alteration in accordance with the current Federal Aviation Administration Advisory Circular AC 70/7460-1 entitled "Obstruction Marking and Lighting," which is available without charge from the U.S. Department of Transportation, Utilization and Storage Section, M443.2, Washington, DC 20590;

(4) Determining other appropriate measures to be applied for continued safety of air navigation; and

(5) Charting and other notification to airmen of the construction or alteration of objects that affect the navigable airspace.

§ 77.13 Form and time of notice.

(a) Each person who is required to submit a notice to the Administrator under § 77.15 shall send one executed set of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, of the FAA regional office having jurisdiction over the area within which the construction or alteration will be located. Copies of FAA Form 7460-1 may be obtained from the headquarters of the FAA and from the regional offices.

(b) The notice required under § 77.15 must be submitted at least 60 days before the earlier of the following dates:

(1) The date the proposed construction or alteration is to begin.

(2) The date an application for any type of a State or local government construction permit is filed, including any application filed in compliance with State aeronautical and/or local zoning or land use authorities requirements.

However, a notice relating to proposed construction or alteration that is subject to the licensing requirements of the Federal Communications Act must be

submitted to the FAA on or before the date that the application is filed with the Federal Communications Commission (FCC).

(c) A proposed structure or a proposed alteration to an existing structure that exceeds 2,000 feet in height above the ground will be presumed to be a hazard to air navigation and to result in an inefficient utilization of airspace, and the applicant has the burden of overcoming that presumption. Each notice submitted under this part proposing a structure in excess of 2,000 feet above ground, or an alteration that will make an existing structure exceed that height, must contain a detailed explanation to demonstrate that the proposal would not constitute a hazard to air navigation or an inefficient utilization of airspace. Where the FAA does not conclude that a proposed construction or alteration would result in an inefficient utilization of the navigable airspace or be a hazard to air navigation, a determination of no hazard to air navigation would be issued.

(d) In the case of an emergency involving essential public services, public health, or public safety, that requires immediate construction or alteration, the advance notice requirement in paragraph (b) of this section will not apply and the notice may be sent to the FAA by telephone, telegraph, or other expeditious means. However, an executed FAA Form 7460-1 must be submitted within 5 days thereafter. Outside normal business hours, emergency notices by telephone or telegraph may be submitted to the nearest FAA flight service station.

§ 77.15 Construction or alteration requiring notice.

Except as provided in § 77.17, each sponsor who proposes any of the following types of construction or alteration shall notify the Administrator in the form and manner prescribed in § 77.13—

(a) Physical construction and/or alteration.

(1) Any construction or alteration of more than 200 feet in height above the ground level at its site.

(2) Any construction or alteration of greater height than an imaginary surface extending outward and upward at one of the following slopes—

(i) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport described in paragraph (a)(5) of this section with its longest runway more than 3,200 feet in actual length, excluding heliports or vertiports.

(ii) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport described in paragraph (a)(5) of this section with its longest runway no more than 3,200 feet in actual length, excluding heliports or vertiports.

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

(3) Any highway, railroad, or other traverse way for mobile objects, of a height which would exceed a standard of paragraph (a) (1) or (2) of this section if the surface height of the way is increased by—

(i) 17 feet for an Interstate Highway that is a part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance;

(ii) 15 feet for any other public roadway;

(iii) 10 feet for a private road or the height of the highest mobile object, whichever is greater, that would normally traverse that road;

(iv) 23 feet for a railroad; or

(v) 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.

(4) Any construction or alteration of greater height than a surface that follows the contours of the terrain at ground level and which is longitudinally centered on the runway centerline extended at a distance of—

(i) 2,000 feet from runway end at a width of 1,500 feet for nonmilitary runways less than 5,000 feet in length;

(ii) 3,000 feet from runway end at a width of 2,000 feet for nonmilitary runways of 5,000 feet or greater in length;

(iii) 3,000 feet from runway end at a width of 1,000 feet for military runways less than 8,000 feet in length; or

(iv) 3,000 feet from runway end at a width of 3,000 feet for military runways 8,000 feet or greater in length.

