

AERONAUTICAL CHARTING MEETING
Instrument Procedures Group
Meeting – April 23, 2019

RECOMMENDATION DOCUMENT

FAA Control # 19-01-343

Subject: Clarify text of notes that affect minima

Background/Discussion:

U.S. Government (FAA) instrument approach charts contain notes that affect minima and are often difficult to interpret. ACM recommendation #18-02-327 in part addressed the difficulty to interpret notes and set up the Chart Modernization Working Group. This recommendation seeks to clarify notes that are ambiguous as to which line or lines of minima they affect.

Example: KNEW RNAV (GPS) RWY 36L

The portion of the note “increase LPV DA to 369 feet, LNAV/VNAV DA to 460 feet and all visibilities 1/8” is not clear. The way this is currently written, it is vague as to whether the visibility change affects only LNAV/VNAV DA or both LPV DA and LNAV/VNAV DA.

T	For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -15°C (5°F) or above 49°C (120°F). DME/DME RNP-0.3 NA. When local altimeter setting not received, use Louis Armstrong New Orleans Intl altimeter setting: increase LPV DA to 369 feet, LNAV/VNAV DA to 460 feet and all visibilities 1/8 mile; increase all MDA 40 feet and Circling Cat D visibility 1/4 mile. VDP and Baro-VNAV NA when using Louis Armstrong New Orleans Intl altimeter setting.
A	

Jeppesen interprets this note as affecting both LPV and LNAV/VNAV lines of minima.

TERPS		STRAIGHT-IN LANDING RWY 36L		CIRCLE-TO-LAND	
		With Local Altimeter Setting	With Local Altimeter Setting		
		LPV DA(H) 340' (332')	LNAV/VNAV DA(H) 431' (423')	LNAV MDA(H) 600' (592')	Max Kts MDA(H)
A				1	90
B					120
C	1 1/8		1 3/8		140
D				1 3/4	165
		With Armstrong New Orleans Intl Altimeter Setting		With Armstrong New Orleans Intl Altimeter Setting	
		LPV DA(H) 369' (361')	LNAV/VNAV DA(H) 460' (452')	LNAV MDA(H) 640' (632')	Max Kts MDA(H)
A				1	90
B					120
C	1 1/4		1 1/2		140
D				1 3/4	165

Example: 2V5 RNAV (GPS) RWY 17

The portion of the note “increase LPV DA to 4020, and LNAV/VNAV DA to 4088 and visibility all Cats 3/8 SM” is not clear. The way this is currently written, it is vague as to whether the visibility change affects only LNAV/VNAV DA or both LPV DA and LNAV/VNAV DA.

T	For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -22°C (-7°F) or above 53°C (127°F). Baro-VNAV and VDP NA when using Imperial altimeter setting. DME/DME RNP-0.3 NA. When local altimeter setting is not received use Imperial altimeter setting: increase LPV DA to 4020, and LNAV/VNAV DA to 4088 and visibility all Cats $\frac{3}{8}$ SM, increase all MDA 160 feet and LNAV Cat C/D visibility $\frac{5}{8}$ SM and Circling Cat C $\frac{1}{2}$ SM, Cat D $\frac{1}{4}$ SM.
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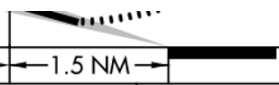


Jeppesen interprets this note as only affecting the LNAV/VNAV line of minima.

TERPS				CIRCLE-TO-LAND	
STRAIGHT-IN LANDING RWY 17				With Local Altimeter Setting	
LPV		LNAV/VNAV	LNAV	Max Kts	MDA(H)
DA(H) 3877' (200')		DA(H) 3945' (268')	MDA(H) 4040' (363')		
A				90	4100' (423') - 1
B				120	4140' (463') - 1
C	1	1	1	140	4540' (863') - 2 $\frac{1}{2}$
D				165	4540' (863') - 2 $\frac{3}{4}$
With Imperial, Nebr Altimeter Setting				With Imperial, Nebr Altimeter Setting	
LPV		LNAV/VNAV	LNAV	Max Kts	MDA(H)
DA(H) 4020' (343')		DA(H) 4088' (411')	MDA(H) 4200' (523')		
A				90	4260' (583') - 1
B			1	120	4300' (623') - 1
C	1	1 $\frac{3}{8}$		140	
D			1 $\frac{5}{8}$	165	4700' (1023') - 3

Procedures with stepdown fixes often include notes with minima adjustments that are not clear.

Example: KHKS ILS or LOC 16

In this example, the circling portion of the notes clearly adjusts both lines of circling minimums. The portion of the note underlined in red changes the S-LOC line(s), but does not specify if the UTUWI fix minimums are affected.

