AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
April 24, 2013
HISTORY RECORD

FAA Control # 13-01-309

Subject: LP Procedure Cancelled Because of VDA Not Being Charted

Background/Discussion: Wally Roberts, consultant for NBAA, copied me on a conversation/inquiry dealing with the reasoning behind why an update to the RNAV (GPS) RWY 9 approach at Washington County, PA (KAFJ) had cancelled the LP procedure.

Wally wrote:

> I note that LP minimums are being deleted (as noted on the FAA Form 8260-9) but no reason is given.
>
> Could you please provide us the reason for the removal of LP? Also, why is the procedure presently 'NOTAMed' NA?
>
> **FDC 2/2272** - FI/T IAP WASHINGTON COUNTY, WASHINGTON, PA.
> RNAV (GPS) RWY 9, AMDT 1...
> PROCEDURE NA. WIE UNTIL UFN. CREATED: 07 DEC 16:16 2012

The AeroNav Products response was:

> Control Number 16280 has been assigned to this issue for tracking purposes.
> This concern has been closed with the following response:
>
> **The LP minimums were removed from amendment 1A (to be published on March 7). Amendment 1B (to be published on April 4) was done to correct an error on 1A.**
>
> **The 8260-9 is used to give future developers the reason the LP minimum were removed and the reason was on the back of the -9 two lines above. The reason should have been place together with LP minimums deleted.**
>
> **The procedure was NOTAM'd NA per Flight Inspection, but we will reinstate the procedure, per new guidance.**

Wally presented a follow up question:

> Attached is the back of the 8260-9. Could you point me to the reason for the deletion of LP? I cannot find it.

The following response was received:

> This is the reason, but it has more to do with coding. Once we remove the VDA, the coding has to be changed 3.00 degrees to 0.00 degrees thus negating the LP minimums and the FAS DATA. If we kept the 3.00 degrees in coding it would override what we are trying to prevent. We are trying to prevent the aircraft flying from FAF to THLD, like an LPV /ILS, when it should be flying from FAF to MDA like an LNAV.
>
> We had a test case go thru flight inspection to see if we could keep LP minimums, but it did not work. I hope this answers your question.