(5) Any construction or alteration on any of the following airports (including heliports, vertiports, and seaplane bases):

(i) An airport that is available for public use and is listed in the Airport Facility Directory, Supplement Alaska, or Chart Supplement Pacific of the U.S. Government Flight Information Publications;

(ii) An airport under construction, that is the subject of a notice or proposal on file with the FAA, and—

(A) The airport is a military airport; or

(B) There is a clear indication that the airport will be available for public use;

(iii) An airport operated by a Federal agency or military department of the United States.

(6) When requested by the FAA, any structure meeting one of the following—

(i) When the structure would be in an instrument approach or departure area defined in the FAA standards governing instrument procedures;

(ii) When available information indicates the construction or alteration might exceed a standard of subpart C of this part for an airport available for public use that is the subject of a notice or proposal on file with the FAA; or,

(iii) When available information indicates the construction or alteration might affect an air navigation or communication aid.

(b) Construction or alteration having electromagnetic effect.

(1) Any construction or alteration of a radio frequency transmitting station with an operating frequency above 30 megahertz and an effective radiated power above 10,000 watts that has its antenna physically located below the airport imaginary surfaces of § 77.27, § 77.28, or § 77.29 applicable to the airport concerned.

(2) Any initial or modified operation, including a change in the authorized frequency or effective radiated power, of a transmitting station located within 3,000 feet of an air navigation or communications aid.

(3) Any construction of a new FM or VHF-TV station utilizing an existing antenna tower.

(4) Any alteration, including changes in authorized frequency, effective radiated power, antenna height, and antenna type of existing FM and VHF-TV stations.

§ 77.17 Construction or alteration not requiring notice.

No person is required to notify the Administrator for any of the following construction or alteration—

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

(b) Any existing or proposed air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting siting criteria approved by the Administrator or an appropriate military service on military airports, the

location and height of which are fixed by its function.

(c) Any construction or alteration for which notice is required by any other FAA regulation.

(d) Any construction or alteration, which, pursuant to the conditions of a Federal grant, requires an approved current airport layout plan.

(e) Any antenna structure of 20 feet or less in height that would not increase the height of an existing antenna structure or other structure that previously required or would require notice under this part.

§ 77.19 Acknowledgment of notice.

(a) The FAA acknowledges in writing the receipt of each notice submitted under § 77.15.

(b) If the construction or alteration proposed in a notice is one for which lighting or marking standards are prescribed in the FAA Advisory Circular AC 70/7460-1 entitled "Obstruction Marking and Lighting," the acknowledgment contains a statement to that effect and a statement on how the structure should be marked and lighted in accordance with the advisory circular.

(c) The acknowledgment will state that an aeronautical study of the proposed construction or alteration has resulted in a determination that the construction or alteration:

(1) Is not identified as an obstruction under any standard of subpart C of this part and would not have an adverse effect on air navigation;

(2) Is identified as an obstruction under the standards of subpart C but would not have a substantial adverse effect on air navigation;

(3) Is identified as an obstruction under the standards of subpart C and further aeronautical study is necessary to determine whether it would be a hazard to air navigation, that the sponsor may request further study within 30 days, and that, pending completion of any further aeronautical study, it is presumed the construction or alteration would be a hazard to air navigation; or

(4) Is not identified, as an obstruction under any standard of subpart C of this part, but further aeronautical study is necessary to determine whether it would be a hazard to air navigation. Pending completion of any further aeronautical study it is presumed that the construction or alteration would be a hazard to air navigation.

§ 77.21 Supplemental notice requirements.

(a) Each sponsor who plans to initiate construction or alteration that was the

subject of a notice under this subpart and is advised by an FAA regional office that a supplemental advance notice of construction is required, shall submit such notice on FAA Form 7460-2 to be received within the time limits specified by the requesting FAA regional office. If no time limit has been specified, then the supplemental advance notice of construction shall be submitted in sufficient time so as to be received by the requesting FAA regional office at least 5 days before the start of construction.