111.7	159	Apt Elev	341	
<div><div></div><div></div><div></div><div></div></div> <div>When local altimeter setting not received, use Jackson Medgar Wiley-Evers Intl altimeter setting, increase all DA 19 feet and all MDA 20 feet. Increase Circling Cat C visibility $\frac{1}{4}$ mile and UTUWI fix Circling Cat C visibility $\frac{1}{4}$ mile. For inop MALSR, increase S-LOC 16 Cats C/D visibility $\frac{3}{8}$. Increase UTUWI fix S-LOC 16 Cats C/D visibility $\frac{3}{8}$. For inop MALSR when using Jackson Medgar Wiley-Evers Intl altimeter setting <u>increase S-LOC Cats C/D visibility $\frac{3}{8}$ mile.</u> Glideslope unusable when control tower closed, only localizer minimums authorized during this period. ADF required.</div>				
ASOS 120.625	JACKSON APP CON ★ 122.0 310.0	HAWKINS TOWER ★ 110.65 (CTAF) 125.8	GND CON 121.0 320.0	
TCH 56		840		
CATEGORY	A	B	C	D
S-ILS 16	541- $\frac{1}{2}$ 200 (200- $\frac{1}{2}$)			
<u>S-LOC 16</u>	840- $\frac{1}{2}$ 499 (500- $\frac{1}{2}$)	840-1 499 (500-1)		
 CIRCLING	860-1 519 (600-1)	880-1 539 (600-1)	1140-2 $\frac{1}{4}$ 799 (800-2 $\frac{1}{4}$)	1320-3 979 (1000-3)
<u>UTUWI FIX MINIMUMS (DUAL VOR RECEIVERS REQUIRED)</u>				
S-LOC 16 ?	760- $\frac{1}{2}$ 419 (500- $\frac{1}{2}$)	760- $\frac{3}{4}$ 419 (500- $\frac{3}{4}$)		
 CIRCLING	860-1 519 (600-1)	880-1 539 (600-1)	1140-2 $\frac{1}{4}$ 799 (800-2 $\frac{1}{4}$)	1320-3 979 (1000-3)

JACKSON, MISSISSIPPI

Recommendations:

Garmin recommends clarifying and improving the way minima adjusting notes are written to remove any doubt or possibility of an incorrect interpretation for what lines of minima they affect.

Current note:

“increase LPV DA to 369 feet, LNAV/VNAV DA to 460 feet and all visibilities 1/8 mile”

Recommendation to affect both lines of minima:

“increase LPV DA to 369 feet and visibilities 1/8 mile, LNAV/VNAV DA to 460 feet and visibilities 1/8 mile”

Recommendation to affect one line of minima:

“increase LPV DA to 369 feet, and LNAV/VNAV DA to 460 feet, LNAV/VNAV DA visibilities 1/8 mile”

Stepdown fix notes:

Current Note:

"For inop MALSR when using Jackson Medgar Wiley-Evers Intl altimeter setting increase S-LOC Cats C/D visibility 3/8 mile."

Recommendation:

"For inop MALSR when using Jackson Medgar Wiley-Evers Intl altimeter setting increase S-LOC and UTUWI fix S-LOC Cats C/D visibility 3/8 mile."

Comments:

As the FAA moves forward with the Chart Modernization project, these notes will be used to create additional lines of minima. Ensuring these notes leave no room for individual interpretation will be the best way to ensure quality moving forward.

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Date: 04/04/2019

Initial Discussion Meeting 19-01: Andrew Lewis, Garmin briefed the issue from [slides](#). This issue is related to Charting Group Issue 18-02-327, but is more specific to chart notes that raise minimums (DA/MDA and/or visibility). Andrew displayed and discussed specific examples of notes from the presentation where the intent of the increases are unclear. Rich Boll, NBAA, pointed out the grammar could be interrupted differently. Gary McMullin, SWA, indicated pilots should not be required to perform math while flying to determine the correct minimums; increases to minimums should instead state the final intended values. Valerie Watson, AJV-A, indicated that regardless of what changes are made, procedure designers will need to annotate the correct minimums that are required; chart developers should not be required to calculate adjustments. Andrew then discussed procedures with step down fixes and displayed another confusing example, where it is unclear whether an increase applies to just the step down fix minimums, or to both sets of minimums. John Bordy proposed following the Charting Group Issue 18-02-327 if changes are not made with that issue then look at possible changes (clarification) from this RD accordingly. Michael Stromberg, UPS, reiterated Gary McMullin's earlier point, that he would prefer to see just the final value (as opposed to required increases that pilot's must add). Item is accepted.

Action Items:

- John Bordy will monitor the progress of ACM-CG Issue 16-02-327.
- John Bordy will review Order 8260.19I to identify any policy that could be improved to remove ambiguity of chart notes related to minimum increases.

Status: Item open.

Meeting 19-02: John Bordy, FAA Flight Procedures and Airspace Group, briefed the issue summary and current status from the [slide](#). This effort will be targeted for the next change after Order 8260.19I and the plan is to have draft language available for the next meeting. Flight Procedures and Airspace Group will continue to watch ACM Charting Group issue 18-02-327.

