

**AERONAUTICAL CHARTING FORUM**  
**Instrument Procedures Group**  
**Meeting 16-02 October 25, 2016**

**RECOMMENDATION DOCUMENT**

**FAA Control # 16-02-327**

**Subject:** Arrival Holding Patterns Required for Approach Entry

**Background/Discussion:** Recently, two RNAV IAPs were published with an arrival holding pattern that is required for procedure entry. One is a new RNAV Rwy 19R procedure at KRVS (attachment 1); the other is an amendment of the RNAV Rwy 30 procedure at KLRU (Attachment 2). For reference also attached are the former KLRU RNAV Rwy 30 (Attachment 3) and a snippet of the KLRU en route low-altitude area (Attachment 4).

These are two examples of an arrival holding pattern being a de facto HILPT, which is contrary to the intent of criteria and specifically prohibited by implementation policy in FAA Order 8260.19G. Based on input from NBAA, and follow-up by AFS-420, a NOTAM was issued prohibiting arrival on the KLRU RNAV Rwy 30 from V94 westbound or V611 southeast bound. The NOTAM removes some ambiguity to procedure entry but does not change the fact that the arrival holding pattern at MOLLY is a de facto HILPT. Note also the confusion at KLRU where straight-in on V94 from the west is permitted for the ILS Rwy 30 IAP even when RNAV navigation is used. (Attachment 5).

NBAA believes that neither pilots nor controllers understand the use of arrival holding patterns for entry into the instrument approach procedure. The Aeronautical Information Manual (AIM) does not discuss the use of arrival holding for procedure entry when turn angle limitations are exceeded. Further, NBAA notes that the current guidance furnished to air traffic controllers in FAA Order JO 7110.65, Air Traffic Control, paragraph 4-8-1, does not address the use of arrival holding when required for procedure entry nor are there any intercept angle limitations prescribed for RNAV direct-to clearance to a feeder fix (Note: The Order does limit turn angle to 90 degrees or less at the IAF and IF). Because RNAV will be used to enter an RNAV approach, the 90 degree or less turn angle restrictions applied to airway-to-feeder turns using RNAV must also be applied when an RNAV direct-to clearance is issued to a feeder fix.

**Recommendations:** NBAA makes the following recommendations with respect to the use of arrival holding for instrument procedure entry and RNAV direct-to clearance to feeder fixes:

1. Criteria and policy should be revised to prohibit the use of an arrival holding pattern when a satisfactory HILPT can be placed at the intermediate fix. When that is not possible, then an arrival holding pattern may be used for procedure entry from an airway provided the holding pattern is coded in the nav-database as part of the applicable approach transition and a chart note is published informing the pilot that the arrival hold is mandatory for procedure entry. NBAA proposes the following Planview Note:

“Arrivals at <fix name> on <airway><direction>, arrival holding for approach entry mandatory”

Example:

“Arrivals at JOXIT on V343 northeast bound, arrival holding for approach entry mandatory”

See example in ATTACHMENT 6

2. Amend the AIM to provide guidance to pilots on the use of arrival holding:

#### **5-4-9. Procedure Turn, and Hold-in-lieu of Procedure Turn, and Arrival Holding**

7. Arrival Holding. Some approach charts have an arrival holding pattern depicted at an IAF or at a feeder fix located along an airway. The arrival hold is depicted using a “thin line” since it is not always a mandatory part of the instrument procedure.

(a) Arrival holding is charted where holding is frequently required prior to starting the approach procedure so that detailed holding instructions are not required. The arrival holding pattern is not authorized unless assigned by ATC. Holding at the same fix may also be depicted on the enroute chart.

(b) Arrival holding is also charted where it necessary to use a holding pattern to align the aircraft for procedure entry from an airway due to turn angle limitations imposed by procedure design standards. When the turn angle from an airway into the approach procedure exceeds 90 degrees, an arrival holding pattern is published along with a note on the procedure specifying the airway and arrival direction where use of the arrival hold for procedure entry is mandatory. Unlike a Hold-in-lieu of Procedure Turn, use of the arrival holding pattern is not authorized until assigned by ATC. Once ATC issues holding instructions and the aircraft reports entry into the hold, ATC will issue the approach clearance. The pilot may then exit the hold after the next passage over the holding fix and then continue with the published procedure.

