



INSTRUMENT FLYING

REPRINTED DECEMBER 1968 WITH CHANGES 1 AND 2 INCLUDED

DEPARTMENT OF THE AIR FORCE



16 Aug 2018

[Replaced by
AFM 11-217](#)



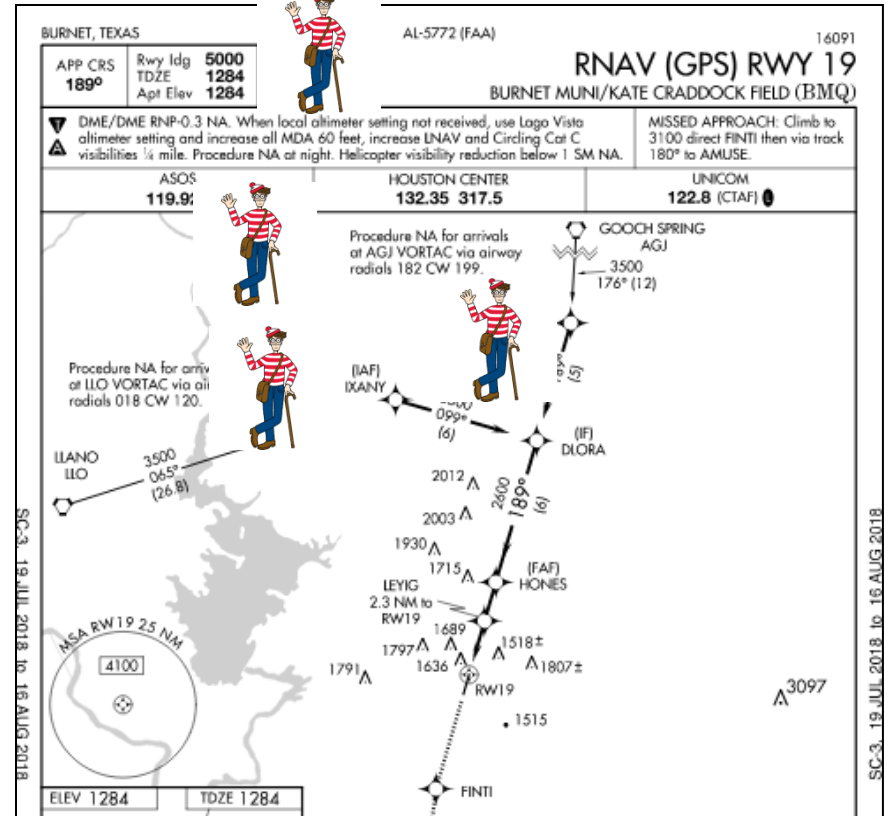
Fine Details on IAP

- NA, PTs, NoPTs, TAAs, and Other Stuff
- Or, Find and Understand The Waldos On Your IAPs



NA – Not Authorized




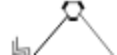
- Find the Waldos



NA (cont.)

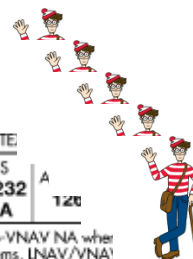
- Sometime You Wonder Why?
- E.g., Why Can't We Use This ILS as An Alternate?

AUSTIN, TEXAS AL-502 (FAA) 18144

| LOC | I-RUM | APP CRS | Rwy Idg TDZE | 5601 593 | ILS or LOC RWY 13 SAN MARCOS RGNL (HYI) | |
|--|--|--|--------------|---|---|--|
| | 108.7 | 126° | Apt Elev | 595 | | |
|  NA |  NA southwest of Rwy 13-31. SR, increase S-ILS 13 Cat E visibility ¼ mile, 1 Cat E ½ mile. ADF required. | | | MALSR | MISSED APPROACH: Climb to 2000 then climbing left turn to 3200 direct GARYS LOM and hold. | |
| A 120 | IN APP CON | SAN MARCOS TOWER * 126.825 (CTAF)  | GND CON | 120.125 | CINC DEL | CINC DEL 121.35 (When ATCT Closed) |
| ADF REQUIRED | | | |  | | |

NA (cont.)