PART C - REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

TERPS PARAGRAPH 289 APPLIED TO 1639 AAO
400801N/0802457W

BLOCK 3: ALTIMETER SETTING
SOURCE: KAFJ/KHLG
DISTANCE: 16.54
HRS REMOTE: 24
ADJUSTMENT: 39.54

AWOS-3 AND ASOS ON SERVICE A

RWY 09 VGSI DATA: 4.00/77

WAVVO TO RW09: 3.00 / 50

FLIGHT INSPECTION RESULTS DO NOT WARRANT A VDA

TAA NOT USED, ATC REQUEST

LP MINIMUMS DELETED

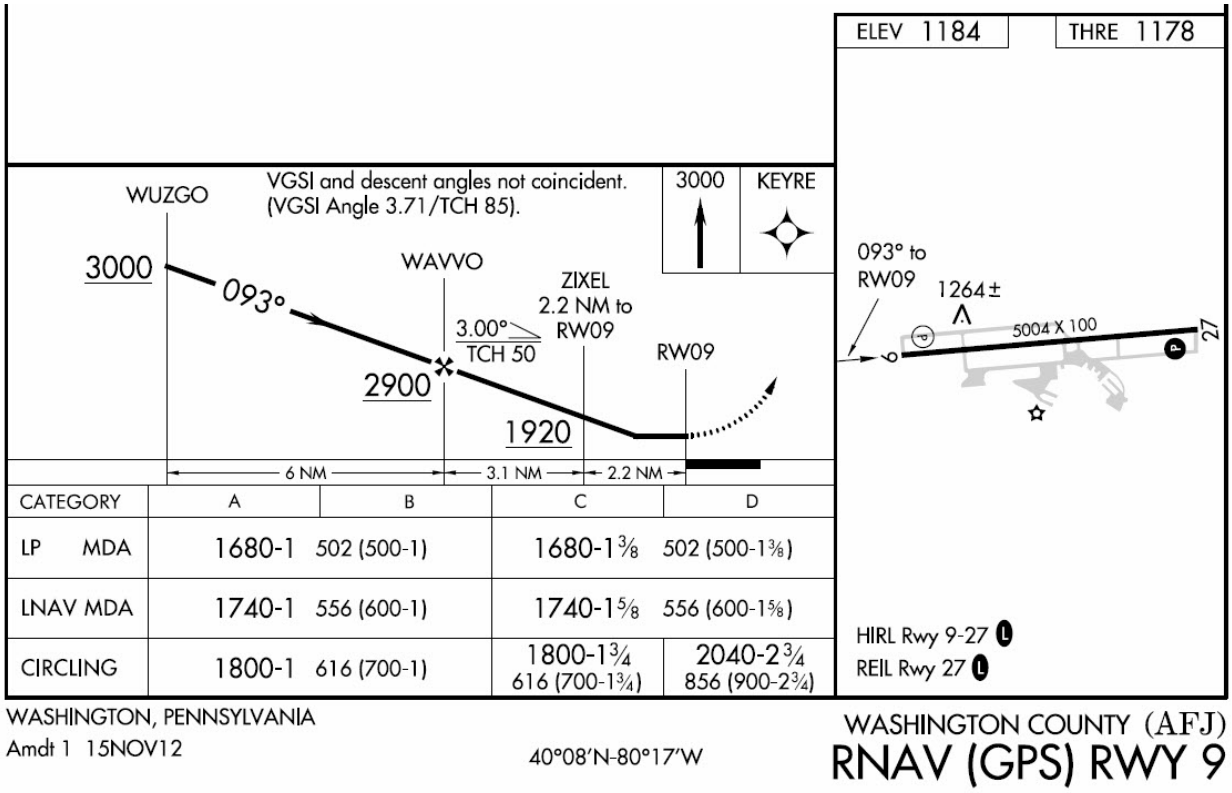
PRESSURE PATTERNS ARE THE SAME
KAFJ (1184 MSL)
KHLG (1195 MSL)

RASS ADJUSTMENT ROUNDED TO 40 AND ADDED AS NOTE

NO ADDITIONAL AIRSPACE REQUIRED.
RASS PRESSURE PATTERNS SAME
KAFJ 1183.90, KHLG 1194.70
RA = 39.56.

LPV AND LNAV/VNAV NOT DEVELOPED DUE TO GQS PENETRATIONS.

ORDER 8260.3, VOLUME 1, VISUAL PORTION OF FINAL PENETRATIONS:
20:1



I called the Quality Advisor involved in the discussion to make sure I understood what was going on. He confirmed that the LP could not be published because it could not be coded with a VDA of 0 (zero). He indicated that the 0 was required to prevent advisory vertical guidance on the procedure.

I have several issues with this. The purpose for LP procedures is to provide a lower MDA than permitted by the LNAV where the smaller OCS footprint allows. It is only used when a vertically guided procedure isn't appropriate for the runway. Although a Constant Angle Non Precision Approach (CANPA) may be desirable, it is not always available as an option on all NPA procedures. The advisory glidepath provided by some manufacturers' GPS units is only permitted to be used during the descent to the MDA and not below it. It is my understanding that regardless whether a VDA is published or not, advisory vertical guidance may be provided, in that if the 8260 doesn't provide the data for the advisory glidepath, the manufacturer may calculate one. Therefore, setting the VDA to 0 in the database doesn't necessarily eliminate the advisory glidepath from the database. Because of the coding issue described by the Quality Advisor, the LP procedure is eliminated. It is ironic that the unintended consequence is that the LNAV will end up with an advisory glidepath, but if it is coded in the database it will not generate advisory guidance, at least in the Garmin units. This is because, the LP procedure in the Garmin units don't support advisory vertical guidance under any circumstance whenever LP is the highest service level coded for the approach, regardless if the integrity at the time of the approach supports LP or LNAV. My understanding of the ACF issue dealing with VDA was only to affect whether or not the VDA would appear on the chart and there was to be a note added to the effect "Descent Angle NA". This situation ends up being a 'catch 22', if the runway doesn't qualify for vertical guidance, and flight testing indicates that CANPA is not an option, it doesn't qualify for LP, and when a LP is coded it doesn't have advisory vertical guidance, but if only a LNAV is coded, it does have advisory vertical guidance.