3. Amend AIM regarding RNAV direct-to feeder fix turn angle limitations

#### **5-4-6. Approach Clearance**

6. In addition to the above, RNAV aircraft may be issued a clearance direct to a feeder fix or the IAF/IF at intercept angles not greater than 90 degrees for both conventional and RNAV instrument approaches. Controllers may issue a heading or a course direct to a fix between the IF and FAF at intercept angles not greater than 30 degrees for both conventional and RNAV instrument approaches. In all cases, controllers will assign altitudes that ensure obstacle clearance and will permit a normal descent to the FAF. When clearing aircraft direct to the IF, ATC will radar monitor the aircraft until the IF and will advise the pilot to expect clearance direct to the IF at least 5 miles from the fix. ATC must issue a straight-in approach clearance when clearing an aircraft direct to an IAF/IF with a procedure turn or hold-in-lieu of a procedure turn, and ATC does not want the aircraft to execute the course reversal.

4. Amend FAA Order JO 7110.65, Air Traffic Control, Paragraph 4-8-1:

a. Add New Note 3 to **PHRASEOLOGY – CLEARED STRAIGHT-IN (type) APPROACH**

3. Arrival holding may be depicted at the IAF or at a feeder fix where use of the hold is mandatory for procedure entry from an airway. The approach procedure will publish a Note identifying the airway and arrival direction where the use of the arrival hold is mandatory. The arrival holding pattern is not authorized until ATC issues holding instructions; however, ATC must assign the hold before the aircraft can be cleared for the approach. Once the pilot reports established in the hold, the approach clearance may be issued.

b. Amend paragraph 4-8-1 h. 1:

**h.** For RNAV–equipped aircraft operating on unpublished routes, issue approach clearance for conventional or RNAV SIAP including approaches with RF legs only after the aircraft is: (See FIG 4–8–4).

**1.** Established on a heading or course direct to the IAF or a feeder fix at an intercept angle not greater than 90 degrees and is assigned an altitude in accordance with

b2. Radar monitoring is required to the IAF for RNAV (RNP) approaches when no hold–in–lieu of procedure turn is executed.

NBAA also recommends FAA explore an option that would permit the pilot to execute the arrival holding entry and then proceed inbound on the approach, without a specific ATC clearance to execute the arrival hold when procedure entry requires the use the arrival hold.

**Comments:** This affects FAA Orders 8260.58A, 8260.3C, 8260.19G, JO 7110.65 and the AIM.

**Submitted by:** Richard J. Boll II

**Organization:** NBAA

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**E-mail:** richard.boll@sbcglobal.net

**Date:** 10/4/2016

TULSA, OKLAHOMA

AL-5427 (FAA)