- Sometimes the NA Waldos Go Bezerk
- There are Five In This Pilot Briefing Section



AUSTIN, TX

AL-502 (FAA)

181.44

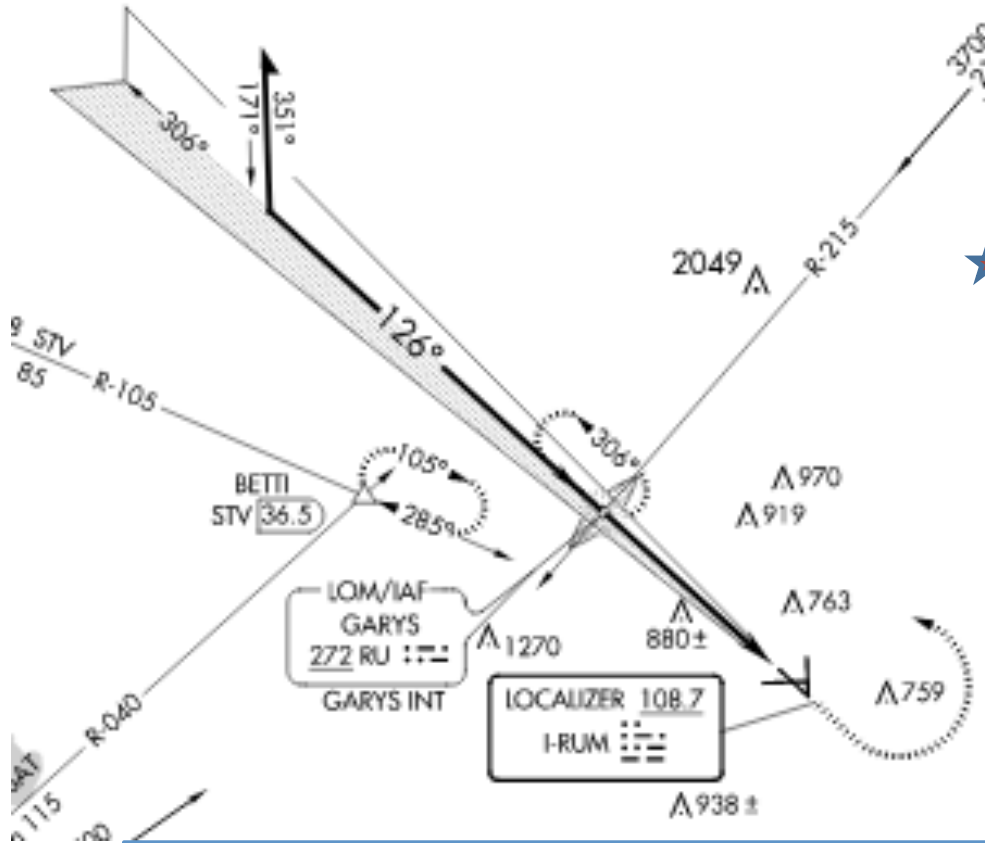
| | | | | | |
|--|--------------------------------|--|---|---------------------|--|
| WAAS CH 86232 W13A | A 120 | RNAV (GPS) RWY 13 SAN MARCOS RGNL (HYD) | | | |
| <p>▼ Baro-VNAV NA when systems, LNAV/VNA</p> <p>▲ For uncompensated Baro-VNAV (3°F) or above 54°C (130°F). When local altimeter setting not received, use New Braunfels altimeter setting and increase all DA 43 feet and all MDA 60 feet; increase LNAV/VNAV all Cats, LNAV Cat C/D/E and Circling Cat C/D visibility 1/4 mile. For inoperative MALSR, increase LPV Cat E visibility to 3/4, LNAV/VNAV Cat E visibility to 1 1/4 and LNAV Cat E visibility to 1 1/2. For inoperative MALSR when using New Braunfels altimeter setting, increase LPV Cat E visibility to 3/4, LNAV/VNAV Cat E visibility to 1 1/4 and LNAV Cat E visibility to 1 1/2. Circling NA to Cat E SW of Rwy 13-31. DME/DME RNP-0.3 NA. VDP NA with New Braunfels altimeter setting.</p> | | MALSR | MISSED APPROACH: Climb to 3000 direct HODAL and hold. | | |
| ATIS ★ 120.825 | AUSTIN APP CON 119.0 370.85 | SAN MARCOS TOWER ★ 126.825 (CTAF)  | GND CON 120.125 | CINC DEL 120.125 | CINC DEL 121.35 (When ATCT Closed) |

