



**Approved by the Tactical Operations  
Committee February 2014**

# **Mitigation of Obstructions within the 20:1 Visual Area Surface**

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*Report of the Tactical Operations Committee in Response to Tasking from  
The Federal Aviation Administration*

*January 2014*

# Mitigation of Obstructions within the 20:1 Visual Area Surface

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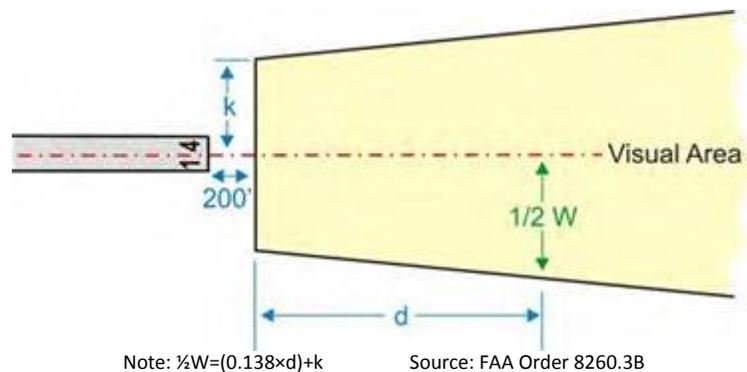
## Background/Introduction

The FAA is responsible for the safety of civil aviation and it sets standards, evaluates effects, and ensures compliance in the area of obstacle penetration of protected runway surfaces. Several FAA Lines of Business have defined roles in this effort including the Office of Airports, Flight Standards, and the Air Traffic Organization.

The FAA is exploring a risk-based approach to assess and mitigate penetrations of the 20:1 visual area surface to ensure safety while allowing additional flexibility in the time frames available for completing mitigations prior to affecting operations at a given aerodrome.

The 20:1 visual area surface is described in Section 3.3.2.c of FAA Order 8260.3B, United States Standard for Terminal Instrument Procedures (TERPS). Figure 1 below depicts the “straight-in” configuration of the surface, which is aligned with and centered on the runway centerline. It has vertical slope of 20:1 (a 2.87 degree slope), beginning from the runway’s threshold elevation. The surface begins 200 feet prior to the runway threshold and extends until reaching the decision altitude of the approach procedure it serves.

**Figure 1: Straight-in Visual Area Surface**



For approach procedures applicable to Approach Category A and B aircraft (generally lower performance prop, turboprop, smaller turbo-jet aircraft), the initial half-width of the surface, “k”, is 200 feet; for approach procedures applicable to Approach Category C & D aircraft (high performance turbojet aircraft), the initial half-width is 400 feet. Different dimensional standards are applicable to visual area surfaces serving offset and circling approach procedures.

When this surface is free from penetrations, there are no visibility limitations on instrument approaches. However, when there are obstacles that penetrate this surface the pilot must be able to see and avoid those obstacles. This is accomplished by restricting operations to times when the visibility is at least 1 mile, and by lighting the obstacle for night operations. If the obstacle is not lit, then there is no assurance that the pilot will be able to see and avoid the obstacle at night and therefore, night minima are not authorized.

During periodic inspection of procedures, sometimes new obstacles are identified which penetrate this 20:1 visual area surface. Because of FAA requirements, the discovery of these apparent obstacles leads to FAA restrictions resulting in loss of airport access. This occurs because of visibility reduction or loss of night instrument operations if the obstacle is not lit. A variety of factors has contributed to this situation, such as

inaccurate obstacle data in the FAA database, airport operators not being aware of their responsibilities, and a lack of consistent enforcement of this requirement.

In order to improve the situation in the short term, the FAA issued a Memorandum titled, *Mitigation of obstructions within the 20:1 Visual Area Surface* on November 15, 2013. The Memorandum, which became effective on January 6, 2014, outlines the steps airport operators must take in the event FAA determines an object in its obstruction database penetrates 20:1 visual area surfaces associated with instrument approach procedures.

The goal of the Memorandum was to establish a process in which mitigations are commensurate with risk, that facilitates compliance and establishes clear expectations between FAA and the airport community regarding the need to verify, plan, and implement approved mitigations for obstacle hazards<sup>1</sup>.

Concurrent with issuance of the memorandum, the FAA requested the Tactical Operations Committee (TOC) to perform the following activities related to the mitigation of obstructions within the 20:1 Visual Area Surface:

- a. Review and develop recommendations related to the FAA Memorandum, *“Mitigation of Obstructions within the 20:1 Visual Area Surface”* (FAA 20:1 Memorandum). Provide a report covering the following areas outlined in detail in the memorandum:
  - i. The sufficiency of time and clarity of expectations in the verification stage.
  - ii. Improving the planning and mitigation stages.
  - iii. Providing clear guidance for what actions must be taken to mitigate risk regarding visibility and night operations.
  - iv. The FAA is also requesting recommendations for the best mechanism(s) to communicate the process to key stakeholders.

