

**GOVERNMENT/INDUSTRY CHARTING FORUM**  
**Instrument Procedures Group**  
**October 25-26, 2004**  
**HISTORY RECORD**

**FAA Control # 04-02-258**

**SUBJECT:** Vertical Navigation (VNAV) Approach Procedures Using DA(H);  
OpSpec C073

**BACKGROUND/DISCUSSION:** Flight Standards issued Handbook Bulletin for Air Transportation (HBAT) 99-08, titled "Vertical Navigation (VNAV) Approach Procedures Using DA(H); OpSpec C073" on July 13, 1999. This Bulletin provides the applicable procedures, operating criteria, and revisions to the operator's operations specifications (OpSpecs), if applicable, to permit additional use of Vertical Navigation (VNAV) capability of Flight Management Systems (FMS) for instrument approach. This bulletin defines a new term, "decision altitude" (DA(H)) for the use of VNAV in conducting certain instrument procedures. Additionally criteria and procedures are provided to authorize the use of the minimum descent altitude (height) (MDA) as a decision altitude (height) [DA(H)] for certain existing instrument approach procedures meeting specified obstacle assessment provisions. This bulletin is applicable to operators conducting operations in accordance with Title 14 Code of Federal Regulations (14 CFR) parts 121, 125, 135, or 129.

It is apparent to AFS-410 that certain technical aspects of this Bulletin are flawed. Specifically, the Bulletin does not provide satisfactory guidance to operators on the method of determining if a visual segment assessment has been made by the FAA in which no penetrations to the 34/1 surface were identified, or the appropriate criteria for industry assessment of the visual segment. In addition, it allows *carte blanche* application of the operational concept of using the MDA as a DH in cases where the underlying non-precision approach may not be suitable. Finally, the Bulletin provides no authority for Part 91 operators to use this capability.

The operational environment has also changed in the intervening five years. The FAA has aggressively pursued the implementation of LNAV/VNAV procedures with DHs, including the development of 715 such procedures as of September 2004.

A PowerPoint presentation concerning this issue is provided.

**RECOMMENDATION:** The instrument procedures group needs to consider this issue with the goal of developing a strategy to offer this capability to a wider set of users (include Part 91) and to accurately identify those procedures which can support the use of the MDA as a DH by LNAV/VNAV equipped aircraft.

**COMMENTS:** This affects FAA OpSpecs, FAA Handbooks and Orders, the Aeronautical Information Manual, the Aeronautical Information Publication, and Charting.

**Submitted by:** Hooper Harris

**Organization:** Manager, Flight Operations Branch, AFS-410

**Phone:** (202) 385-4625

**E-mail:** [hooper.harris@faa.gov](mailto:hooper.harris@faa.gov)

**Date:** October 25, 2004

**INITIAL DISCUSSION (Meeting 04-02):** New issue introduced by Hooper Harris, AFS-410. AFS-410 is concerned that certain technical aspects of Flight Standards Handbook Bulletin for Air Transportation (HBAT) 99-08 may be flawed. Specifically, the Bulletin introduces the term DA(H) for the use of VNAV in conducting certain IAPs. However, it does not provide satisfactory guidance to operators on the method of determining if a visual segment assessment has been made by the FAA to validate there are no penetrations to the 34:1 surface, or the appropriate criteria for industry assessment of the visual segment. In addition, it allows *carte blanche* application of the operational concept of using the MDA as a DA in cases where the underlying non-precision approach may not be suitable. Finally, the Bulletin provides no authority for Part 91 operators to use this capability. It was pointed out by representatives of Jeppesen that these actions by FAA represented a major impact on Jeppesen since the company responded years ago, and at the insistence of many Part 121 and 135 operators, took action to include applicable notations on its IAP charts based on the FAA's original HBAT 99-08 and associated criteria. The action was made at the request of the Air Transport Association and several major airlines/operators who incorporated VNAV operations and the 'DA in lieu of MDA maneuver' extensively into their pilot training programs. Hooper stated that AFS-410 will lead an ad hoc group to refine technical standards for pilot use of a MDA as a DA and develop charting standards to indicate where the application may be used. In addition to the AFS-410 staff, volunteers for the ad hoc group include Michael Riley, NGA, Debbie Copeland, NACO, Brad Rush, NFPO, Tom Schneider and Bill Hammett, AFS-420, Randy Kenagy, AOPA, Mitch Scott, Continental Airlines, Ted Thompson, Jeppesen, Kelly Mckee, MITRE, Kevin Comstock, ALPA, Valerie Watson, NFDC, and Bob Conyers, NBAA. Ted questioned when and how the subject would be brought to the attention of the ATA FMS/RNAV Task Force and ATA Chart & Data Display Committees. Hooper recommended and the ACF members agreed that the ad-hoc working group should first examine the issues. Hooper also requested that all participants review the HBAT and provide input through the ACF-IPG. A copy of Hooper's briefing slides was included as attachment 4 of the meeting minutes. **ACTION: AFS-410.**

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**MEETING 05-01:** Vinny Chirasello, AFS-410, briefed that no action has been taken on this issue. AFS-410 is undergoing a management change and the staff specialist who was assigned this project passed away. The project has been re-assigned; however, the ad-hoc group has not met. Randy Kenagy, AOPA, asked if the group membership is the same and Vinny replied yes. **ACTION: AFS-410.**