Procedure Turns (PTs)

- Purpose – Discussion
- How Many Types?
- ICAO Procedures (PAN Ops) Different
 - Must Fly As Depicted
 - Entry Typically Requires Alignment B4 Fix
 - Use of Holding Entry Generally OK Under TERPS
 - Especially When HPILOPT Depicted

Any Pan Ops Experience?

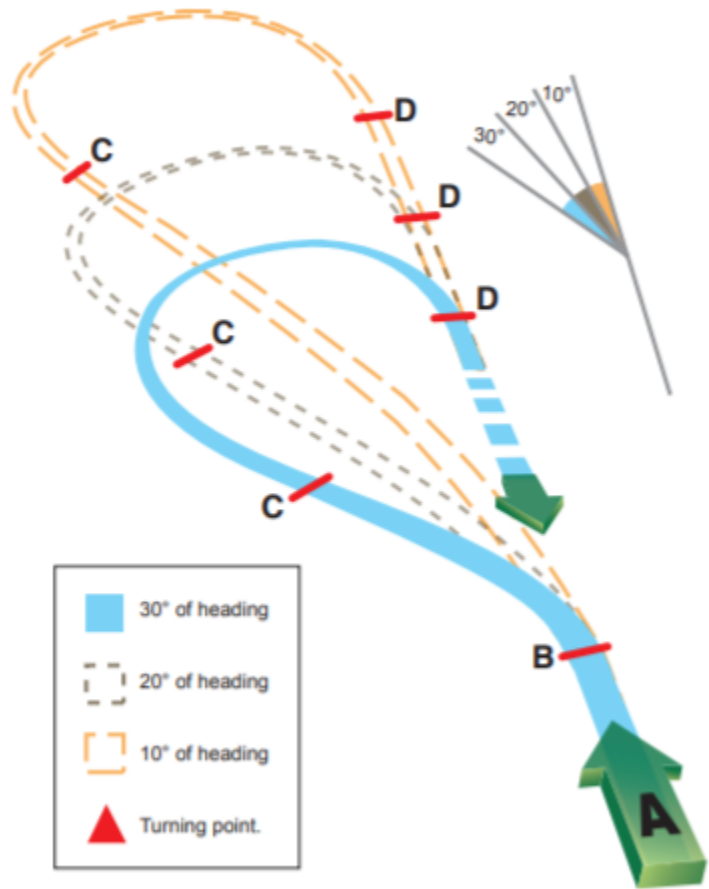
- Discussion?



‘Cleared Direct GARYS, ILS 13, Maintain 3,000’ Until Established Inbound, Report PT Inbound’

You are here – how many ways to do a course reversal at GARYS?