The TOC established a 20:1 Visual Approach Surface Task Group (the VAS Task Group) in early December 2013 to develop the requested report.

## Executive Summary

This document enumerates the Task Group’s assumptions and guiding principles used for deliberations. It then presents recommendations regarding the FAA 20:1 Memorandum. It includes recommendations regarding all four areas requested by the FAA in its tasking letter to the TOC.

With respect to our assumptions, the VAS Task Group agreed that our work should not focus on the underlying justification and safety purpose of the 20:1 visual area, but rather more narrowly on the

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<sup>1</sup> In addition to release of the Memorandum, the FAA is also collecting data on the flight paths of aircraft in the visual segment and will evaluate whether an update to the obstacle identification surfaces is appropriate. The FAA will also initiate an education campaign to the airport owners and operators to assist them in identifying and mitigating obstacles before they become an issue.

specific requests articulated in the FAA’s tasking letter. Key among our guiding principles was that actions to mitigate 20:1 surface penetrations should not lead to unintended increases in safety hazards elsewhere in the system, for example eliminating straight-in instrument approach procedures leads to increased use of less stable circling approach procedures.

The VAS Task Group’s recommendations are organized according to the four specific issue areas identified by the FAA and include the following:

- Absent special circumstances, the listed timeframes for verification, planning, and mitigation of obstacles penetrating the 20:1 surface appear to be appropriate as limits to bound FAA’s basic direction of “as soon as possible,” but should be reassessed within 180 days of the effective date of the FAA 20:1 Memorandum.
- New obstacle surveys should not be required in the verification phase.
- The FAA should provide guidance on compliance plan contents, scope, etc. Ideally, this would be in the form of a sample compliance plan. These plans should be able to include a full range of options for obstacle mitigation including obstacle elimination/lowering, obstacle lighting, use of visual aids (e.g., Vertical Glide Scope Indicator, infrastructure modifications), and acceptance of procedural restrictions.
- Outreach efforts regarding 20:1 surface clearance requirements are critical to successful implementation of a risk-based mitigation strategy and should include stakeholder organizations such as: Air Line Pilots Association (ALPA), Aircraft Owners and Pilots Association (AOPA), Airlines for America (A4A), Airports Council International-North America (ACI-NA), American Association of Airport Executives (AAAE), Cargo Airline Association (CAA), International Air Transport Association (IATA), National Association of State Aviation Officials (NASAO), National Business Aviation Association (NBAA), National Air Transportation Association (NATA), and Regional Airline Association (RAA) as recipients of FAA messaging and as potential partners in the outreach efforts. Key messages that need to be included in these outreach efforts include (1) the rationale behind the FAA’s current focus on 20:1 obstacle clearance, (2) the scope and scale of 20:1 penetration issues within the NAS, (3) the safety and access impacts of 20:1 penetrations; and (4) verification, compliance, and mitigation requirements outlined in FAA’s 20:1 Memorandum.

Although outside of the scope of the FAA’s tasking letter, the Task Group also recognized that airport operators should be encouraged to notify the FAA if there is an approach at their airport that is no longer needed—which may reduce the need to protect unnecessary 20:1 surfaces. The VAS Task Group also encourages the FAA to continue with its ongoing flight track analyses to assess whether the current size and shape of the 20:1 surface is appropriate.

## Methodology

To complete this initiative, the VAS Task Group took the following steps in creating the recommendation:

1. Determined and reached consensus on the scope of the task that guided the process of deliberations and subsequent outcome of the VAS Task Group recommendation.
2. Received informational briefings on FAA policy and regulatory requirements associated with the 20:1 Visual Area Surface, along with recent and planned FAA efforts. This included a discussion and review of available FAA data on obstructions.
3. Established a set of assumptions which in turn led to the development of guiding principles from which recommendations were established for the purpose of this report.
4. Discussed and responded to questions received from the FAA.
5. Identified issues that the VAS Task Group determined were beyond the scope of the FAA Tasking, but relevant for policy actions related to the mitigation of obstructions within the 20:1 Visual Area Surface.
6. Developed the final recommendations.

## Assumptions

The VAS Task Group established the following assumptions as a common understanding for its subsequent recommendations:

- The FAA considers that penetrations of the 20:1 visual area surface represent a hazard to aircraft in flight<sup>2</sup>.
- The 20:1 visual surface is a surface to enhance safety by protecting instrument approach procedures from obstacles and also provides a safety benefit for visual approach procedures.
- A risk-based analysis considers the likelihood of encountering a hazard although the severity of an encounter with an object is assumed to be catastrophic.
- The FAA will retain the capability to take immediate action in the event that an immediate or unanticipated threat to safety of flight is identified.

## Guiding Principles

The Visual Area Surface Task Group established the following principles to provide the FAA with responses to the questions and issues requested by the Tasking letter and Terms of Reference:

- The VAS Task Group's discussion must remain focused on the specifics of the FAA's tasking letter, specifically the questions posed by the tasking letter.

