

Instrument Proficiency



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Master CFI
Gold Seal CFI



Objectives

- Review IFR procedures
- GPS & WAAS implications for preflight, approaches and alternates
- Chart quiz
- Common check ride issues

Preflight IFR Requirements

91.103 Preflight Action for Flight Under IFR

What you Need to Know Before You Go

- Runway Lengths (VFR Too)
- ATC Delays – required part of standard briefing
- Weather (Icing?)
- Fuel Requirements (What Are They?) 91.167

Fuel requirements for flight in IFR conditions.

(a) No person may operate a civil aircraft in IFR conditions unless it carries enough fuel (considering weather reports and forecasts and weather conditions) to--

- (1) Complete the flight to the first airport of intended landing;
- (2) Except as provided in paragraph (b) of this section, fly from that airport to the alternate airport; and
- (3) Fly after that for 45 minutes at normal cruising speed

- Alternates
- Takeoff & Landing Distances (VFR Too)

Are we done yet?

Preflight IFR Requirements



You are about to depart under IFR and find that your VSI is inoperative

1. Can you legally depart IFR? 91.205
2. Does anything still need be done? 91.213

Are we done yet?



Preflight GPS Operations

For GPS Operations – TSO 129 Equipment

- Must do a RAIM Prediction Check

“If **TSO-C129 equipment** is used to solely satisfy the RNAV requirement, GPS RAIM availability must be confirmed for the intended route of flight (route and time) using current GPS satellite information.” **AC 90-100**

- Both departure (if flying an RNAV DP) and destination airports must be checked.
- RAIM must be predicted to exist continuously during the planned flight

“In the event of a predicted, continuous loss of RAIM of more than five (5) minutes for any part of the intended flight, the flight should be delayed, canceled, or re-routed where RAIM requirements can be met.” **AC 90-100**



GPS Operations

How Can A RAIM Check Be Done?

- Call Flight Service (within 24 hours of ETA)
- Go to www.raimprediction.net (FAA Site)
- Complete a RAIM check on your GPS receiver
- GPS provides 10 meter accuracy

OK ... But What About WAAS?