Though related, 18-02-327 may be obviated by the outcome of this issue. Valerie Watson, FAA/AJV-A25 recalled a comment from the previous meeting suggesting it is desirable to not require the pilot to do math to determine the new visibility from the visibility adjustment notes, but John pointed out this has yet to be decided.

Action Items:

- FAA Flight Procedures and Airspace Group develop possible draft language for a version following 8260.19I and brief at ACM 20-01

Status: Item open

Meeting 20-02 Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), briefed the issue summary and current status from the [slide](#). Diane Adams-Maturo, FPAG, advised this was not included in Order 8260.19I. Jeff said FPAG will make sure this is added as an issue in the issue tracking system to be addressed for a future revision.

Action Items:

- Flight Procedures and Airspace Group develop possible draft language for a future version of Order 8260.19 and brief at ACM 21-01.

Status: Item open

Meeting 21-01: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), briefed the issue summary and current status from the [slide](#). The effort is to clarify and shorten the notes, however this work was overtaken by other work. Diane Adams-Maturo, FPAG, advised they are trying to determine the correct way to approach the problem, and wants to work with the Flight Operations Group toward a solution. Rich Boll, NBAA, concurred with the formation of a working group to discuss both the RASS and inoperative lighting notes. Rich wanted to ensure work continued to reduce the complexity of RASS notes on procedures. Diane said she will work initially with the Flight Operations Group on draft language, and will report back at the next ACM.

Action Items:

- Flight Procedures and Airspace Group will work with the Flight Operations Group on draft language for Order 8260.19 and brief status at the next ACM

Status: Item open

Meeting 21-02: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), briefed the issue summary and current status in conjunction with issue 18-02-337. *Editor's note: See issue 18-02-337*

Actions: Request group feedback via [attached link](#) by January 7, 2022. Status updates to be provided at the next ACM. *Editor's note: This date changed to Feb 11, 2022*

Status: Item open

Meeting 22-01: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), said there are several open issues that are somewhat related, and briefed this item in conjunction with open ACM issue **18-02-337: Improve Remote Altimeter Airport Notes** ([slide](#)) These issues were submitted at different meetings. Rune Duke, FPAG, and Diane Adams-Maturo, FPAG, briefed the issues at ACM 21-02. Rune said they presented some solutions to provide clarity for the notes, received comments prior to and during ACM 21-02, but received no additional comments since the meeting. Rune said they incorporated the previous recommendations into the proposed revision. Order 8260.19 and AIM guidance updates continue on both of these items. Criteria already exists to not require a backup altimeter when the airport weather is on WMSCR. Order 8260.19J is currently in coordination, and has the revised requirement to use the airport identifier instead of the city/airport name for the backup altimeter source. Steve Madigan, Garmin, asked how industry would know if a backup altimeter is on WMSCR service, and would there be any chance of providing a public distribution channel for 8260-9 forms that contain the remote backup altimeter setting information. Pat Mulqueen, FAA Instrument Flight Procedures Group (AJV-400), said the form access request is already being investigated. Jeff recapped the FAA is working on Order 8260.19 changes and AIM updates. Both issues will remain open.

Actions: FPAG will provide continuing status updates to Order 8260.19 and AIM change.

Status: Item open.

Meeting 22-02: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), discussed the issue regarding the ambiguity of notes to avoid misinterpretation. Diane Adams-Maturo, FPAG, has been working through the proposed order and AIM changes. These changes are captured in the FPAG internal issue tracking system and will be addressed in a future order revision. Associated AIM changes will be addressed as the order revisions are undertaken.

Actions: FPAG will continue to work the issue and will report status at ACM 23-01.

Status: Item open

Meeting 23-01: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), discussed the issue regarding the ambiguity of notes to avoid misinterpretation from the ([slide](#)).

These changes have been briefed at previous ACM meetings, and no negative comments were received. The proposed changes have been incorporated into Order 8260.19J which will be published this year. Possible AIM changes are still yet to be determined and would include changes associated with RD 18-02-337. There were no additional comments during this meeting.

Actions:

- FPAG will continue to work the issue and report on status of revisions to Orders 8260.19.
- FPAG and Flight Operations Group (FOG) will continue to coordinate on possible AIM changes and will provide a status update at ACM 23-02.

Status: Item open

Meeting 23-02: Jeff Rawdon, FAA Flight Procedures and Airspace Group (FPAG), discussed the issue via a [slide](#). Applicable Order 8260.19 changes have been published, and after internal review it was determined there were no practical AIM examples. The expectation will be for pilots to read and interpret the notes, which should be much simpler with implementation of the Order 8260.19 changes. Andrew Lewis, Garmin, was the proponent and agrees with the results and closure of the RD.

Status: Item closed