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<sup>2</sup> For faster, high-performance aircraft, 1 statute mile of visibility provides as little as 20 seconds of flight time in which to visually acquire and maneuver to avoid an obstacle penetrating the 20:1 surface.

- Changing TERPS criteria is outside the scope of the FAA Tasking.
- The VAS Task Group goal is to achieve unanimous consensus for the recommendations regarding the topics addressed in the tasking letter. In the unlikely event that consensus cannot be reached, dissenting opinions will be documented in materials submitted to the Technical Operations Committee.
- Both safety and airport access should be considered when evaluating the need for, extent of, and timeline for implementation of hazard mitigations.
  - Mitigating risk of 20:1 penetrations should not lead to increased risk (e.g. increased use of circling approaches).
- TERPS criteria exist as one of several mitigations to address the collision hazard posed by an obstacle (man-made or natural) in the final approach area (and others not pertinent to the 20:1 discussion).
- The location, height and number/surface area (individual or clusters) of obstacles should be considered in evaluating the risk they pose to aircraft.

## Response to Questions

The Visual Area Surface Task Group developed the following responses to the four areas requested by the FAA related to the memorandum covering Mitigation of Obstructions within the 20:1 Visual Area Surface.

**The FAA has requested comments on the sufficiency of time and clarity of expectations in the verification stage.**

### ***Task Group Response:***

#### Time

- 30 days is an appropriate deadline for airport operators to verify the existence of object penetrations after receiving notification from the FAA with the understanding that airport operators will do so as soon as possible (i.e., sooner than 30 days) whenever practicable. The VAS Task Group recommends that the FAA reevaluate the timeliness of compliance with the 30 day verification deadline within 180-days of implementation of the FAA’s Interim Guidance.
- Special circumstances: Some airports in Alaska and potentially other smaller airports are challenged by 30 day deadline due to circumstances that may be beyond their control (staffing, budget for engineering services, technical expertise, local political/social considerations and environmental conditions).

#### Clarity

- For airport operators, no new survey data should be required to respond to the FAA in the verification phase; instead, the intent of the verification phase is only to verify the *existence* and *general characteristics* of penetrating objects.
- Consistent with the preceding recommendation, the VAS Task Group recommends that the FAA enumerate the specific information it wants to receive during the verification process and further recommends enumeration of the following two items:
  - Object existence or non-existence
  - Location, height, type of object, etc., insofar as these can be determined without new survey data
- The VAS Task Group also recommends that the FAA provide plain language guidance regarding how it wants airport operators to submit verification information (e.g., development of a standard verification form airport operators can complete).
- Finally, the VAS Task Group recommends that the memorandum provide clear guidance regarding the availability of and access to the 20:1 obstacle visualization tool when this tool becomes available for use.

**The FAA has requested comments on improving the planning and mitigation stages.**

***Task Group Response:***

Planning Stage Recommendations

Compliance plans should be able to include a full range of options for obstacle mitigation including obstacle elimination/lowering, obstacle lighting, use of visual aids (e.g., VGSI), infrastructure modifications ), and acceptance of procedural restrictions.

- The FAA should provide guidance on compliance plan contents, scope, etc. Ideally, this would be in the form of a sample compliance plan.
- Airports need guidance on preferred priorities for removal or other mitigations<sup>3</sup>.
- Compliance plan development will be iterative processes requiring ongoing collaboration among airport operators, the FAA, aircraft operators, and in many cases (e.g., where obstacles are located off airport property), local communities and/or property owners. Accordingly, the FAA should understand that development and implementation of some compliance plans will be

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<sup>3</sup> The FAA, in issuing guidance explaining the full range of obstacle mitigation options, must clarify the priority and preferred methods for airports to follow. In doing so the FAA Division of Airports, National Priority System (NPS) and associated National Priority Ratings (NPR) must be brought in line with the priority of other FAA divisions. The current NPR ranks Obstructions at airport differently based on airport reference code and location of obstruction. By the FAA's definition all obstructions represent some hazard to navigation and should be dealt with equally. Additionally, the past and current NPR rank easement/ land acquisition for the protection of approaches at roughly 50% of the obstruction removal itself; this does not permit the airport to deal with obstructions that are outside of its existing property or access rights. Neither the NPS nor the NPR directly address funding to protect approaches prior to the Obstruction existing as an Obstruction; in some cases this forces the FAA and operators to allow obstructions to develop in order to be eligible for funding.

complex and may require more time to fully implement than currently allowed in the FAA 20:1 Memorandum. The VAS Task Group recommends that the FAA provide procedural mechanisms to extend compliance plan development deadlines in the event special circumstances exist.

#### Mitigation Stage Recommendations

- All other mitigation strategies should be evaluated before restrictions are placed on category C and D operations<sup>4</sup>.
- Similar to the last planning stage recommendation, there should be procedural mechanisms to extend mitigation stage deadlines in the event special circumstances exist.