16203

WAAS CH <b>81939</b> <b>W19A</b>	APP CRS <b>187°</b>	Rwy Idg TDZE Apt Elev	<b>5102</b> <b>638</b> <b>638</b>
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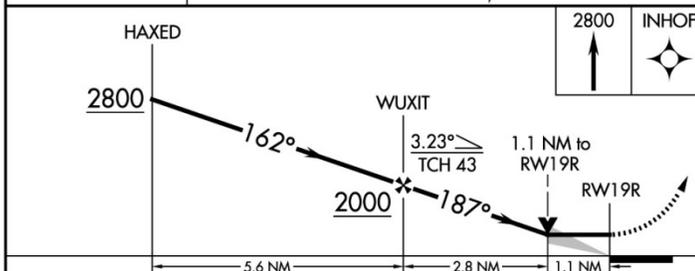
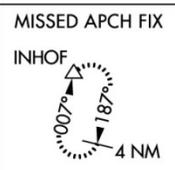
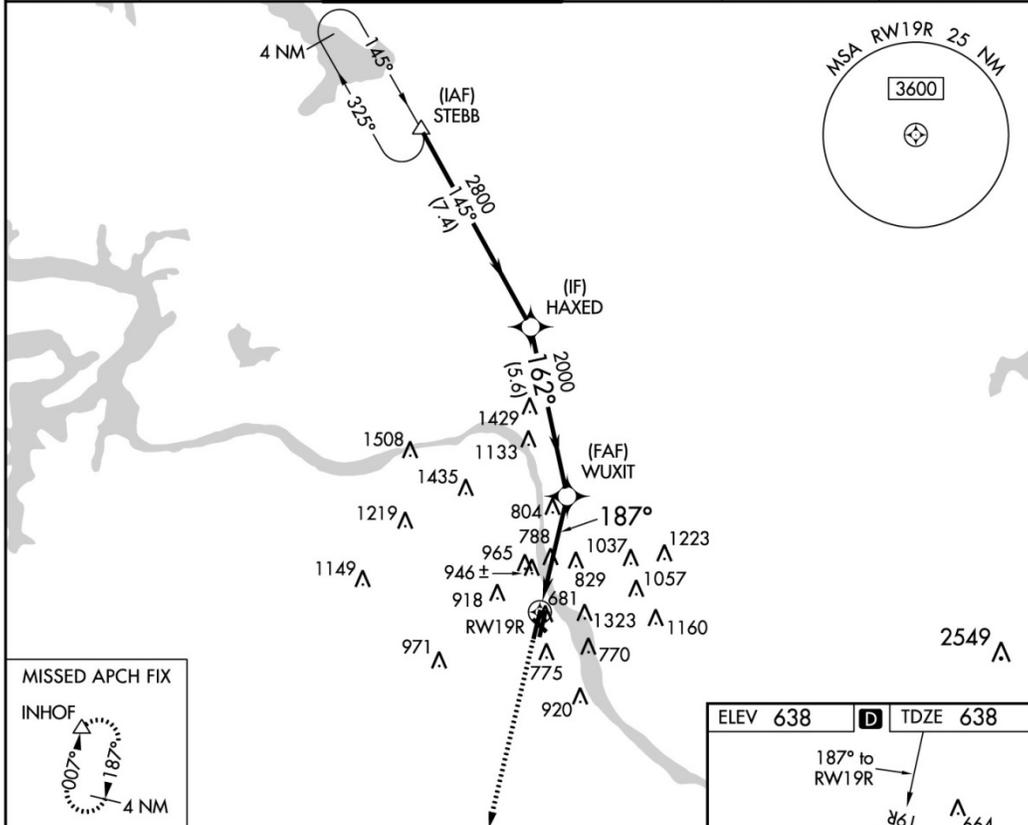
# RNAV (GPS) RWY 19R

RICHARD LLOYD JONES JR (RVS)

▼ Night landing: Rwy 13 NA. Circling NA NE of Rws 31 and 19L. DME/DME RNP-0.3 NA.  
 ▲ VDP NA when using Tulsa altimeter setting. When local altimeter setting not received, use Tulsa Intl altimeter setting and increase all MDAs 40 feet; increase LNAV Cat C and D visibility 1/8 mile and LP visibility Cat C and D 1/4 mile and Circling Cat C visibility 1/4 mile.

MISSED APPROACH:  
 Climb to 2800 direct  
 INHOF and hold.

ATIS <b>126.5</b>	TULSA APP CON <b>134.7</b>	RIVERSIDE TOWER * <b>120.3 (CTAF) 0</b>	GND CON <b>121.7</b>	CLNC DEL <b>124.5</b>	UNICOM <b>122.95</b>
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CATEGORY	A	B	C	D
LP MDA	1040-1	402 (500-1)	1040-1 1/8	402 (500-1 1/8)
LNAV MDA	1200-1	562 (600-1)	1200-1 5/8	562 (600-1 5/8)
<b>C</b> CIRCLING	1260-1 622 (700-1)	1280-1 642 (700-1)	1280-1 3/4 642 (700-1 3/4)	1380-2 1/2 742 (800-2 1/2)

TULSA, OKLAHOMA  
 Orig-A 21JUL16

36°02'N-95°59'W

# RICHARD LLOYD JONES JR (RVS)

## RNAV (GPS) RWY 19R

LAS CRUCES, NEW MEXICO

AL-869 (FAA)