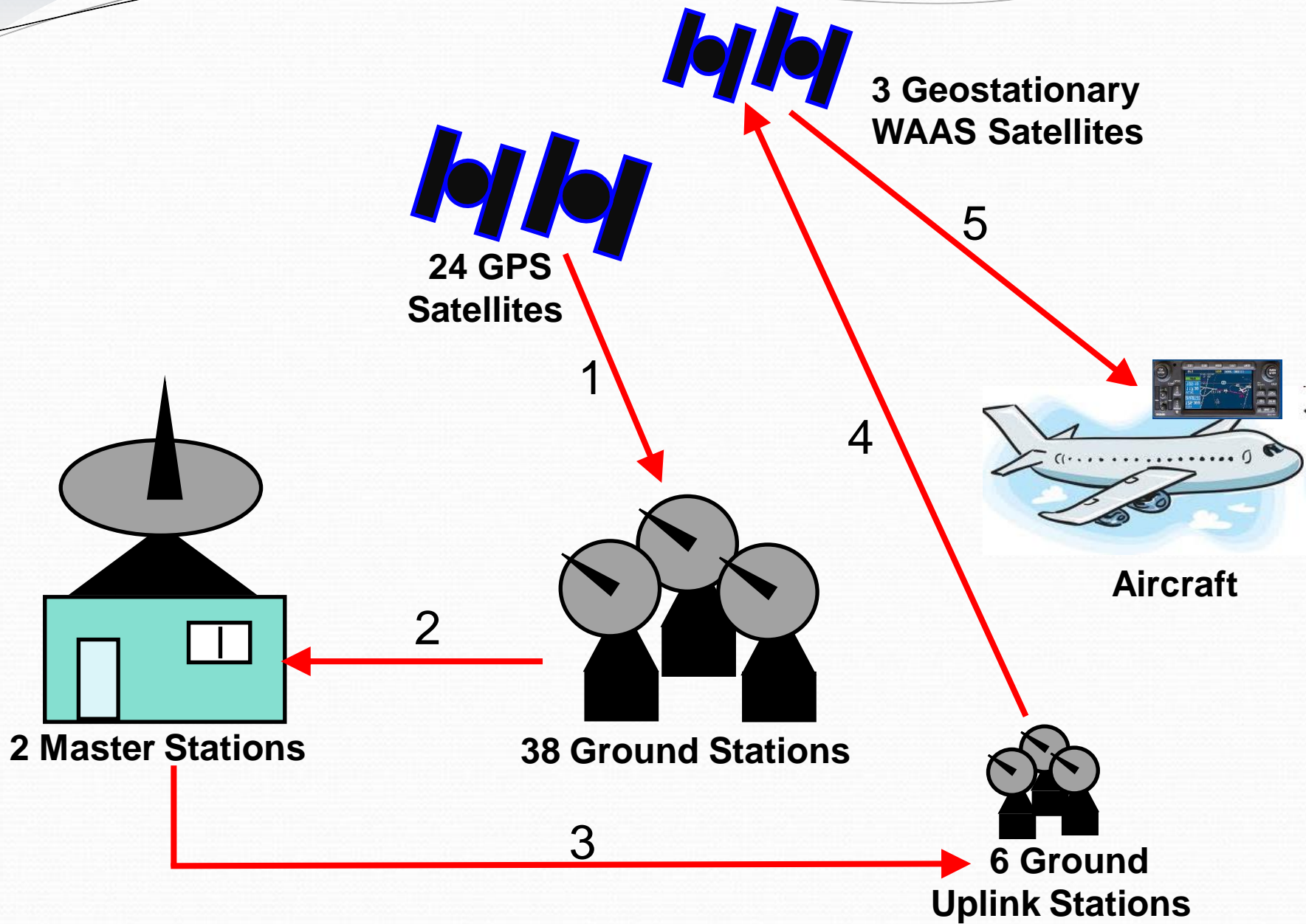


WAAS Operations



- Certified Under TSO C145 & C146
- Uses the 24 GPS satellites
- 3 Geostationary WAAS Satellites
- 38 Ground Reference Stations
- 2 Master Correction Stations
- 6 Ground Uplink Stations

How Does WAAS Work?





WAAS Operations

- Faster refresh rates 5x/sec vs 1x/sec for GPS
- Required accuracy 25 feet (vertical and lateral)
- Measured accuracy 3 feet
- Vertical Guidance (3,100 LPV approaches) more than ILS Approaches
- By 2020 only half of the 967 VOR's will be in service
- WAAS will fly procedure turns with a roll steering AP
- Can use WAAS as single source navigation (FDE)
- Not required to check for RAIM before flight, unless flying outside US airspace, or where WAAS coverage doesn't exist
- Are required to check NOTAMS for WASS outages with Flight Service



GPS and WAAS Operations

What Happens If RAIM is Lost During Flight?

- Must notify ATC immediately AIM 5-3-3
- Must revert to alternate means of navigation AC 90-100





GPS and WAAS Operations

What Happens if RAIM is Lost on Approach?
e.g. RAIM Warning Appears on GPS

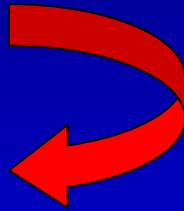


- If RAIM is lost inside the FAF - no RAIM warnings for 5 min
- If RAIM is lost outside the FAF – there will be a RAIM warning and you must discontinue the approach AIM 1-1-19

Alternates

You always file an alternate unless you can meet

91.169
123 Rule



1 hr before to 1 hr after ETA
2,000' ceiling AND
3 miles visibility

- What if destination has no approach?
- What if alternate has no approach?
- Does my equipment affect alternate filing?

Alternates



- If destination has no approach, you must file an alternate regardless of weather **FAR 91.169**



- If alternate has no approach, you must be able to descend from the MEA, approach, and land under VFR **FAR 91.169**



- As of April 4, 2013 if only GPS equipped, you may plan a GPS approach at your destination or alternate but not both. **NOTAM** → **AIM update**



- If WAAS equipped, there are no navigation equipment limitations so a single WAAS receiver is legal **AIM 1-1-19**

Alternates



- If using a WAAS receiver, you may not plan to use WAAS vertical guidance (LPV) at the alternate.