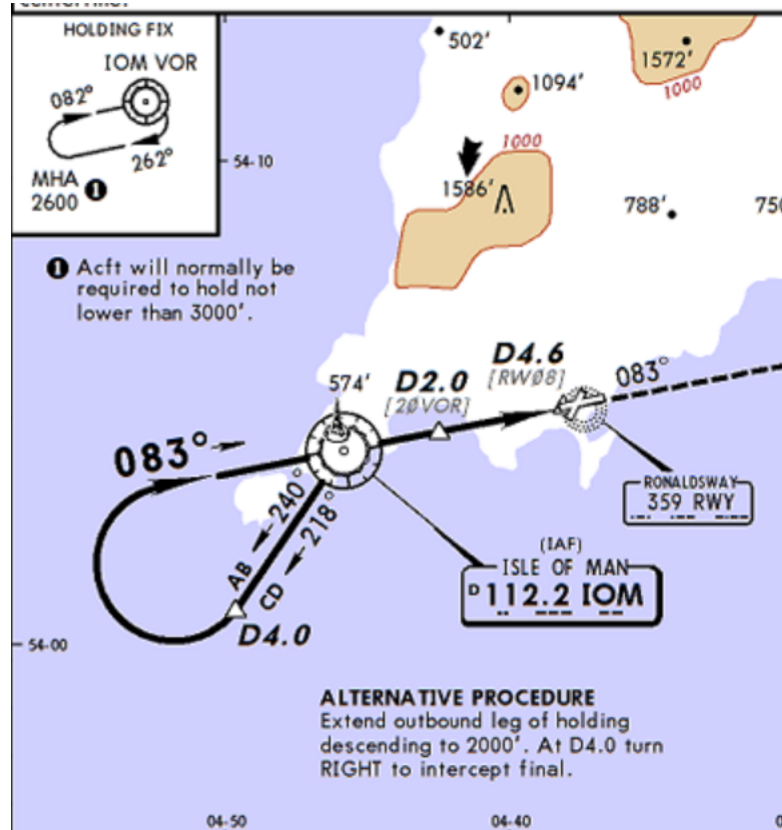
What is Risk or Challenge in Conducting Approach From a Hold at GARYS? Hint – Look at Profile View



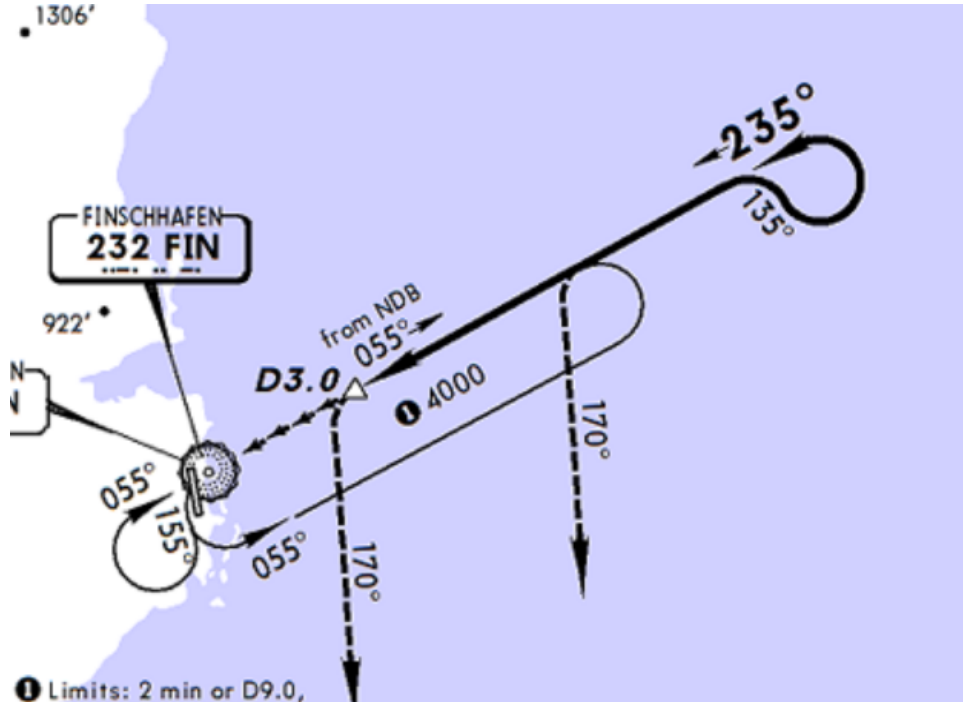
‘Teardrops –
Sometimes Called a
‘Base Turn’ by us Old
Timers – If Published
Must Be Flown as
Depicted’