Excepting the special circumstance recommendations above, the time frames for planning and mitigation stages are appropriate, with the understanding that airport operators will do so as soon as possible whenever practicable. The VAS Task Group recommends that the FAA reevaluate the timeliness of compliance within 180 days of implementation of the FAA's Interim Guidance.

**The FAA has requested comments on providing clear guidance for what actions must be taken to mitigate risk regarding visibility and night operations.**

#### ***Task Group Response:***

- We recommend that FAA work with industry to provide guidance to airport operators regarding its expectations for maintenance of 20:1 surfaces following mitigation actions. The FAA needs to clearly communicate the responsibilities for identifying and mitigating obstructions associated with new approaches (especially in those instances where WAAS approach procedures were developed without involvement of the airport operator). This will help manage expectations and can help minimize the obstructions in the future.
- The fleet mix using the airport and frequency of operations, are important factors for risk mitigation leading to the resolution of a penetration.
- Unusual circumstances<sup>5</sup> may require an alternative assessment of risk.

**The FAA has requested recommendations for the best mechanism(s) to communicate the process to key stakeholders.**

#### ***Task Group Response:***

- The VAS Task Group recommends utilizing key industry associations to facilitate outreach to key stakeholders, particularly airport operators and aircraft operators.
- Key messages that need to be included in the FAA and other organization's communications include (1) the rationale behind the FAA's current focus on 20:1 obstacle clearance, (2) the scope and scale of 20:1 penetration issues within the NAS, (3) the safety and access impacts of

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<sup>4</sup> Airports should be aware that loss of category C and D minimums, especially at single runway airports, can have negative impacts on the ability of large numbers of turbojet aircraft to operate at their airport impacting both based aircraft operators and viability of Fixed Base Operators (FBOs).

<sup>5</sup> The principle is that this would be very limited; for example, a natural disaster, or unique weather event.

20:1 penetrations, and (4) verification, compliance, and mitigation requirements outlined in FAA's memo.

- Outreach efforts should include stakeholder organizations such as: Air Line Pilots Association (ALPA), Aircraft Owners and Pilots Association (AOPA), Airlines for America (A4A), Airports Council International-North America (ACI-NA), American Association of Airport Executives (AAAE), Cargo Airline Association (CAA), International Air Transport Association (IATA), National Association of State Aviation Officials (NASAO), National Business Aviation Association (NBAA), National Air Transportation Association (NATA), and Regional Airline Association (RAA). Outreach can be conducted via FAA and other organization's communications web/webinars, template/guidance documents, and Office of Airports presentations. This should also include relevant federal and state agencies.

## **Additional Recommendations**

The following two recommendations were not directly covered in the FAA's Tasking Letter to the TOC, but were identified by the Task Group.

The FAA should:

- Continue its safety risk assessment of the 20:1 visual surface area using recent flight track dispersion data to determine if the geometry of the area should be modified.
- Provide data requested by the VAS Task Group regarding the number of 20:1 visual surface area penetrations in the NAS and the details regarding them as requested by the VAS Task Group co-chairs to the FAA. These data are important to provide industry with insight into the scale and scope of 20:1 penetration issues.

## Appendix A: Members of the 20:1 Visual Area Surface Task Group

### Members of the VAS Task Group

<b>Chris Baum</b>	<b>Air Line Pilots Association, International (Co-Chair)</b>	Bob Lamond	National Business Aviation Association
Rich Boll	National Business Aviation Association	Scott McMahon	Morristown Municipal Airport
Jim Bowman	FedEx Express	Glenn Morse	United Airlines, Inc.
Andy Cebula	RTCA, Inc.	Michael O'Donnel	Federal Aviation Administration
Bill Davis	Federal Aviation Administration	<b>Chris Oswald</b>	<b>Airports Council International – North America (Co-Chair)</b>
Bruce DeCleene	Federal Aviation Administration	Gary Powell	Federal Aviation Administration
Don Dillman	Airlines for America	Abigail Smith	Federal Aviation Administration
Rob Goldman	Delta Air Lines, Inc.	Justin Towles	American Association of Airport Executives
Mike Hines	Metropolitan Washington Airports Authority	Jeremy Worrall	State of Alaska
Christian Kast	United Parcel Service		
Tom Kramer	Aircraft Owners and Pilots Association		

## Appendix B: FAA Tasking Letter



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Mission Support Services  
800 Independence Avenue, SW.  
Washington, DC 20591

Ms. Margaret T. Jenny  
President  
RTCA, Inc.  
1150 15th Street, NW  
Suite 910  
Washington, DC 20036

Dear Ms. Jenny:

As you know, FAA is responsible for the safety of civil aviation and it sets standards, evaluates effects, and ensures compliance in the area of obstacle penetration of protected runway surfaces. Standards are set under Terminal Instrument Procedures (TERPs) requirements; evaluations of the effect of construction or alternations are done under Part 77, and compliance is ensured, in part, through Advisory Circulars. Several FAA Lines of Business have defined roles in this effort including the Office of Airports, Flight Standards, and the Air Traffic Organization.

