

**AERONAUTICAL CHARTING MEETING**  
**Instrument Procedures Group**  
**Meeting 20-02 – October 27, 2020**

**RECOMMENDATION DOCUMENT**

**FAA Control # 20-02-352**

**Subject: Combine RNAV (GPS), ILS and GLS charts into one chart**

**Background/Discussion:** Combining these procedures could significantly reduce the amount of procedures that AIS has to maintain, and a biannual review of the ILS could be a biannual review of both the GLS and LPV lines of minima at the same time.

FAAO 8260.19 paragraph 4-6-2e allows an ILS and/or LOC to be combined on an RNAV (GPS) procedure, the Navy has a couple of these procedures. Although there currently is not any similar guidance for a GLS procedure to be combined, original GLS guidance had the GLS as a line of minimum on an RNAV (GPS) approach.

Technically, from a procedure design standpoint the ILS, LPV and GLS are identical, only the equipment used to navigate those approaches is different. Other than that, a CAT I ILS, LPV, GLS has the same Obstacle Evaluation Area (OEA), and Obstacle Clearance Surface (OCS) for evaluating obstacles. They also have the exact same missed approach surfaces (although most of the ILS have a different missed approach, the surfaces and areas are the same). This means that all three should always have the exact same minimums for the same runway when evaluated for the same ground track.

The line of minima for ILS, GLS and LPV could all be published on the same line of the chart since the minima should always be the same. Then the other lines of minima could be the LNAV/VNAV, LOC, LNAV and if needed the Circling. The FAAO 8260.19 allows up to 5 lines of minima, so these approaches could have:

First Line:	ILS GLS LPV	DA
Second Line:	LNAV/VNAV	DA
Third Line:	LOC	MDA
Fourth Line:	VNAV	MDA
Fifth Line:	Circling	CMDA

CATEGORY	A	B	C	D	E
ILS GLS LPV DA	296/18		200 (200- <sup>1</sup> / <sub>2</sub> )		
LNAV/VNAV DA	421/32		325 (400- <sup>5</sup> / <sub>8</sub> )		
S-LOC 8R	560/24 465 (500- <sup>1</sup> / <sub>2</sub> )		560/50 465 (500-1)		
LNAV MDA	580/24 484 (500- <sup>1</sup> / <sub>2</sub> )		580/50 484 (500-1)		

The top portion of the chart would need to be modified to capture the WAAS/GBAS channel numbers, the ILS Frequency and channel number, along with their WAAS/GBAS approach ID. These can be placed next to the ILS information. This would take some moving information around, but it will still leave plenty of space for the

plan view and profile views of the charts (especially since many PBN notes will be consolidated in the PBN Requirements box).

HOUSTON, TEXAS

AL-5461 (FAA)

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APP CRS <b>087°</b>	Rwy Idg TDZE Apt Elev	<b>9402</b> <b>95</b> <b>96</b>	<b>RNAV (GPS) or GLS or ILS or LOC RWY 8R</b>			
			GEORGE BUSH INTERCONTINENTAL/HOUSTON (IAH)			
LOC/DME I-IAH <b>109.7</b> Chan <b>34</b>	LAAS CH <b>20251</b> RPI <b>GIAH</b>	WAAS CH <b>53626</b> <b>W08B</b>	RNP APCH-GPS or RADAR required for procedure entry, DME.	MISSED APPROACH: Climb to 3000 on heading 087° and on DAS VORTAC R-242 to DAS VORTAC and hold.		

Notes could also be combined since often they are similar in nature. In this example, I was able to combine the MALSR inop note for all three procedures. Many of the other notes are repeated on each procedure.

<p>▼ For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -3°C (27°F) or above 54°C (130°F). For inop MALSR, increase LPV-ILS - GLS Cat E visibility to RVR 4000, LNAV/VNAV all Cats visibility to RVR 6000, and LNAV - LOC Cat C/D/E visibility to 1<sup>3</sup>/<sub>8</sub>. Simultaneous approach authorized with Rwy 8L and Rwy 9. DME/DME RNP-0.3 NA. Use of FD or AP providing RNAV track guidance required during simultaneous operations. LNAV procedure NA during simultaneous operations. Autoland approach NA.</p>					
D-ATIS <b>124.05</b>	HOUSTON APP CON <b>120.05 379.1</b> EAST <b>124.35 316.15</b> WEST	HOUSTON TOWER <b>125.35 290.2</b>	GND CON <b>118.575</b>	CLNC DEL <b>128.1</b>	CPDLC

**Recommendations:** For runways where the RNAV (GPS), ILS or LOC, or GLS approaches have the same track, combine these procedures onto one chart. Future designs could look to match the RNAV (GPS), ILS and GLS approaches to be able to combine them on a single chart, reducing the number of charts that need to be maintained.

**Comments:** Attached is an example chart for KIAH

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**Initial Meeting 20-02:** William Fernandez, Aeronautical Information Services, briefed the recommendation from a [slide](#), suggesting combination of procedures by using different lines of minima. FAA Order 8260.19 allows up to five lines of minima, and this would reduce the overall inventory of procedures. He acknowledged the notes could become lengthy and chart clutter would be a consideration, but feels there are possible points of value and wants the input. John Collins, GA pilot said the concept would be difficult for the pilot. Also, because of approach naming conventions driving the database, John wondered how the aircraft FMS would define the approaches. Kevin Allen, American Airlines, discussed the confusion of a new procedure in China (ZGSZ RNP ILS 34 AR) describing the confusion and complexity that could arise. Rich Boll, NBAA, discussed FMS limitations, especially with all the names in the title. He also discussed coding issues and documentation on source documents. Missed approach differences would be hard to work through. Rich said there are places where this may

have an advantage, like in Houston. Andrew Lewis, Garmin, said this would be a problematic concept due to coding and unclear notes, and this may double the length of the notes section. He asked regarding benefit, and Bill said it could streamline the periodic review process and reduce the inventory of procedures. John Moore, Jeppesen, expressed concern that pilots would not like the suggestion, and the confusion factor would be a risk. Rich pointed out the recommendation addresses the position of an 8260-series form driving a charting agency, and but with the interest of streamlining the flight procedure evaluation process. Rich suggested perhaps focusing on the evaluation process and not the charting, considering where many surfaces and routes are the same to aid the process. The group unanimously agreed this item should not be accepted for further consideration, however, it is noted that the language in Order 8260.19 could be interpreted that the concept as presented in the RD could be valid. Flight Procedures and Airspace Group will review Order 8260.19 and clarify the language if the intent is not clear.

**Action Items:**

- Flight Procedures and Airspace Group will review the language in FAA Order 8260.19 to be certain the intent is clear, and revise if it is not.

**Status:** Item not accepted