Current alternate airport planning policy explicitly prohibits TSO-C145 and TSO-C146 equipped users (WAAS users) from planning to use WAAS vertical guidance at their alternate airport. Must plan an LNAV approach using non precision alternate weather minimums - AIM 1-1-20

Alternates



Scenario: Tower Enroute Practice Approach from MYF to CRQ. Aircraft WASS equipped. Weather at CRQ is 1,500 scattered and 2 miles visibility. Can this flight be conducted legally?

☐ Yes

☐ No

Alternates

Scenario Continues: You determine that under the 123 rule, you need an alternate and have decided that you will file an IFR flight plan and use the LOC D approach at SEE as your alternate. The weather at SEE for your ETA is 1,500 SCT 1,200 OVC 2 SM VIS.

Can you legally file SEE as your alternate?

- ☐ Yes
- ☐ No
- ☐ Depends on the approach

SAN DIEGO (EL CAJON), CALIFORNIA

AL-5402 (FAA)

LOC I-SEE	APP CRS	Rwy Idg	N/A
110.5	269°	TDZE	N/A
		Apt Elev	387

LOC-D

SAN DIEGO/ GILLESPIE FIELD (SEE)

T	Circling not authorized NE of Rwy 17 and 27R.	MISSED APPROACH: Climbing left turn to 3000 direct to MZB VORTAC.
A	When control tower closed use Miramar MCAS, CA altimeter setting and increase all MDAs 40 feet.	

ATIS	SOCAL APP CON	GILLESPIE TOWER★	GND CON	CLNC DEL	UNICOM
125.45	124.35 279.625	120.7(CTAF) 257.8	121.7	125.1	123.05



Alternate Minimums Section



ALTERNATE MINS

M1



INSTRUMENT APPROACH PROCEDURE CHARTS



IFR ALTERNATE AIRPORT MINIMUMS

Standard alternate minimums for non precision approaches are 800-2 (NDB, VOR, LOC, TACAN, LDA, VORTAC, VOR/DME, ASR or WAAS LNAV); for precision approaches 600-2 (ILS or PAR). Airports within this geographical area that require alternate minimums other than standard or alternate minimums with restrictions are listed below. NA - means alternate minimums are not authorized due to unmonitored facility or absence of weather reporting service. Civil pilots see FAR 91. IFR Alternate Airport Minimums: Ceiling and Visibility Minimums not applicable to USA/USN/USAF. Pilots must review the IFR Alternate Airport Minimums Notes for alternate airfield suitability.

NAME

ALTERNATE MINIMUMS

NAME

ALTERNATE MINIMUMS

BAKERFIELD, CA

CHINO, CA

Non Standard Alternate Minimums

SAN DIEGO(EL CAJON), CA

GILLESPIE FIELD LOC-D¹²

RNAV (GPS) Rwy 17³⁴

¹ NA when control tower closed

² Categories A, B, 2400-2; Categories C, D, 2400-3.

³ Categories A, B, 1100-2; Category C, 1100-3; Category D, 1200-3

⁴ NA when local weather not available

GPS In Lieu of DME

Can GPS be used as a substitute for DME?

- ☐ Yes, as long as it is WAAS
- ☐ No, if it says DME it must be DME
- ☐ Yes, as long as it is a panel mount, IFR certified receiver (either GPS or WAAS)

TBL 1-1-6
GPS Approval Required/Authorized Use

Equipment Type ¹	Installation Approval Required	Operational Approval Required	IFR En Route ²	IFR Terminal ²	IFR Approach ³	Oceanic Remote	In Lieu of ADF and/or DME ³
Hand held ⁴	X ⁵						
VFR Panel Mount ⁴	X						
IFR En Route and Terminal	X	X	X	X			X
IFR Oceanic/Remote	X	X	X	X		X	X
IFR En Route, Terminal, and Approach	X	X	X	X	X		X

NOTE-

¹To determine equipment approvals and limitations, refer to the AFM, AFM supplements, or pilot guides.

²Requires verification of data for correctness if database is expired

³Requires current database or verification that the procedure has not been amended since the expiration of the database.