The FAA is exploring a risk-based approach in providing clear vertical descent paths (referred to as a 20:1 surface) to ensure safety while allowing additional flexibility in the time frames available for completing mitigations prior to effecting operations at a given aerodrome. Normal vertical descent paths are protected through an obstacle identification surface, which originates 200' from the runway threshold and rises at 1 foot for every 20 feet laterally (a 2.87 degree slope). When this surface is free from penetrations, there are no visibility limitations on instrument approaches. However, when there are obstacles that penetrate this surface the pilot must be able to see and avoid those obstacles. This is accomplished by restricting operations to times when the visibility to at least 1 mile, and by lighting the obstacle for night operations. If the obstacle is not lit, then there is no assurance that the pilot will be able to see and avoid the obstacle and night minimums are not authorized.

During periodic inspection of procedures, sometimes new obstacles are identified which penetrate this 20:1 obstacle identification surface. Because of FAA requirements, the discovery of these apparent obstacles leads to FAA restrictions resulting in loss of airport access. This occurs because of visibility reduction or loss of night instrument operations if the obstacle is not lit. A variety of factors has contributed to this situation, such as inaccurate obstacle data in the FAA database, airport operators not being aware of their responsibilities, and a lack of consistent enforcement of this requirement.

In order to improve the situation in the short term, the FAA is developing a process to address these penetrations, taking into account that some obstacle data is inaccurate and that not all penetrations pose the same level of risk to operations. The proposed new process is outlined in an attached draft memorandum.

The goal is to establish a process in which mitigations are commensurate with risk, that facilitates compliance and establishes clear expectations between FAA and the airport community regarding the need to verify, plan, and implement approved mitigations for obstacle hazards. We believe the Tactical Operations Committee (TOC) could provide valuable feedback to help ensure that our new process meets the above goals is clearly communicated and can be effectively implemented. The purpose of the Tasking is limited in scope to recommendations related to the draft memorandum. Specifically the FAA request comments on the following areas:

- (1) The sufficiency of time and clarity of expectations in the verification stage.
- (2) Improving the planning and mitigation stages.
- (3) Providing clear guidance for what actions must be taken to mitigate risk regarding visibility and night operations.

The FAA also is requesting the TOC to identify the best mechanism(s) to communicate the process to key stakeholders.

In addition to release of the interim policy guidance, the FAA is also collecting data on the flight paths of aircraft in the visual segment and will update the obstacle identification surfaces accordingly. The FAA will also initiate an education campaign to the airport owners and operators to assist them in identifying and mitigating obstacles before they become an issue.

The FAA will provide needed subject matter expertise to work this task. To ensure that the TOC considers all relevant issues, the Task Group should, at a minimum, include representatives from airports, aircraft operators (airlines, pilots, and general aviation), state aviation officials.

FAA seeks the TOC's recommendations no later than January 31, 2014.

Sincerely,

Elizabeth L. Ray  
Vice President, Mission Support Services  
Air Traffic Organization

cc:AJV-0

AJV-0:E.L.Ray:elr:(202) 267-8261:11/01/2013

Edited by AJV-0:V Smith:vs:(202) 267-8261:11/01/2013

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## **Appendix C: FAA Memorandum, “Mitigation of obstructions within the 20:1 Visual Area Surface”**



# Federal Aviation Administration

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## Memorandum

Date: NOV 15 2013

To: Bruce DeCleene, Manager, Flight Technologies and Procedures Division, AFS-400  
Michael J. O'Donnell, Director, Office of Airports Safety and Standards, AAS-001

From: *William S. Davis*  
William S. Davis, Deputy Vice President, Mission Support Services, AJV-0

Subject: Interim Policy Guidance for Mitigation of Penetrations to the 20:1 Visual Area Surface

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**PURPOSE:** To provide consolidated interim policy guidance for FAA staff to address the process related to the discovery, verification, risk assessment, and mitigation of obstacles identified as penetrations to the 20:1 Visual Area Surface (20:1 surface) of instrument approach procedures (IAP).