Recommendations: The database coding of LP procedures should be permitted even when the VDA is not charted. Being able to fly a procedure with CANPA should not be a requirement for a NPA.

Comments: This recommendation affects FAA Order 8260.19.

Note 1: From the 12-02 ACF/IPG Minutes, the related issue is:12-01-301 Publishing a Vertical Descent Angle (VDA) with 34:1 Surface Penetrations in the Visual Segment. This issue may be considered as a continuation of 12-01-301.

Note 2: Quote from the 12-02 ACF/CG Meeting Minutes re: 12-01-252 Warning Note on Vertical Descent Angle (VDA) Procedures: "Bill Hammett's recommendation, that when Flight Inspection deems prudent, the VDA will not be published (on the source document and thus on the chart – databasing remains unresolved), received general acceptance."

Submitted by: John Collins
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Date: February 20, 2013

Initial Discussion - MEETING 13-01: New issue presented by John Collins, GA Pilot. John, in coordination with Wally Roberts, Aviation Consultant, noted that in at least one instance (Washington County, PA), LP minimums were removed from the procedure because flight inspection deemed a vertical descent angle (VDA) should not be published. When queried as to why LP minimums were removed, AeroNav Products responded that the reason was coding requirements: "*This is the reason, but it has more to do with coding. Once we remove the VDA, the coding of the angle has to be changed from 3.00 degrees to 0.00 degrees thus negating the LP minimums and the FAS DATA. If we kept the 3.00 degrees in coding it would override what we are trying to prevent. We are trying to prevent the aircraft flying from FAF to THLD, like an LPV /ILS, when it should be flying from FAF to MDA like an LNAV. We had a test case go thru flight inspection to see if we could keep LP minimums, but it did not work. I hope this answers your question*." John is concerned that if this trend continues, it could lead to additional cases where lower LP minimums are pulled from charts when a VDA is not authorized. He recommends that the database coding of LP procedures should be permitted even when the VDA is not charted (or coded as zero). Being able to fly a procedure with a constant descent final approach (CDFA), although beneficial, should not be made a requirement for a non-precision approach. John emphasized that there will always be published procedures that require "dive and drive" for descent below the MDA; e.g. LP approaches. Tom Schneider, AFS-420, briefed that he spoke with Dan Burdette of Flight Inspection, AJW-331, who said that it was not the intent of Flight Inspection to deny or remove the LP minimums from a procedure without a VDA. In the example given by John Collins, the decision to withdraw the LP minimums was made by AeroNav Products. Dan added that Flight Inspection will take another look at the coding process used for approaches without a VDA. A discussion ensued regarding CDFA and the use of VDA. Ted Thompson, Jeppesen, stated that the use of the VDA remains an education issue to emphasize that the VDA is advisory only and only applicable for a stabilized descent to the MDA. Darren Harris, PSA Airlines, agreed that better guidance is required;

however, we must keep in mind that CDFA is preferable to prohibition of an angle. The group consensus is that LP minimums must be retained even when Flight Inspection states a VDA is not to be published. Ted Thompson suggested that this issue be closed because it's connected by nature to ACF-IPG Issue 12-01-301. John Collins stated he would agree so long as the solution to 12-01-301 considers that LP capability should not be otherwise denied. Tom agreed to do so and the Recording Secretary will ensure the recommendation to retain LP minimums in the absence of a VDA is included in the resolution of issue 12-01-301

Status: Issue CLOSED (Combined with 12-01-301)