(b) Each sponsor who undertakes construction or alteration requiring notice under this subpart shall, within 5 days after such construction or alteration reaches its greatest height, submit a supplemental notice on FAA Form 7460-2 to the FAA regional office having airspace jurisdiction over the area involved provided—

(1) The construction or alteration is more than 200 feet in height above the ground level at its site; or

(2) An FAA regional office advises that submission of the form is required.

(c) Each sponsor who abandons a construction or alteration project that was the subject of a notice under this subpart and for which a supplemental notice was required, shall notify the FAA regional office having airspace jurisdiction over the area involved, either in writing or on FAA Form 7460-2, within 5 days after the project is abandoned.

(d) Each sponsor who dismantles or suffers the destruction of a construction or alteration that was the subject of a notice under this subpart and for which a supplemental notice was required, shall notify the FAA regional office having airspace jurisdiction over the area involved within 5 days after the construction or alteration is dismantled or destroyed. This notice must be in writing and be submitted on FAA Form 7460-2.

Subpart C—Obstruction Standards

§ 77.23 Scope.

(a) This subpart establishes standards for determining obstructions to air navigation relative to the safe and efficient utilization of navigable airspace by aircraft along with the operation of planned or existing air navigation facilities to include air navigation aids, airports, Federal Airways, instrument approach or departure procedures, and approved off-airway routes. Objects that are identified as obstructions under the standards described in this subpart are presumed to be hazards to air navigation unless an aeronautical study,

made in accordance with subpart D of this part, determines otherwise. Once an aeronautical study has been initiated, the standards listed in appendix A of this part, in addition to those listed in this subpart, shall be used to determine if the object being studied would constitute a hazard to air navigation. The standards in this subpart apply to existing and proposed manmade objects as well as to objects of natural growth and terrain. These standards will be applied with reference to an existing airport facility or use as well as to a planned facility or use, if a proposal for such a facility or use is on file with the FAA or with the appropriate military service on the date the § 77.15 notice is filed.

(b) At those airports having defined runways with specially prepared hard surfaces, the primary surface for each such runway extends 200 feet beyond each end of the runway. At those airports having defined strips or pathways that are used regularly for aircraft takeoffs and landings and have been designated by the appropriate authority as runways, but do not have specially prepared hard surfaces, each end of the primary surface for each such runway shall coincide with the corresponding end of the runway. At those airports, excluding seaplane bases, having a defined landing and takeoff area with no defined pathways for aircraft takeoffs and landings, a determination shall be made as to which portions of the landing and takeoff area are regularly used as landing and takeoff pathways. Those pathways so determined shall be considered runways and an appropriate primary surface as defined in § 77.27 will be considered as longitudinally centered on each such runway, and each end of that primary surface shall coincide with the corresponding end of that runway.

(c) The standards in this subpart apply to the effect of proposed construction or alteration upon an airport (including heliports, vertiports and seaplane bases), if, at the time of filing of the notice required by § 77.15, that airport is—

(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 that is the subject of a notice or proposal on file with the FAA, and with the exception of military airports, where there is a clear indication the airport will be available for public use; or,

(3) An airport that is operated by a Federal agency or an armed force of the United States.

§ 77.25 Standards for determining obstructions.

(a) An object, including a mobile object, is an obstruction to air navigation if it is of greater height than any of the following heights or surfaces—

(1) A height of 500 feet above ground level at the site of the object.

(2) A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports or vertiports, 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 500 feet.

(3) A height within a terminal instrument flight procedures 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, or which would require additional or new ceiling and/or visibility restrictions or a change in flight procedures applicable to departures within that area;

(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 require an increase of an existing or planned minimum obstacle clearance altitude; or

(5) The surface of a takeoff and landing area of an airport or any imaginary surface established under § 77.27, § 77.28, or § 77.29. 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 ATC service, a traverse way used or to be used for the passage of mobile objects will be considered, for purposes of paragraph (a) of this section, to be an object of a height equal to the elevation of the traverse way increased by—

(1) Seventeen 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) Fifteen feet for any other public roadway.

