

Airport Obstructions Standards Committee (AOSC)
Decision Document #02b (Replaces DD# 02)

Approved: July 12, 2004
Revised September 13, 2004

40:1 Departure Surface and Obstruction Evaluations

1) **Introduction**

- a) Historically, the FAA has applied measures to address the risk associated with obstacles near airports. The FAA works to protect airspace and ensure flight operational safety by limiting encroachment of obstacle penetration of surfaces defined by Order 8260.3, *United States Standard for Terminal Instrument Procedures (TERPS)* and 14 CFR Part 77 airport imaginary surfaces. Efforts to protect airspace by limiting the height of structures or vegetation often affect property development in the vicinity of airports.
- b) Section 6-3-1 of FAA Order 7400.2e, *Procedures for Handling Airspace Matters*, states the following:
 - The prime objective of the FAA in conducting Obstruction Evaluation (OE) studies is to ensure the safety of air navigation and the efficient utilization of navigable airspace by aircraft. There are varied demands being placed on the use of the navigable airspace. However, when conflicts arise concerning a structure being studied, the FAA emphasizes the need for conserving the navigable airspace for aircraft, preserving the integrity of the national airspace system, and protecting air navigation facilities from either electromagnetic or physical encroachments that would preclude normal operation.
 - In the case of such a conflicting demand for the airspace by a proposed construction or alteration, the first consideration should be given to altering the proposal.
- c) The FAA does not have the authority to regulate or control how land (real property) may be used in regard to structures that may penetrate navigable airspace. (FAA Order 7400.2E, section 5-1-2a) This responsibility is generally fulfilled by local authorities or airport sponsors.
- d) Aircraft operators have the responsibility to consider obstacles and make the necessary adjustments to their departure procedures to ensure safe clearance for aircraft over those obstacles.

Introduction (continued)

- e) This decision document addresses the issues related to the inconsistent application of the 40:1 Obstacle Clearance Surface (OCS) in the evaluation of obstacles with respect to instrument departure procedures under 14 CFR Part 77.23, *Objects Affecting Navigable Airspace*. This decision document also identifies actions to ensure safety while minimizing the airspace impact by:
- Establishing a consistent standard for the 40:1 OCS that will be applied across the NAS
 - Providing aircraft operators with departure obstacle information for all 40:1 penetrations utilizing existing notification processes (e.g. charting).
 - Revising both the internal coordination procedures and the policy criteria governing the circularization process in the OE/AAA program.

2) Rationale for Decision

- a) The “Departure Obstacle Clearance Surface (OCS)” begins at the departure end of runway (DER) at DER elevation, and rises at a 40:1 slope in the direction of departure. Where an existing obstacle penetrates this slope, procedure specialists are allowed for the purpose of determining Part 97 departure minimums and ensuring operational efficiency, to consider the OCS originating at a height no greater than 35 feet above the DER elevation. Over time, application of the 35-foot adjustment was broadly applied to both existing and new obstacles. Policy clarification is needed to reestablish a consistent standard for applying the 35-foot adjustment across the NAS.
- b) In situations where proposed obstacles may conflict with air operations, the FAA solicits aeronautical information from interested parties regarding the potential impacts of these obstacles and the means by which these impacts can be mitigated. This process supports informed decision-making by various community elements on land usage. Aircraft operators have raised safety concerns in cases where penetrations to the 40:1 OCS have been built without notification that the 35-foot adjustment was used to effectively elevate the departure surface. Therefore, policy clarification is needed to improve user notification where this adjustment has been made.

AOSC Decision (Refer to Figure 1)

In issuing determinations for proposed obstacles under 14 CFR Part 77, the following cases will apply:

- Case I. Any proposed obstacle that is below a 40:1 surface originating at the DER, at DER elevation, will be evaluated according to existing OE/AAA guidance.
- Case II. Any proposed obstacle that penetrates the 40:1 surface originating at the DER, at DER elevation, by up to 35 feet will be evaluated for aeronautical effect and circularized.
- Case III. Any obstacle that penetrates a 40:1 surface originating at the DER, at DER elevation, by more than 35 feet will have a presumed adverse aeronautical effect and will be evaluated according to OE/AAA guidance for “Determination of Presumed Hazards (DPH)”.