**ACTION:** When 20:1 surface obstacle/terrain penetrations (penetrations) are discovered within the Visual Area Surface of an IAP (see attachment 1- 20:1 Risk Assessment), action will be taken to evaluate the entire airport to ensure that all 20:1 penetrations for every IAP have been identified. Effective January 6, 2014, use the following process (see attachment 2- 20:1 Mitigation Flow Chart) for the notification, verification, risk assessment, and mitigation of each penetration:

- 1. Notification and Verification.** The Operations Support Group (OSG) Flight Procedures Team (FPT) will notify the airport owner/sponsor and the Airports District Office (ADO) within three business days of being informed of a potential penetration of an IAP. The OSG FPT will request the airport owner/sponsor to verify the validity of each penetration as soon as possible but not to exceed 30 calendar days after notification. The airport owner/sponsor must respond in writing to the OSG FPT with a copy to the ADO (scanned documents are acceptable). This reply is due as soon as possible and shall not be delayed to address mitigation, which is addressed through the compliance process (below). The preferred methods for an airport owner/sponsor to update data regarding trees that have been trimmed are contained in the Office of Airports (ARP) Engineering Brief (EB) #91: Management of Vegetation in the Airport Environment. EB #91 is available at the FAA website link: [http://www.faa.gov/airports/engineering/engineering\\_briefs/](http://www.faa.gov/airports/engineering/engineering_briefs/). If no response is received within the prescribed timeframe, actions must be taken to restrict the IAP visibility minima/night operations as appropriate.

2. **20:1 Penetration Determined Invalid.** If the 20:1 penetration(s) at issue have been determined to be invalid by an airport owner/sponsor, the OSG FPT will notify AeroNav Products and the Aeronautical Information Management Terrain and Obstacle Data (TOD) Team. AeroNav products will update the documentation on the periodic review sheet. The TOD Team will update the obstacle database within 10 business days. No action is required to restrict or modify the subject IAP.
3. **20:1 Penetration Determined Valid.** If the 20:1 penetration(s) at issue is/are valid, one or more of the actions specified in paragraphs 3.1 through 3.3 below is/are required (see attachment 3-Timelines and IAP Restrictions). If any of the timelines are not met, or the airport compliance plan does not remove, light, or lower the obstacle, or if no compliance plan is contemplated (e.g., the airport operator/sponsor elects to not mitigate the obstacle risk), AeroNav Products must restrict the IAP accordingly (e.g., using a Notice to Airmen (NOTAM) or a Procedure Amendment).
  - 3.1 **High Risk.** If the penetration(s) are verified as more than 11.0 feet above the 20:1 surface they are considered as high risk and **immediate action** is required to restrict the IAP visibility to at least 1 statute mile (SM) and if the obstacle is unlighted, restrict night operations. The airport operator/sponsor must submit a compliance plan as soon as possible but no later than 30 calendar days from the date of obstacle validation (by the airport owner/sponsor) to the OSG FPT with a copy to the ADO. The compliance plan must indicate actions to remove, light, or lower the obstruction as soon as possible for FAA to review the removal of restrictions. Appropriate IAP restrictions (above) must remain in force on subject IAP(s) until the Visual Area Surface penetration risk is mitigated.
  - 3.2 **Medium Risk.** If the penetrations are verified as more than 3 feet and up to 11.0 feet above the 20:1 surface they are considered as medium risk and no immediate action is required to restrict the IAP. The airport operator/sponsor must submit a compliance plan as soon as possible but no later than 30 calendar days from the date of obstacle validation (by the airport owner/sponsor) to the OSG FPT with a copy to the ADO. The compliance plan must indicate actions to remove, light, or lower the obstruction as soon as possible but not to exceed 180 calendar days. If the penetrations are not mitigated within the prescribed timeframe, appropriate action must be taken to restrict the IAP.
  - 3.3 **Low Risk.** If the penetration(s) are verified as 3 feet or less above the 20:1 surface, they are considered as low risk and no immediate action is required to restrict the IAP. The airport operator/sponsor must submit a compliance plan as soon as possible but no later than 30 calendar days from the date of obstacle validation (by the airport operator/sponsor) to the OSG (FPT) with a copy to the ADO. The compliance plan must indicate actions to remove, light, or lower the obstruction as soon as possible but not to exceed one year. If the penetrations are not mitigated within the prescribed timeframe, appropriate action must be taken to restrict the IAP.

4. **Alternate Mitigation.** The actions specified above do not preclude application of currently approved methods to mitigate 20:1 penetrations (e.g., use of Visual Glideslope Indicator (VGSI) or mitigation based on full-scale deflection, etc.).
5. **Additional Guidance.** This memo applies only to penetrations to existing IAP identified as of the effective date of this memo and is not intended to be used to revise or invalidate previously issued guidance restricting IAP. Obstacles/penetrations reported by FAA Flight Inspection Services aircrews are considered as outside the scope of this memorandum. Penetrations reported by FAA Flight Inspection Services are considered as having been verified and assessed; thus, may result in immediate action to restrict an IAP.
6. **Unusual Circumstances.** Unusual circumstances which prevent compliance with timelines (above) must be submitted by the airport operator/sponsor in writing to the OSG FPT with a copy to the ADO within 10 business days of initial notification. Approval to deviate from the timelines may be granted with consensus of the signatories to this memorandum or their designees. The OSG FPT in coordination with the ADO will respond to airport owner/sponsor submittals no later than 30 calendar days from receipt.
7. **Compliance.** The OSG FPT in coordination with the ADO will monitor the compliance plan and will brief the status during monthly Regional Airspace and Procedures Teams (RAPT) meetings. A standardized report will be used by the OSG FPT and included on the AeroNav Products IFP Gateway. As improved survey data is provided or notification is received that the obstacle is removed, lighted, or lowered to a height below the surface, the OSG FPT will notify AeroNav Products and Aeronautical Information Management Terrain and Obstacle Data (TOD) Team. AeroNav Products will update the documentation on the periodic review sheet. The TOD Team will update the obstacle database within 10 business days. Restrictions imposed on the respective IAP will be removed as appropriate.