(3) For a private road, ten feet or the height of the highest mobile object, whichever is greater, that would normally traverse the road.

(4) Twenty-three 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.

(c) An object is identified as an obstruction to air navigation if an engineering analysis discloses that it would cause electromagnetic interference with aeronautical communications or air navigation aids signals, transmissions, or reception, or if it would be in conflict with any air navigation or communication aid siting criteria limitation established by the FAA in other publications listed in appendix A of this part.

§ 77.27 Civil airport imaginary surfaces.

(a) *General.* The civil airport imaginary surfaces in this section are established in relation to the airport and each runway end to identify those objects that may affect airport planning and arrival or departure procedures. The imaginary surfaces are necessarily lower than required aircraft operational surfaces in order to identify obstructions which are potential hazards to air navigation. The size of each imaginary surface is based on the category of each runway according to the type of procedure available or planned for that runway. The slope and dimensions of the surface applied to each end of a runway are determined by the most precise departure or arrival procedure existing or planned for that runway end.

(b) *Primary surface.* A surface longitudinally centered on a runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. At those airports having defined runways with specially prepared hard surfaces or planned hard surfaces, the primary surface extends 200 feet beyond each end of the runway; but when the runway has no specially prepared hard surfaces or planned hard surface, or the sea lanes of a seaplane base are outlined by visual markers, the primary surface ends at each end of the defined runway. The width of the primary surface of a runway will be that width prescribed in this section for the most precise approach procedure existing or planned for either end of that runway as follows—

(1) 250 feet for visual utility runways;

(2) 500 feet for—

(i) Visual runways other than utility runways; or

(ii) Nonprecision instrument runways with visibility minimums greater than three-fourths of a statute mile;

(3) 1,000 feet for—

(i) Nonprecision instrument runways with visibility minimums of three-fourths of a statute mile or less; or

(ii) Precision-instrument runways.

(c) *Approach surface.* A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. This surface is applied to each end of the primary surface of a runway based upon the type of procedure available or planned for that runway end. The runway centerline elevation at the runway end is the elevation from which the surface begins.

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

(i) 1,250 feet for a visual, utility runway;

(ii) 1,500 feet for a visual runway other than utility runway;

(iii) 2,000 feet for a nonprecision instrument utility runway with visibility minimums greater than three-fourths of a statute mile;

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

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

(vi) 16,000 feet for a precision instrument runway.

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

(i) 5,000 feet at a slope of 20 to 1 for all nonprecision instrument utility runways with visibility minimums greater than three-fourths statute mile and for all visual runways;

(ii) 10,000 feet at a slope of 34 to 1 for all nonprecision instrument runways, except for utility runways with visibility minimums greater than three-fourths of a statute mile;

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

(d) *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/departure surfaces.

Transitional surfaces for those portions of a precision approach surface which project through and beyond the limits of the conical surface as defined in paragraph (f) of this section, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline.

(e) *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 value 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 in constructing the perimeter of the horizontal surface.

(f) *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.

§ 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.

(1) *Inner horizontal surface.* A plane that is oval in shape at a height of 150 feet above the established airfield elevation. The plane is constructed by scribing an arc with a radius of 7,500 feet about the centerline at the end of each runway and interconnecting these arcs with tangents.

(2) *Conical surface.* A surface extending from the periphery of the inner horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 7,000 feet to a height of 500 feet above the established airfield elevation.

(3) *Outer horizontal surface.* A plane located 500 feet above the established airfield elevation, extending outward from the outer periphery of the conical surface for a horizontal distance of 30,000 feet.

(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.

(2) *Clear zone surface.* A surface located on the ground or water at each end of the primary surface, with a length of 1,000 feet and the same width as the primary surface.

(3) *Approach clearance surface.* An inclined plane, symmetrical about the runway centerline extended, beginning 200 feet beyond each end of the primary surface at the centerline elevation of the runway end and extending for 50,000 feet. The slope of the approach clearance surface is 50 to 1 along the runway centerline extended until it reaches an elevation of 500 feet above the established airport elevation. It then continues horizontally at this elevation to a point 50,000 feet from the point of beginning. The width of this surface at the runway end is the same as the primary surface, it flares uniformly, and the width at 50,000 feet is 18,000 feet.