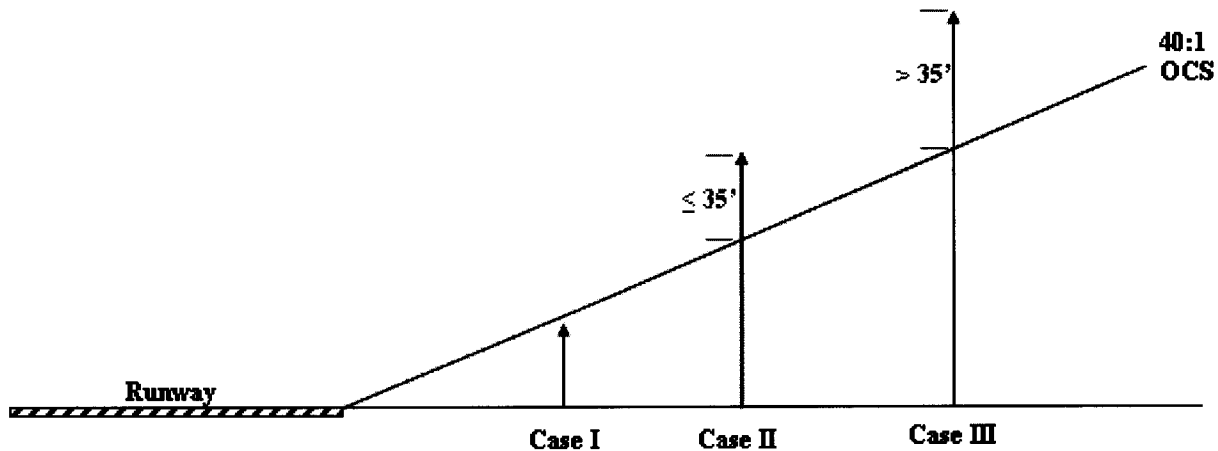


Figure 1

Note: Shielding provisions will apply to any proposed obstacles which do not impose additional aeronautical effect per Order 7400.2e.

In addition, guidance will be issued in Advisory Circular (AC) 150/5300-13, *Airport Design*, Order 8260.3, Order 8260.19, *Flight Procedures and Airspace*, and Order 7400.2 to clarify the operational impacts of obstacles in the above cases. Also, the Obstruction Evaluation / Airport Airspace Analysis (OE/AAA) automation program will be modified as necessary. Guidance and procedures will be developed to ensure that the appropriate industry groups are notified during the aeronautical study regarding proposed penetrations of the 40:1 surface as well as any associated impacts.

Strategy / Action Plan**1) ARP Policy Guidance**

On approval of this decision document, ARP will include 40:1 OCS guidance in the next revision of AC 150/5300-13.

- A 40:1 departure surface will be added to Appendix 2 of the AC starting at the DER elevation and matching the TERPS departure surface for a distance of 12,200 feet.
- A description of the surface and the case determinations outlined in this decision document will be added. In addition, the operational limitations associated with obstacles above the 40:1 surface will be described.

2) ATO OE/AAA Enhancements

- a) ATO Airspace and Rules will modify the OE/AAA automation program as necessary (not to the exclusion of other modifications) to issue determinations consistent with this decision document.
- b) For obstacles in Case II (penetrations of the 40:1 OCS by 35 feet or less), the OE/AAA program will be modified to allow evaluation of aeronautical effect.
- c) The OE/AAA program will be modified to circularize any proposed obstacle which penetrates the 40:1 departure surface to, at a minimum, the following groups:
 - AOPA, NBAA, RAA, DOD, ATA, IATA, ALPA
- d) OE/AAA documentation (Order 7400.2, etc.) will be updated and training will be completed.
- e) Any penetration of the 40:1 OCS from DER will be captured in the database, with subsequent notification of construction.

3) AVR

- a) AFS will develop and provide guidance to AVN to ensure that the appropriate obstacle information is provided to flight crews.
- b) AFS will update 8260-series orders and the Aeronautical Information Manual (AIM) in accordance with this decision document in their next revisions.

4) Briefings to Industry Groups (AOSC)

On June 23, 2004, the AOSC sent out a draft of this decision document to the following industry groups: AAAE, ACI, NASAO, ATA, IATA, ALPA, AOPA, NBAA, RAA -- and Las Vegas McCarran Airport. On July 2, 2004, interested stakeholders were briefed the draft policy and their comments have been addressed.

40:1 Departure Surface and Obstruction Evaluations

Decision Prepared By:

- Dave Bennett, AAS-1
- Bob Bonanni, AAS-100
- Chuck Friesenhahn, AFS-400
- Dave Madison, ATO
- John McGraw, AFS-400
- Michael O'Harra, ARC-4

Decision Approved By:


Ruth Leverenz

Assistant Administrator for Regions and Centers, ARC-1

9/13/04
Date


Russ Chew

Chief Operating Officer for Air Traffic Organization, ATO-1

9.14.04
Date


Nicholas Sabatini

Associate Administrator for Regulation and Certification, AVR-1

SEP 20 2004
Date


Woodie Woodward

Associate Administrator for Airports, ARP-1

9/13/04
Date