⁴VFR and hand-held GPS systems are not authorized for IFR navigation, instrument approaches, or as a primary instrument flight reference. During IFR operations they may be considered only an aid to situational awareness.

⁵Hand-held receivers require no approval. However, any aircraft modification to support the hand-held receiver; i.e., installation of an external antenna or a permanent mounting bracket, does require approval.

Using GPS to Assist Approaches

Can GPS be used exclusively to fly a non GPS approach where RNAV(GPS) e.g. VOR A OKB, LOC D SEE, ILS 28 MYF?

- ☐ Yes, if the approach is in the database
- ☐ No, under any conditions
- ☐ Yes but only some parts

AIM 1-2-3

Pilots may not substitute for the NAVAID (for example, a VOR or NDB) providing lateral guidance for the final approach segment.

Solving Chart Mysteries



Chart Mysteries

What does the name on the chart mean
vs. the notes on the chart?


LOC/DME I-MYF 111.7 Chan 54	APP CRS 281°	Rwy Idg 3401 TDZE 423 Apt Elev 427	ILS or LOC RWY 28R SAN DIEGO/ MONTGOMERY FIELD (MYF)		
▼ DME or RADAR required. VDP NA with San Diego Intl altimeter setting. ▲ When local altimeter setting not received, use San Diego Intl altimeter setting and increase all DA 71 feet and all MDA 80 feet. For inoperative MALSR when using San Diego Intl altimeter setting, increase SALS 28R all Cats visibility to 1 mile.			MALSR 	MISSED APPROACH: Climb to 1100 then climbing left turn to 3000 via heading 270° and MZB VORTAC R-326 to CARIF INT/MZB 16.3 DME and hold.	
ATIS 126.9	SOCAL APP CON 124.35 279.625	MONTGOMERY TOWER★ 119.2 (CTAF) 0 269.4	GND CON 118.22	CINC DEL 123.725	SAN DIEGO RADIO 122.4



Chart Mysteries

What do the numbers on the following chart mean?