(4) *Transitional surfaces.* These surfaces connect the primary surfaces, the first 200 feet of the clear zone surfaces, and the approach clearance surfaces to the inner horizontal surface, conical surface, outer horizontal surface or other transitional surfaces. The slope of the transitional surface is 7 to 1 outward and upward at right angles to the runway centerline.

§ 77.29 Airport imaginary surfaces for heliports or vertiports.

(a) *Helicopter/vertiport primary surface.* The area of the primary surface coincides in size and shape with the designated takeoff and landing area of a heliport or vertiport. This surface is a horizontal plane at the elevation of the established heliport/vertiport elevation.

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

(c) *Helicopter/vertiport transitional surfaces.* These surfaces extend outward and upward from the lateral boundaries of the heliport/vertiport

primary surface and from the approach surfaces at a slope of 2 to 1 for a distance of 250 feet measured horizontally from the centerline of the primary and approach surfaces.

Subpart D—Aeronautical Studies of Effect of Proposed Construction on Navigable Airspace

§ 77.31 Scope.

(a) This subpart applies to aeronautical studies of each proposed construction or alteration for which notice to the Administrator is required under § 77.15 to determine whether the aeronautical effects of the specific proposal and, where appropriate, the cumulative effects 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.

(b) The obstruction standards set forth in subpart C of this part are supplemented by other standards used in determining the effect on the navigable airspace of a proposed construction or alteration. The standards used to supplement subpart C obstruction standards are contained in FAA publications relating to the establishment of airports, aeronautical operations and procedures, aircraft operational limitations, air navigation aids, utilization of airports, controlled airspace, minimum flight altitudes, terminal instrument procedures, and weather factors. FAA documents containing these standards are listed in appendix A of this part.

§ 77.33 Initiation of studies.

An aeronautical study is conducted by the FAA—

(a) Upon the request of the sponsor of any construction or alteration for which a notice is submitted under Subpart H of this part; or

(b) Whenever the FAA determines a study to be appropriate.

§ 77.35 Evaluating aeropaatical effect.

(a) The Manager, Air Traffic Division, or his designee, of the FAA region in which the proposed construction or alteration would be located conducts aeronautical studies of proposals to which this subpart applies under agency procedures for nonrule actions. These studies reflect the impact on aeronautical operations, procedures, and safety of flight. The studies also include consideration of operational, procedural, and air navigation/communication facility requirements:

(1) Relating to visual and instrument flight rules operations, ATC, obstruction

marking and lighting, airport traffic patterns, and other concentrations of air traffic;

(2) In reference to the airport capacity of existing public-use airports and public-use airport development plans on file with the Administrator;

(3) Regarding minimum obstacle clearance altitudes, minimum instrument flight rules altitudes, approved or planned instrument approach procedures, and departure procedures;

(4) Relating to the potential effect on ATC radar, direction finders, airport traffic control tower line-of-sight visibility and physical or EMI effects on air navigation and communication facilities; and

(5) In relation to the aeronautical effects resulting from the proposed construction or alteration of a structure when combined with the effects of other existing or proposed structures.

(b) During the factfinding phase of an aeronautical study, the Manager, Air Traffic Division, or his designee may—

(1) Solicit comments from all interested persons;

(2) Evaluate aeronautical comments received on the proposal in order to define and seek solutions to any problem areas;

(3) Negotiate with the construction sponsor to revise the proposal so that the proposed structure would no longer be identified as an obstruction to air navigation;

(4) Examine possible changes in the construction proposal that would preserve and protect the navigable airspace including the grouping of antennae and the single structure multiple antenna concept for radio and television towers whenever possible;

(5) Examine possible changes in aircraft operations and procedures that could accommodate the proposal without having a substantial adverse effect on those operations and procedures; and/or

(6) Conduct an informal airspace meeting with all interested persons to gather additional aeronautical facts relevant to the effect of the proposed construction or alteration on the safe and efficient use of the navigable airspace by aircraft.