16231

WAAS CH <b>63136</b> <b>W30A</b>	APP CRS <b>307°</b>	Rwy Idg TDZE Apt Elev <b>7499</b> <b>4444</b> <b>4457</b>
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# RNAV (GPS) RWY 30

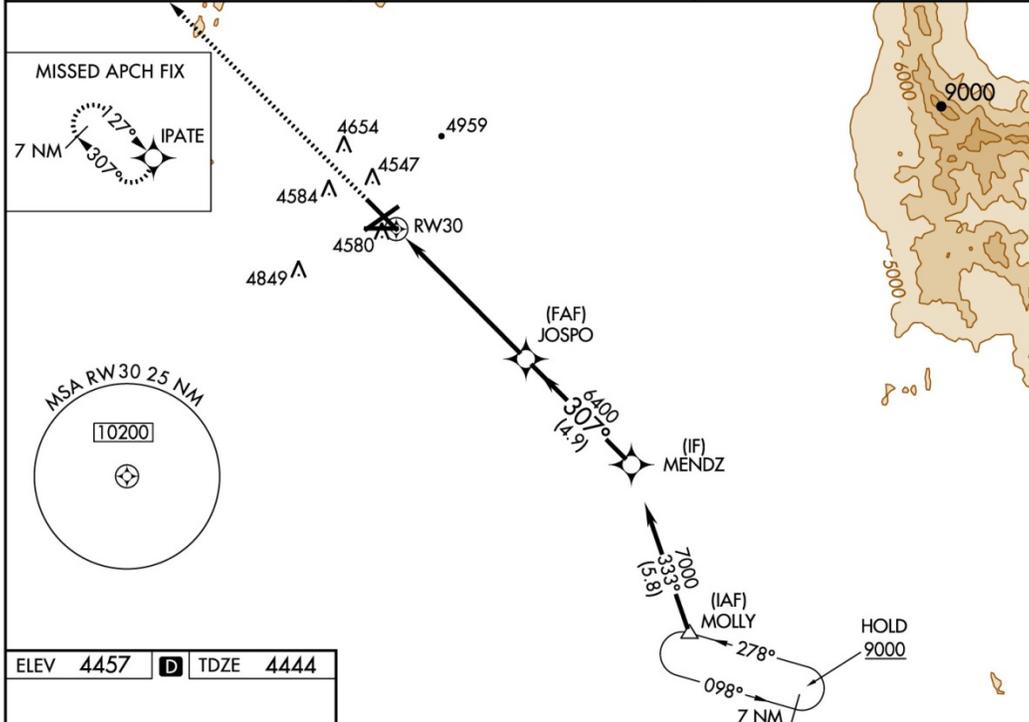
LAS CRUCES INTL (LRU)

**⚠** For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -12°C (11°F) or above 51°C (124°F). DME/DME RNP-0.3 NA. Baro-VNAV and VDP NA when using Deming altimeter setting. When local altimeter setting not received, use Deming altimeter setting: increase LPV DA to 4758 feet, LNAV/VNAV DA to 4863 feet and all visibilities 3/8 mile; increase all MDA 120 feet and visibility Cat C and D 1/2 mile.

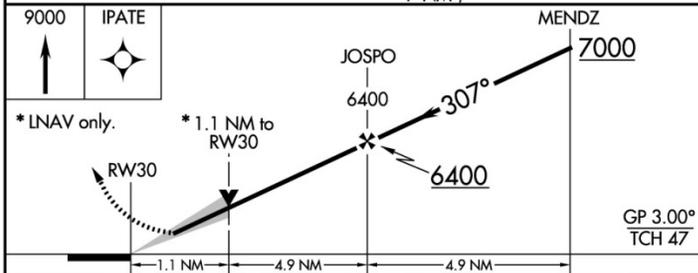
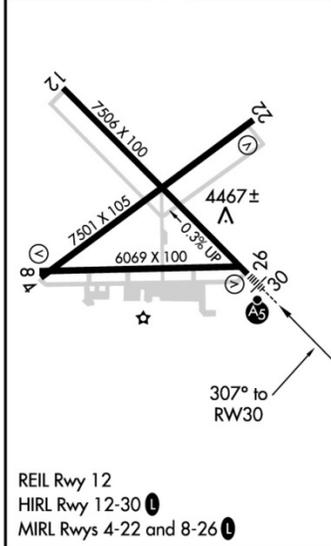


MISSED APPROACH: Climb to 9000 direct IPATE and hold, continue climb-in-hold to 9000.