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**MEETING 05-02:** Vinny Chirasello, AFS-410, briefed that his office is in the process of re-writing HBAT 99-08 to require a clear 34:1 surface for use of MDA as DA. Discussion addressed the methodology for indicating a clear 34:1 surface. Current charting specifications use a "stipple" (shaded area from MDA to threshold) to indicate a clear 34:1 for RNAV approaches. However, there are no plans under consideration for a charting specification for conventional approaches. Ted Thompson, Jeppesen, reminded the group that AFS-410 took an IOU when the issue was first presented at meeting 04-02 convene an ad hoc group to refine technical standards for pilot use of a MDA as a DA as well as to develop charting specifications to indicate when the application may be used. However, the group has never convened; ergo, Jeppesen has made no charting changes. Vinny responded that his office believes the HBAT should be revised prior to calling a meeting. (**Editor's note:** *Volunteers for the ad hoc group are listed in the discussion at meeting 04-02 above.*) **ACTION: AFS-410.**

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**MEETING 06-01:** Vincent Chirasello, AFS-410, briefed that the status is unchanged. Hopefully, staff additions will expedite a response. He also noted that the effort to harmonize minimums may impact the issue. Ted Thompson, Jeppesen, noted that the resolution must consider the implications regarding how many VNAV procedures can be in a database. Harmonized minima will allow credit for a constant descent final approach (CDFA); therefore, if the vertical descent angle (VDA) is removed, what is the impact on the database? Ted also reminded Vinnie that AFS-410 has still not convened the ad-hoc committee. Vinnie responded that the group would be convened when the draft HBAT 99-08 was complete. **ACTION: AFS-410.**

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**MEETING 06-02:** Robert (Rico) Carty, AFS-410, briefed that after the July 11-12 FAA internal meeting on the issue, it was tabled due to higher priority taskings. The issue is still alive and the group is scheduled to meet again. Ted Thompson, Jeppesen, asked whether the issue is being addressed through the OCP. Jeppesen and other chart makers may have concerns with constant descent final approach (CDFA) minimums. The question is what type documentation will FAA provide to specify what type CDFAs are allowed. Jeppesen's concern was raised because of special charting applications as a result of NBAA and ATA input. Tom Schneider, AFS-420, responded that the issue has not been presented to the OCP due to internal FAA concerns. **ACTION: AFS-410.**

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**MEETING 07-01:** Ernie Skiver, AFS-420, briefed that no update was available. Ted Thompson, Jeppesen, stated Jeppesen still has issues with publishing a constant descent final approach (CDFA) angle. Jeppesen currently provides a VNAV angle even when one is not indicated on the source 8260-series form. Ted further stated that Jeppesen would like written guidance when CDFAs are allowed. In other words, will the proposed FAA guidance allow for use of a commercially developed VNAV angle for the "DA" in lieu of "MDA" maneuver? Tom Schneider, AFS-420, stated that FAA intends to consult with the ICAO OCP before issuing a change to HBAT 99-08 to ensure compatibility with the FAA/JAA harmonized minima effort. Wally Roberts, NBAA, stated that if WAAS is active all Garmin receivers will receive vertical guidance. AFS-410 will continue to work the issue and revise HBAT 99-08. **ACTION: AFS-410.**

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**MEETING 07-02:** Mark Steinbicker, AFS-470, briefed that there has been no progress on this issue since the last meeting due to related issues that must be resolved first. TERPs change 20, which will allow some operators visibility reductions for constant descent final approach (CDFA) must be finalized prior to addressing HBAT 99-08 and developing pilot educational material. Ted Thompson, Jeppesen, stated that since CDFAs will allow use of baro-VNAV to use DA in-lieu-of MDA, Jeppesen would like a listing of what CDFAs methods are acceptable to gain the visibility reduction. Mark said that AFS is planning an Advisory Circular (AC) to address DA vs. MDA and CDFAs techniques. Rich Boll, NBAA, asked whether Part 91 operators would be included. Mark responded that Part 91 operators are excluded from the DA vs. MDA; however CDFAs will apply except for CATs A and B. Rich responded that there are many corporate jets that are CAT B and NBAA does not want to see CAT B excluded. Tom Schneider, AFS-420, stated that HBAT 99-08 does not apply to Part 91. Part 91 was excluded because of training requirements; however, Part 91 operators could get approval through their FSDO. Mark suggested that FAA should start considering possible charting specification changes as soon as possible. John Moore, NACO, recommended that the issue not be brought before the Charting Group until all ops issues are resolved. Mark stated that he did not want charting implications to delay any initiatives. John replied that early consideration is acceptable; however, charting personnel

must be involved in the initial policy. Ted Thompson, Jeppesen, stated that perhaps an ad hoc sub group would be the way to approach the issue. No conclusions were reached. The issue will be jointly worked by AFS-410 and 470. **ACTION: AFS-410 and AFS-470.**

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**MEETING 08-01:** John Swigart, AFS-470, briefed that there has been little progress on this issue since the last meeting due to related issues that must be resolved first. He further briefed that work is continuing on the 120-series Advisory Circular. Ted Thompson, Jeppesen, asked why HBAT 99-08 was removed from publication and what document replaced it. John will check this out and provide the information to Ted. AFS-470 will continue to work the issue and report. **ACTION: AFS-470.**

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