**Implementation:** This guidance will be effective on January 6, 2014. Further, this guidance will be reevaluated within 180 calendar days and adjusted as necessary. For the period from the date of this memorandum until January 6, 2014, a national review team will determine the appropriate action for each penetrating case and advise accordingly. Our long term goal is to work with airports to achieve and sustain compliance to the required obstacle surfaces by January 2016.

**Approval/Disapproval:**

Approve:   
Disapprove:

  
\_\_\_\_\_  
Bruce DeCleene, Manager,  
Flight Technologies and Procedures Division

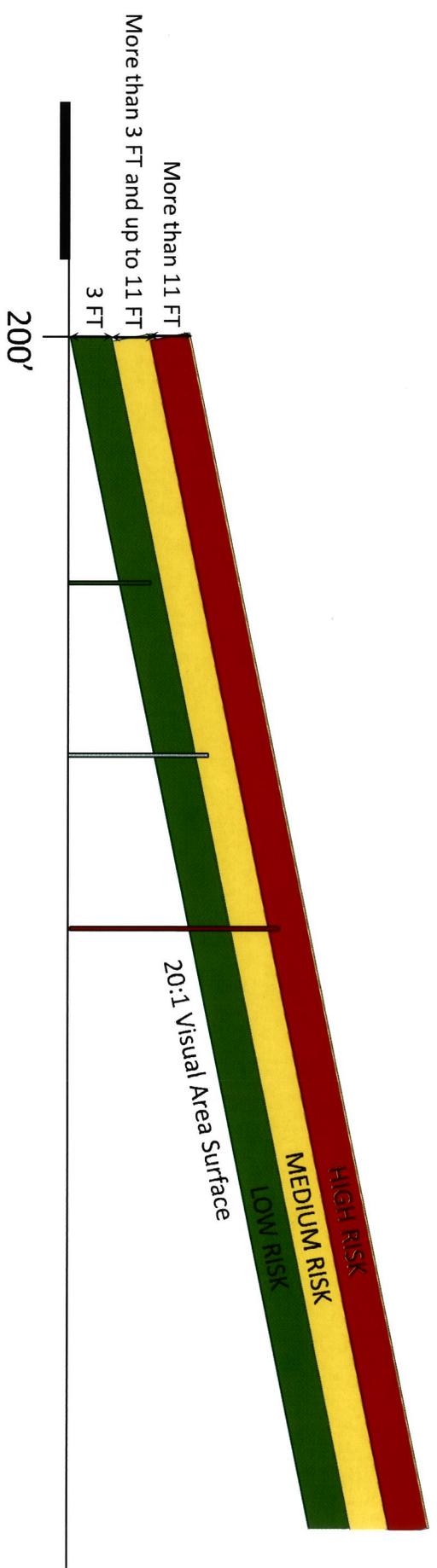
Date: 11/15/13

Approve:   
Disapprove:   
  
\_\_\_\_\_  
Michael J. O'Donnell, Director,  
Office of Airport Safety and Standards

Date: 11/15/13

- Attachments:  
Attachment 1 – 20:1 Risk Assessment  
Attachment 2 – 20:1 Mitigation Flow Chart  
Attachment 3 – Timelines and IAP Restrictions

# Attachment 1. 20:1 RISK ASSESSMENT



**HIGH RISK**  
 (more than 11 feet)

- Immediately restrict IAP visibility to at least 1 SM and if unlighted restrict night operations (e.g., using a Notice to Airmen (NOTAM) or a Procedure Amendment
- Submit compliance plan as soon as possible but no later than 30 days
- IAP restrictions will remain until penetration(s) are mitigated