AWOS-3 <b>119.025</b>	ALBUQUERQUE CENTER <b>128.2 285.5</b>	UNICOM <b>122.7(CTAF)</b>
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ELEV 4457	<b>D</b> TDZE 4444
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CATEGORY	A	B	C	D
LPV DA	4644-1/2		200 (200-1/2)	
LNAV/VNAV DA	4749-5/8		305 (300-5/8)	
LNAV MDA	4840-1/2 396 (400-1/2)		4840-5/8 396 (400-5/8)	
<b>C</b> CIRCLING	4900-1 443 (500-1)	5040-1 583 (600-1)	5320-2 1/2 863 (900-2 1/2)	5320-2 3/4 863 (900-2 3/4)

LAS CRUCES, NEW MEXICO  
Amdt 2 18AUG16

32°17'N-106°55'W

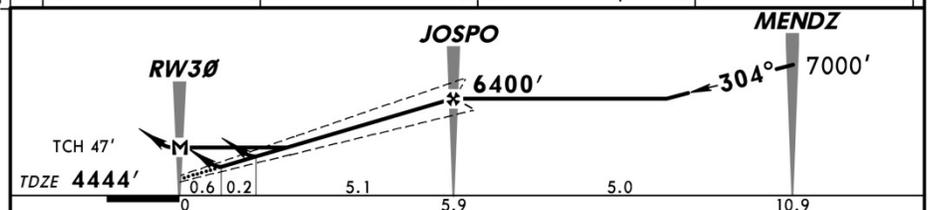
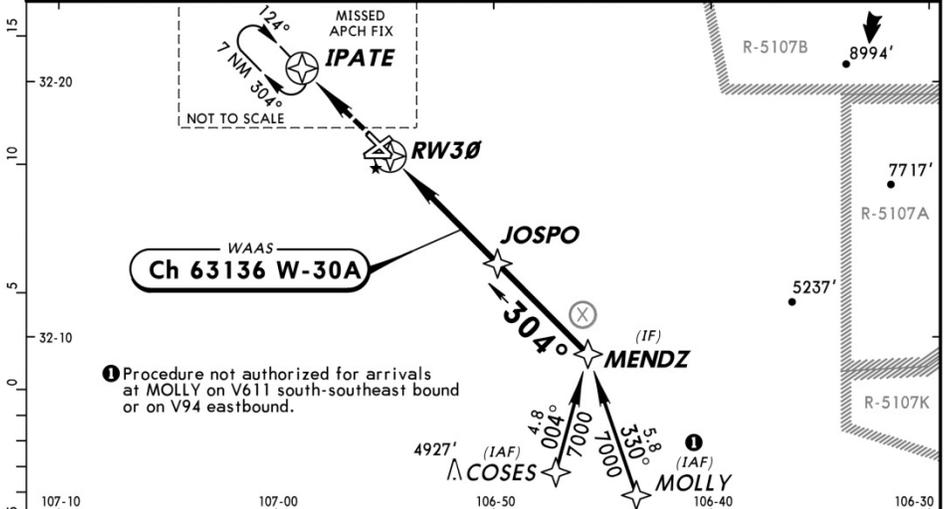
# RNAV (GPS) RWY 30