‘Adjust Outbound
Leg Times
Dependent on
Offset Angle –
Typically 1, 2, or 3
minutes’

Teardrop Base Turn Example



80/260 PT



‘Falling Out of Favor in ICAO Countries – Still in Instrument Flying Handbook’

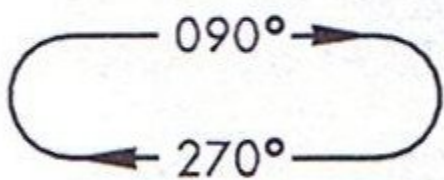
‘I Like it Only if There is No Crosswind Component’

Hold-In-Lieu-of-PT (HILOPT)

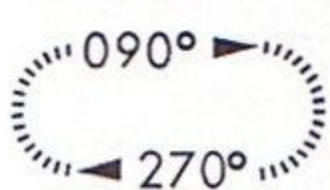
HOLDING PATTERNS



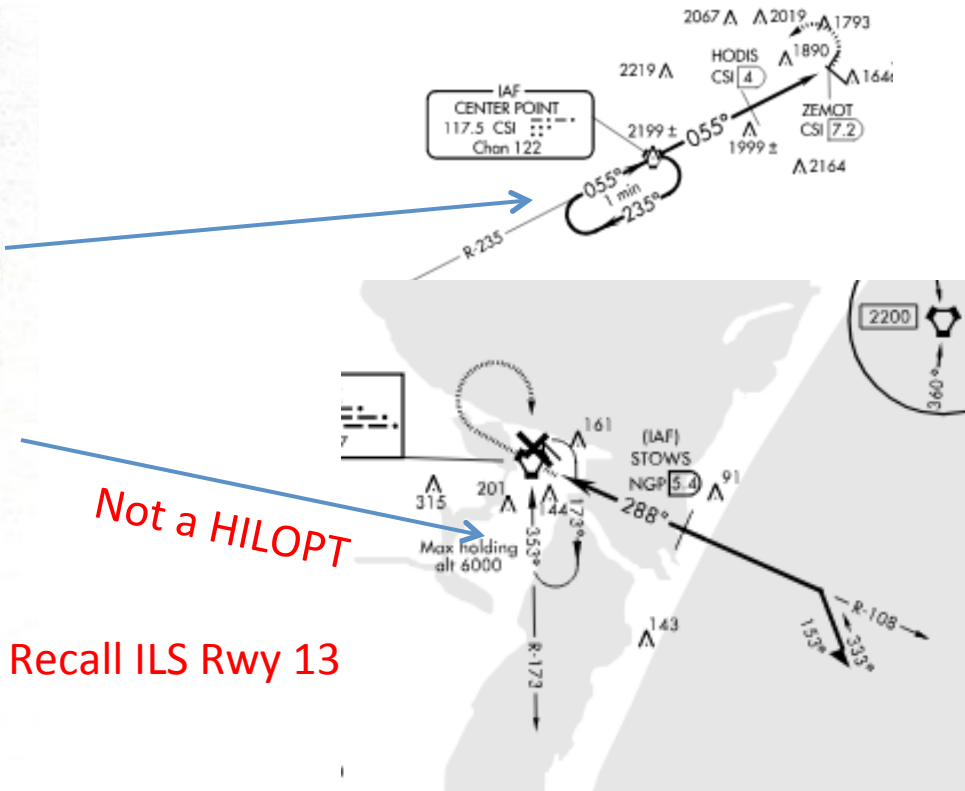
270°
090° Holding
in lieu of Procedure Turn