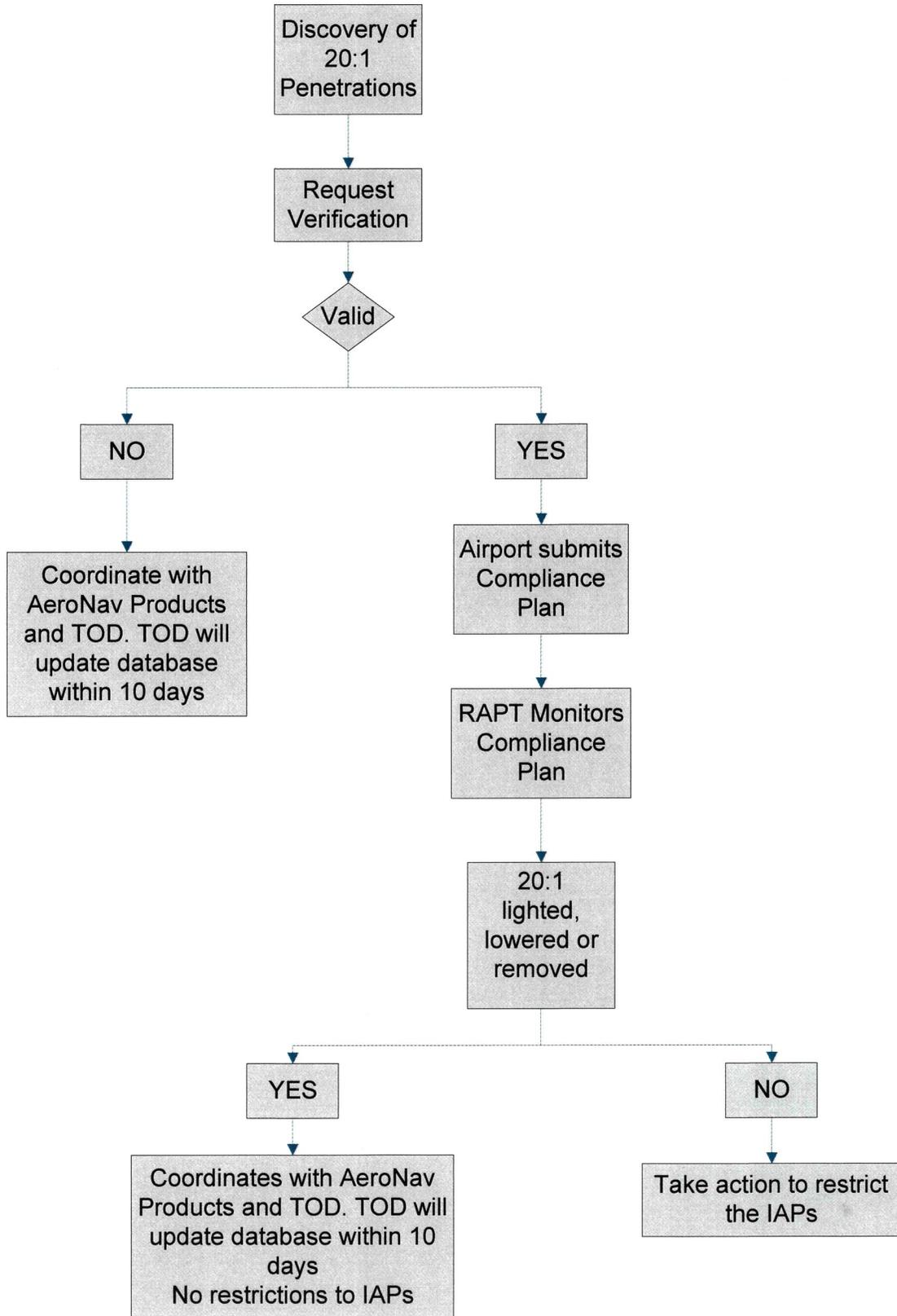
**MEDIUM RISK**  
 (more than 3 feet and up to 11 feet)

- No immediate IAP actions
- Submit compliance plan as soon as possible but no later than 30 days
- Mitigate penetrations as soon as possible but not to exceed 180 days

**LOW RISK**  
 (3 feet or less)

- No immediate IAP actions
- Submit compliance plan as soon as possible but no later than 30 days
- Mitigate penetrations as soon as possible but not to exceed one year

# Attachment 2. 20:1 Mitigation Flow Chart



### Attachment 3. Timelines and IAP Restrictions

11/15/2013

<b>RISK CATEGORIES</b>	Obstacle Penetrates 20:1 by:	Verification Timelines	IAP Restrictions if 20:1 are valid	Compliance Plan Timelines
HIGH	More than 11 feet	Not to exceed 30 days	Immediately restrict IAP visibility and If unlighted restrict night operations (e.g., using a Notice to Airmen (NOTAM) or a Procedure Amendment	IAP Restrictions will remain until penetration(s) are mitigated
MEDIUM	More than 3 feet and up to 11 feet	Not to exceed 30 days	No immediate action	30 days for Compliance Plan & 180 days to light, lower, or remove
LOW	3 feet or less	Not to exceed 30 days	No immediate action	30 days for Compliance Plan & 1 year to light, lower, or remove

NOTE: Verification and compliance timelines should be completed as soon as possible but not to exceed the appropriate number of calendar days. If any of the timelines are not met or the obstructions cannot be removed, lighted or lowered the IAP will be restricted immediately.

IAP Instrument Approach Procedure  
 VIS Visibility