**KLRU/LRU**  
LAS CRUCES INTL

**JEPPESEN**  
7 NOV 14 (12-2) Eff 13 Nov

**LAS CRUCES, N MEX**  
RNAV (GPS) Rwy 30

AWOS-3 119.02		ALBUQUERQUE Center (R) 128.2		LAS CRUCES INTL UNICOM CTAF 122.7	
WAAS <b>Ch 63136</b> W-30A	Final Apch Crs <b>304°</b>	Minimum Alt <b>JOSPO</b> <b>6400'</b> (1956')	LPV DA(H) (CONDITIONAL) <b>4694'</b> (250')	Apt Elev <b>4457'</b> TDZE <b>4444'</b>	
<b>MISSED APCH:</b> Climb to 9000' direct IPATE and hold, continue climb-in-hold to 9000'. Alt Set: INCHES Trans level: FL 180 Trans alt: 18000' 1. Use local altimeter setting; if not received, use Deming altimeter setting. 2. Baro-VNAV not authorized when using Deming altimeter setting. 3. For uncompensated Baro-VNAV systems, LNAV/VNAV not authorized below -11°C (13°F) or above 45°C (113°F). 4. DME/DME RNP-0.30 not authorized. 5. Pilot controlled lighting 122.7.					
10,200' MSA RW30					



Gnd speed-Kts	70	90	100	120	140	160	MALSR	9000'	IPATE
Glide Path Angle	3.05°								
LPV, LNAV/VNAV: MAP at DA									
LNAV: MAP at RW30									

	1 STRAIGHT-IN LANDING RWY 30 With Local Altimeter Setting									1 CIRCLE-TO-LAND With Local Altimeter Setting		
	LPV DA(H) <b>4694'</b> (250')			LNAV/VNAV DA(H) <b>4741'</b> (297')			LNAV MDA(H) <b>4840'</b> (396')			Max Kts	MDA(H)	
A	1/2	3/4	1/2	3/4	7/8	1/2	3/4	1	90		4900' (443') - 1	
B									120	4980' (523') - 1		
C	1			1			1			140	5320' (863') - 2 1/2	
D	1			1			1 1/8			165	5320' (863') - 2 3/4	
	With Deming Altimeter Setting									1 CIRCLE-TO-LAND With Deming Altimeter Setting		
	LPV DA(H) <b>4808'</b> (364')			LNAV/VNAV DA(H) <b>4855'</b> (411')			LNAV MDA(H) <b>4960'</b> (516')			Max Kts	MDA(H)	
A	5/8	3/4	1 1/8	3/4	1	1 1/4	1/2	3/4	1		90	5020' (563') - 1
B										120	5100' (643') - 1	
C	1			1			1			140	5440' (983') - 3	
D	1			1			1 1/4			165	5440' (983') - 3	

1 Night landing: Rwy 30 CAT C & D, Rwy 22 not authorized.  
 CHANGES: Procedure © JEPPESEN, 2003, 2014. ALL RIGHTS RESERVED.



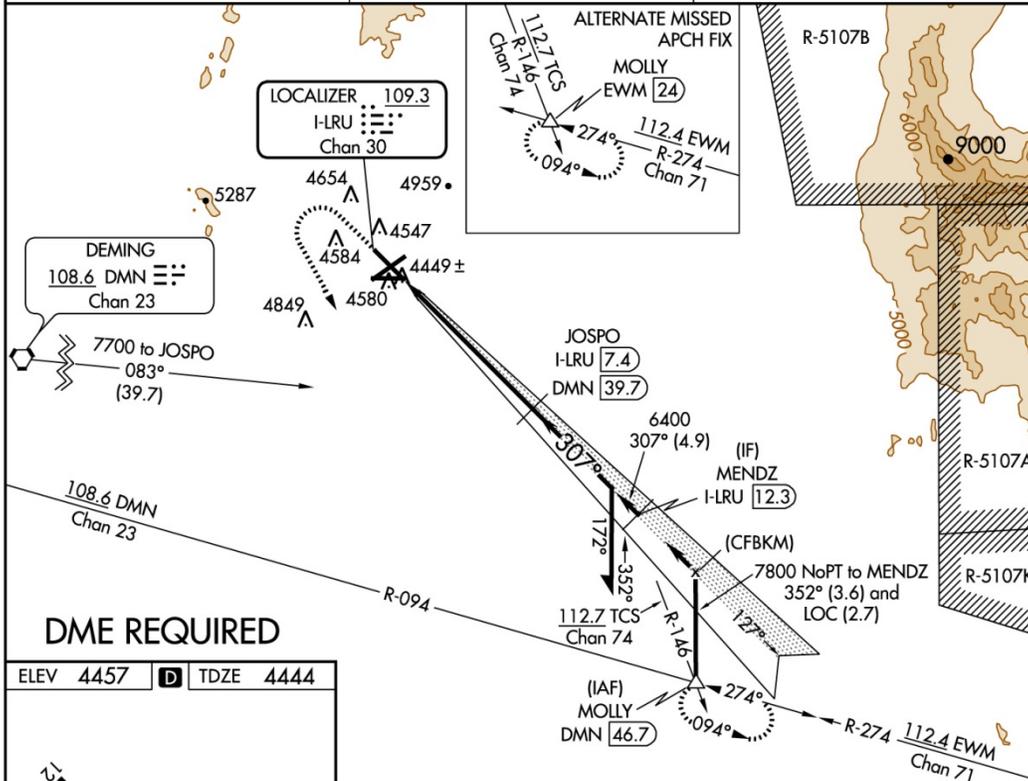
LOC/DME I-LRU	APP CRS	Rwy ldg	7499
109.3	307°	TDZE	4444
Chan 30		Apt Elev	4457