090°
270° Arrival
Holding
Pattern

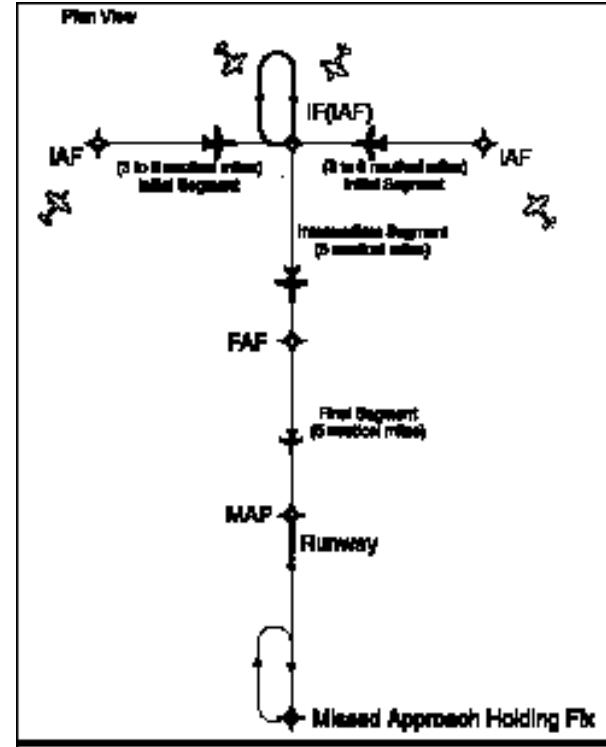


090°
270° Missed
Approach
Holding



Terminal Arrival Areas and Their Approaches

- Basic 'T'
- Falling Out of Favor
- Still Have PT and No-PT Sectors Identified
- Holding in Lieu of PT at IF/IAF



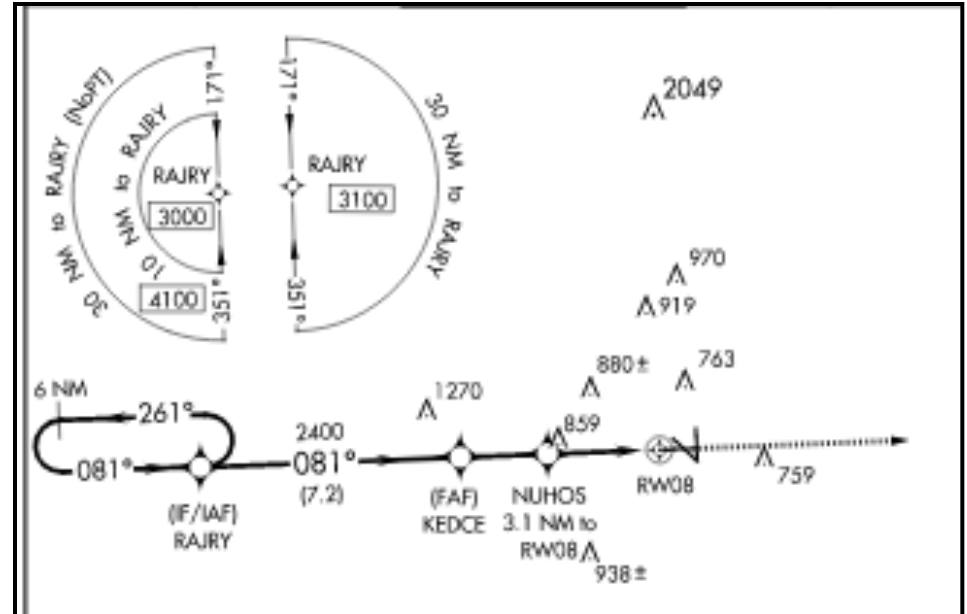
Why Do We Care?

GROUP DISCUSSION



Because

- TAA Sector Arrival Course Defines PT or No-PT
- Replaces MSA
- Discuss ‘Can This Still Be Used As a MSA?’