(c) If the sponsor withdraws the proposed construction or alteration or revises it so that it is no longer identified as an obstruction or if no further aeronautical study is necessary, the Manager, Air Traffic Division, or his designee, shall terminate the study.

(d) The conclusion of a study made under this subpart is normally a determination as to whether the specific

proposal studied would be a hazard to air navigation.

§ 77.36 Determinations.

(a) The Manager, Air Traffic Division, or his designee shall issue a determination as to whether the proposed construction or alteration would be a hazard to air navigation and shall advise all known interested persons.

(b) Determinations will be based upon the aeronautical study findings and will—

(1) Identify the effects of the proposed structure on VFR/IFR aeronautical departure/arrival operations, procedures, minimum flight altitudes, and existing or proposed public-use airports for which a notice or plan is on file with the FAA, and the extent of the physical and/or EMI effect on the operation of existing or proposed air navigation facilities or communication aids, including an explanation of whether the effect is substantial. The cumulative adverse effects that would result from the proposed construction or alteration will be considered in determining whether a substantial adverse effect is created. A finding of substantial adverse effect will result in the issuance of a determination of hazard to air navigation;

(2) List any conditional provisions of a determination. Routinely, the conditions specified pertain to the obstruction marking and lighting of a structure. However, there can be other conditions necessary to ensure that the proposal would not be a hazard to air navigation;

(3) State any limitations in determinations of no hazard to air navigation when considered necessary to minimize potential problems, such as the use of temporary construction equipment; and

(4) Specify supplemental notice requirements.

(c) When it is determined that the proposed construction or alteration will require a change in departure and arrival routes or airport traffic patterns, a statement to that effect will be included in the determination.

§ 77.37 Petitions for discretionary review.

(a) The sponsor of any proposed construction or alteration, or any person who stated a substantive aeronautical comment on a proposal in an aeronautical study, or any person who has a substantive aeronautical comment on the proposal but was not given an opportunity to state it, may petition the Administrator for a discretionary review of a determination, revision, or extension of a determination issued by a Manager, Air Traffic Division, or his

designee. This paragraph does not apply to an acknowledgment issued under § 77.19(c)(1).

(b) An original and three copies of each petition for a discretionary review submitted under this subpart must be filed with or mailed by certified mail to the Administrator within 45 days after the issuance of a determination under §§ 77.19, 77.36, or a revision or extension of the determination under § 77.40; and must—

(1) Contain a full statement of the aeronautical basis upon which the petition is made; and

(2) Present new information or facts not previously considered or discussed during the aeronautical study, including valid aeronautical reasons why the determination, revisions, or extension made by the Manager, Air Traffic Division, or his designee should be reviewed; and/or

(3) Identify and explain the basis of the petition, if the petition for a discretionary review is based upon an error in reasoning, interpretation of procedures, application of obstruction standards, or assumptions of fact.

(c) In the event that the last day of the 45-day filing period falls on a Saturday, Sunday, or Federal holiday, the last day of the filing period shall be the next day which is not one of the aforementioned days.

(d) The petitioner, or the sponsor, if other than the petitioner, and the FCC, where appropriate, will be informed of the filing of the petition and that a determination is not and will not become final pending disposition of the petition.

(e) The Administrator or his designee examines each petition submitted under this subpart and decides if a discretionary review based on written materials will be granted.

(f) If a discretionary review is granted, the Administrator or his designee shall inform the petitioner and the sponsor, if other than the petitioner, of the issues to be studied and reviewed if different than the issues presented in the petition or the determination.

(g) If it is determined that a discretionary review should be denied, then the petitioner, the sponsor, if other than the petitioner, and the FCC, where appropriate, shall be notified of the basis for the denial along with the fact that the determination is final.

§ 77.39 Determination effective period.