# ILS or LOC RWY 30

LAS CRUCES INTL (L.R.U)

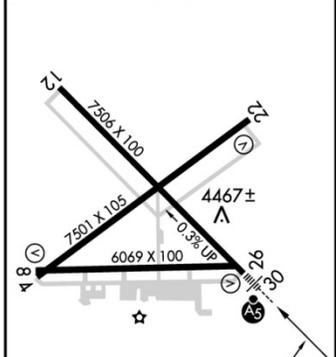
<p><b>NA</b> DME required. When local altimeter setting not received, use Deming altimeter setting: increase DA to 4758 feet and all visibilities 1/8 mile; increase all MDA 120 feet and visibility Cat C and D 1/2 mile. VDP NA when using Deming altimeter setting.</p>	<p><b>MALSR</b></p>	<p><b>MISSED APPROACH:</b> Climb to 5100 then climbing left turn to 9000 on heading 139° and on DMN VORTAC R-094 to MOLLY INT/DMN 46.7 DME and hold.</p>
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AWOS-3 <b>119.025</b>	ALBUQUERQUE CENTER <b>128.2 285.5</b>	UNICOM <b>122.7 (CTAF)</b>
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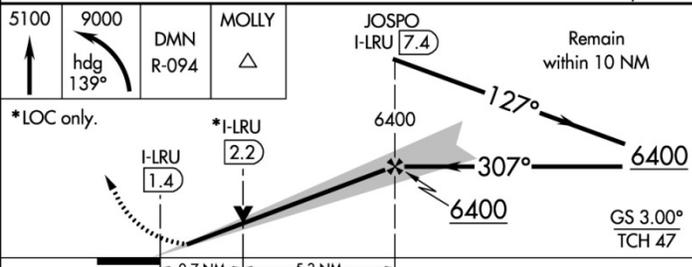


## DME REQUIRED

ELEV 4457	TDZE 4444
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REIL Rwy 12	307° 6 NM from FAF
HIRL Rwy 12-30	
MIRL Rwy 4-22 and 8-26	
FAF to MAP 6 NM	
Knots	60 90 120 150 180
Min:Sec	6:00 4:00 3:00 2:24 2:00



CATEGORY	A	B	C	D
S-ILS 30	4644-1/2 200 (200-1/2)			
S-LOC 30	4720-1/2 276 (300-1/2)			
<b>C</b> CIRCLING	4900-1 443 (500-1)	5040-1 583 (600-1)	5320-2 1/2 863 (900-2 1/2)	5320-2 3/4 863 (900-2 3/4)

LAS CRUCES, NEW MEXICO  
Amdt 3 18AUG16

32°17'N-106°55'W

# LAS CRUCES INTL (L.R.U)

## ILS or LOC RWY 30