Because (cont.)

- ‘An ATC clearance direct to an IAF or IF/IAF *without* an approach clearance does not authorize a pilot to descend to a lower TAA altitude.’
- ‘Once cleared for the approach, and in the TAA sector, pilots may descend to the minimum altitude depicted in the TAA sector, unless otherwise instructed by ATC’

LOCKHART, TEXAS

AL-6919 (FAA)

17061

WAAAS
CH 53323
W36A

APP CRS
355°

Rwy Idg
TDZE
Apt Elev
4001
530
532

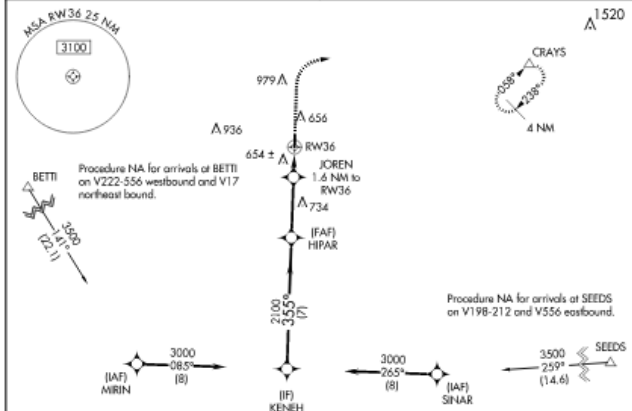
RNAV (GPS) RWY 36
LOCKHART MUNI (5R)

NA Baro-VNAV NA. When VGSi Inop, Straight-in/Circling Rwy 36 procedure NA at night. DME/DME RNP-0.3 NA. Visibility reduction by helicopters NA. Use San Marcos altimeter setting, when not received, use Austin Bergstrom Intl altimeter setting and increase all DA 16 feet, all MDA 20 feet and increase LNAV Cat C visibility 1/4 mile.

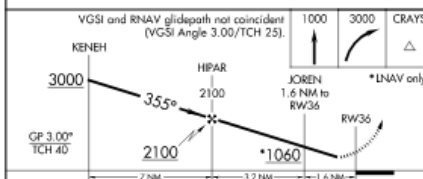
MISSED APPROACH: Climb to 1000, then climbing right turn to 3000 direct CRAYS and hold.

AUSTIN APP CON
120.875 270.25

UNICOM
122.8 (CTAF) 0



ELEV 532 TDZE 530



| CATEGORY | A | B | C | D |
|--------------|--------|--------------|-------------------------|----|
| LPV DA | 813-1 | 283 (300-1) | | NA |
| LNAV/VNAV DA | 863-1½ | 333 (400-1½) | | NA |
| LNAV MDA | 940-1 | 410 (500-1) | 940-1½ 410 (500-1½) | NA |
| CIRCLING | 1020-1 | 488 (500-1) | 1020-1½ 488 (500-1½) | NA |