(a) The determination made under this subpart or subpart B is final 55 days after the date of issuance, unless a petition is filed with the Administrator within 45 days after issuance. Filing of the petition is effective upon receipt by

the Administrator. If no petition is filed, the determination becomes final on the effective date. If a valid petition is filed, the determination will not become final pending disposition of the petition.

(b) Unless extended, revised, or terminated, each final determination of no hazard to air navigation made under this subpart or subpart B 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 final determination of hazard made under this subpart or subpart B of this part has no expiration date.

(d) In any case in which a final determination made under this subpart or subpart B of this part relates to proposed construction or alteration that may not be started unless the Federal Communications Commission issues an appropriate construction permit, the effective period of each final determination includes—

(1) The time required to apply to the Commission for a construction permit, but not more than 6 months after the effective date of the determination; and

(2) The time necessary for the Commission to process the application except in a case where the Administrator determines a shorter effective period is required by the circumstances.

(e) If the Commission issues a construction permit, the final determination is effective until the date prescribed for completion of the construction. If the Commission refuses to issue a construction permit, the final determination expires on the date of its refusal.

§ 77.40 Extension or reconsideration of determination of no hazard to air navigation.

(a) Any person may petition the Manager, Air Traffic Division, or his designee who issued the final determination of no hazard to air navigation under this subpart or Subpart B to revise or reconsider the determination based on new facts that change the basis upon which it was made or to extend the effective period of determination, if—

(1) The proposed construction or alteration has not started by actual structural work, such as the laying of a foundation, but not including excavation; and

(2) The petition is submitted at least 30 days before the expiration date of the final determination of no hazard to air navigation.

(b) The Manager, Air Traffic Division, or his designee who issued the final

determination of no hazard to air navigation examines each petition presented under this section and revises, extends, or affirms the original expiration date of the determination. A determination of no hazard to air navigation issued for those construction or alteration proposals not subject to FCC licensing may be extended by the Manager, Air Traffic Division, or his designee one time for a period not to exceed 6 months.

(c) Those determinations issued for proposals subject to FCC licensing, after further review, may be granted extensions for 12 months or less, provided that—

(1) A sponsor submits evidence that an application for a construction permit/license has been filed with the FCC for the associated site; and

(2) A sponsor submits evidence that additional time is warranted due to FCC requirements.

(d) Where the FCC issues a construction permit, a final

determination is effective until the initial date prescribed for completion of the construction. If an extension of the completion date is needed, an extension of the determination is required.

Appendix A—FAA Documents Used in Aeronautical Studies

Document and Number

Spectrum Management Regulations and Procedures Manual—8050.32
 Primary/Secondary Terminal Radar Siting Handbook—8319.8
 Primary/Secondary Enroute Radar Siting Handbook—8340.13
 VORTAC Siting Criteria—8700.11
 Siting Criteria for Instrument Landing Systems—8750.18
 Standard Instrument Departure (SID)—7100.8
 Standard Terminal Arrival (STAR)—7100.9
 Air Traffic Control—7110.65
 Charted Visual Flight Procedures—7110.79
 Holding Pattern Criteria—7130.3
 Facility Operations & Administration—7210.3
 Enroute Minimum IFR Altitude (MLA) Sector Charts—7210.37
 Procedures for Handling Airspace Matters—7400.2

United States Standard Flight Inspection Manual—8200.1

United States Standard for Terminal Instrument Procedures (TERPS)—8260.3
 Flight Procedures & Airspace—8260.19
 Vertiport Design—Advisory Circular (AC) 150/53

Airport Design—AC 150/5300-13

Heliport Design—AC 150/5300-2

Obstruction Marking and Lighting—AC 70/7460-1

Proposed Construction or Alteration of Objects That May Affect the Navigable Airspace—AC 70-7470-2

General Operating & Flight Rules—Subpart B, Federal Aviation Regulations (FAR) Part 81
 Certification and Operations; Land Airports Serving Certain Air Carriers—FAR Part 139

Issued in Washington, DC on July 25, 1989.

Jerry W. Ball,

Acting Director, Airspace Rules and Aeronautical Information Division.

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