LOCKHART, TEXAS
Orig-A 02APR15

29°51'N-97°40'W

LOCKHART MUNI (5R)
RNAV (GPS) RWY 36

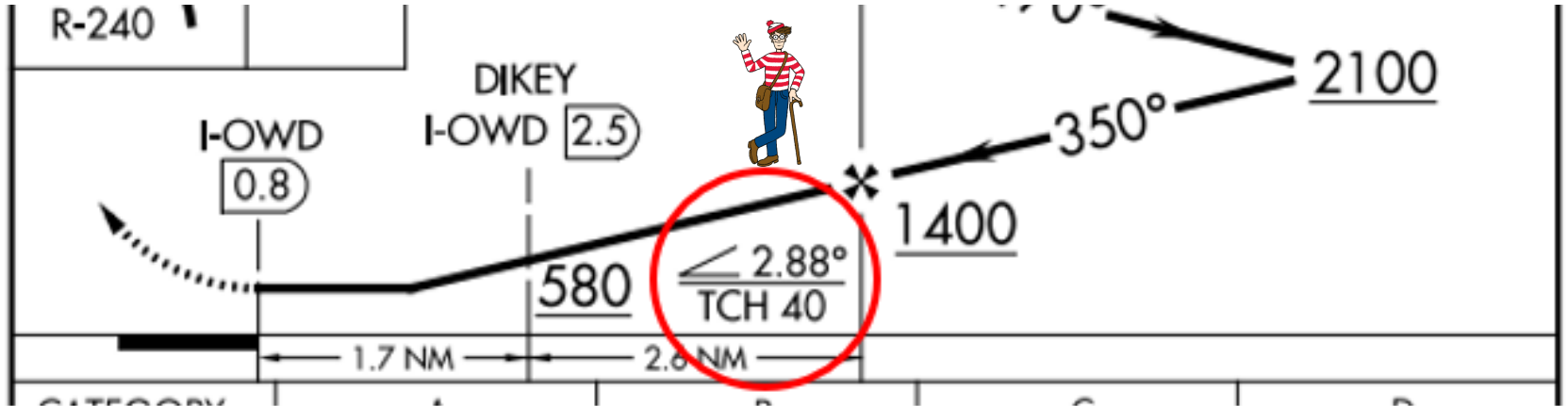
Is This a TAA Approach?

If Not, Give All of the Reasons Why Not.

Question of the Month From Radek

You May See This (Another Waldo) on Some Non-Precision Approaches

What is it?



Answer

It is the Vertical Descent Angle. FAA policy is to publish VDAs on all non-precision approaches. Published along with VDA is the Threshold Crossing Height (TCH) that was used to compute the angle. The VDA will end at the runways touchdown zone. The descent angle may be computed from either the final approach fix (FAF), or a stepdown fix, to the runway threshold at the published TCH. A stepdown fix is only used as the start point when an angle computed from the FAF would place the aircraft below the stepdown fix altitude.

The descent angle and TCH information are charted on the profile view of the instrument approach chart following the fix the angle was based on. The optimum descent angle is 3.00 degrees; and whenever possible the approach will be designed using this angle.

Answer (cont.)

The VDA provides the pilot with information not previously available on non-precision approaches. It provides a means for the pilot to establish a stabilized descent from the FAF or stepdown fix to the MDA.

Stabilized descent is a key factor in the reduction of controlled flight into terrain (CFIT) incidents. However, pilots should be aware that the published angle is for information only – it is strictly advisory in nature. There is no implicit additional obstacle protection below the MDA. Pilots must still respect the published minimum descent altitude (MDA) unless the visual cues stated 14 CFR Section 91.175 are present

Legacy Non-Precision IAPs Do Not Have This VDA

No EAA/IMC Scenario Posted for August

- So This is What Happened to Me
- On ILS 35L to KHYI, Cleared for Approach, Cleared to Land by Tower
- Well Before DA, Tower Says; 'N24547, Cancel Clearance to Land, Continue'
- You Would? Discussion



*A Bit of Waldo Confusion
Then Ensued
In the Cockpit*

Suggested Answer

CONTINUE– When used as a control instruction should be followed by another word or words clarifying what is expected of the pilot. Example: “continue taxi,” “continue descent,” “continue inbound,” etc.

- I Queried Tower If He Wanted Me to Continue My Approach
- He Acknowledged Yes, and, After a United 737 Took Off, He Reinstated My Clearance to Land

TAF Quiz

FM130800 16005KT P6SM OVC015 =

What Does
the = Mean?



- A. Overcast with Lower Fog
- B. End of TAF Group
- C. Layered at 015 AGL and Up

Remember – Find All The Waldos

Sorry – Sick Cartoon



Any Recent Successes, Upgrades, Etc.



**“I spent years on the Road To Success,
but I was driving in the wrong direction.”**