“AL” -Approach & Landing
“5310” – Airport ID

Any Change

Chart Cycle
Paper: 56 Days
iPad: 28 days

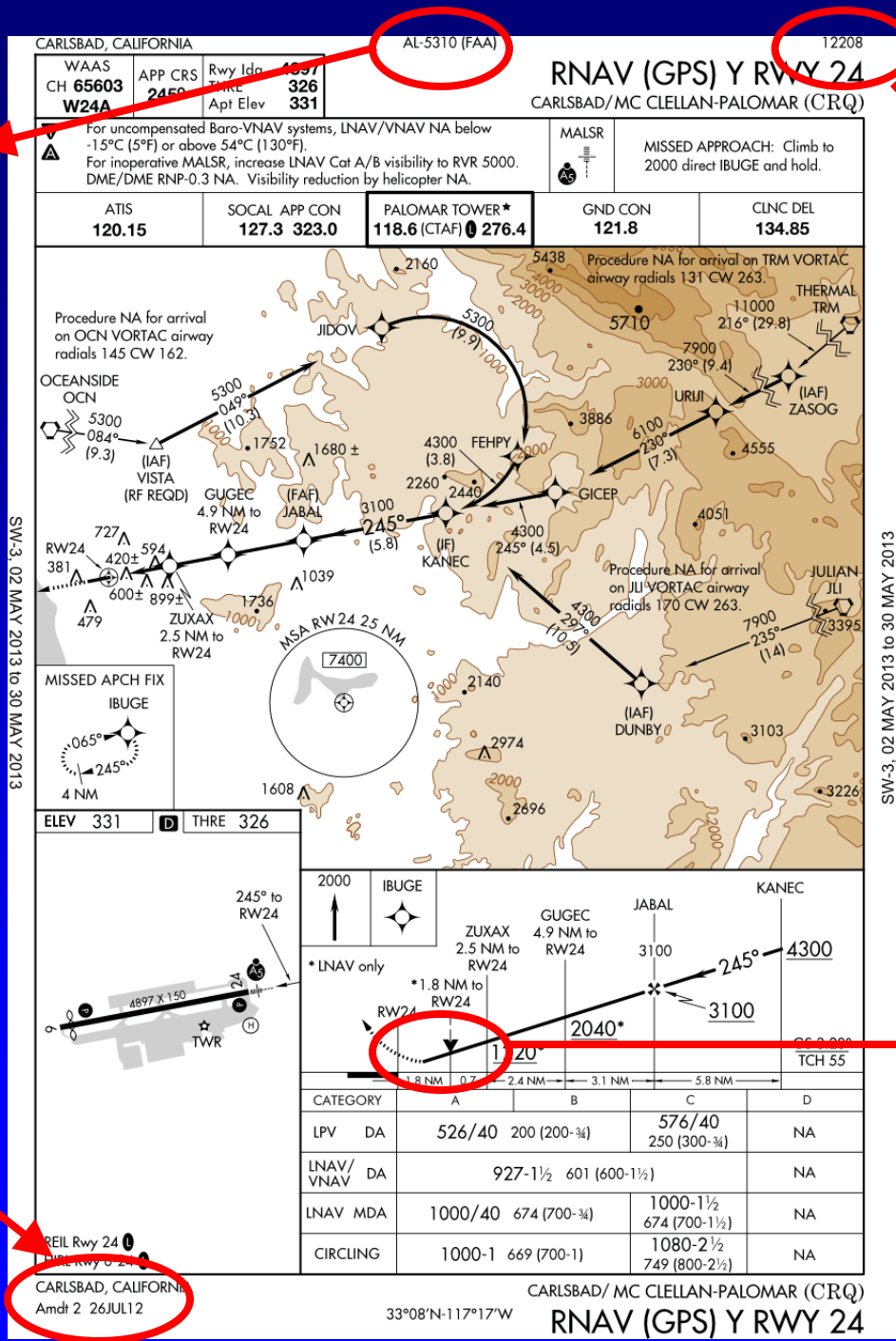


Chart Mysteries

Scenario: You're 5 miles from OCN
(See Following Chart) at 4,000' on the VOR A
and ATC says, cleared VOR A approach.

- ☐ You are cleared to descend to 2,500
- ☐ You must fly to OCN at 4,000 then descend to 2,500
- ☐ You can do either if you're WAAS equipped

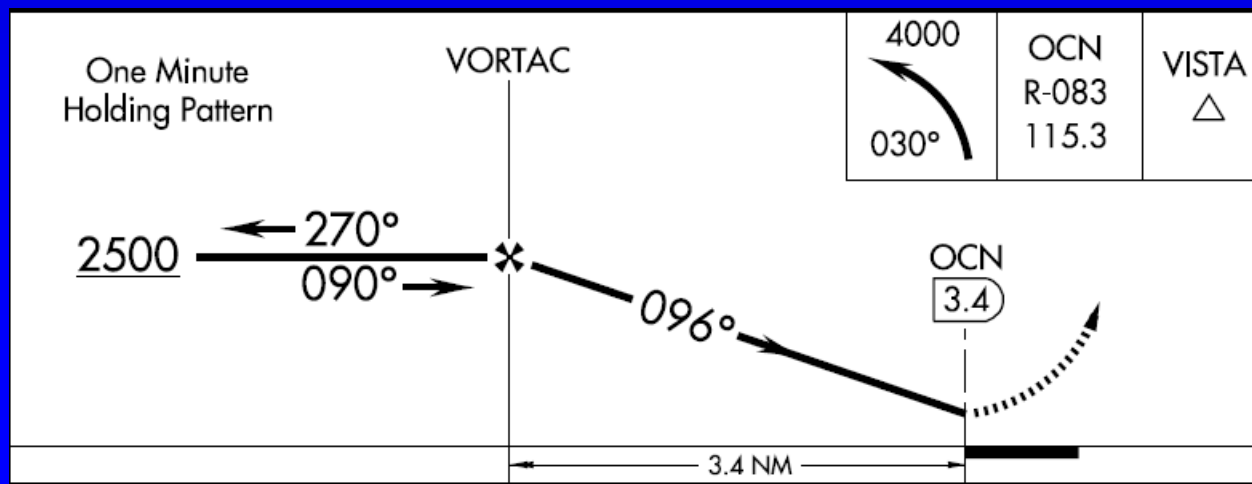
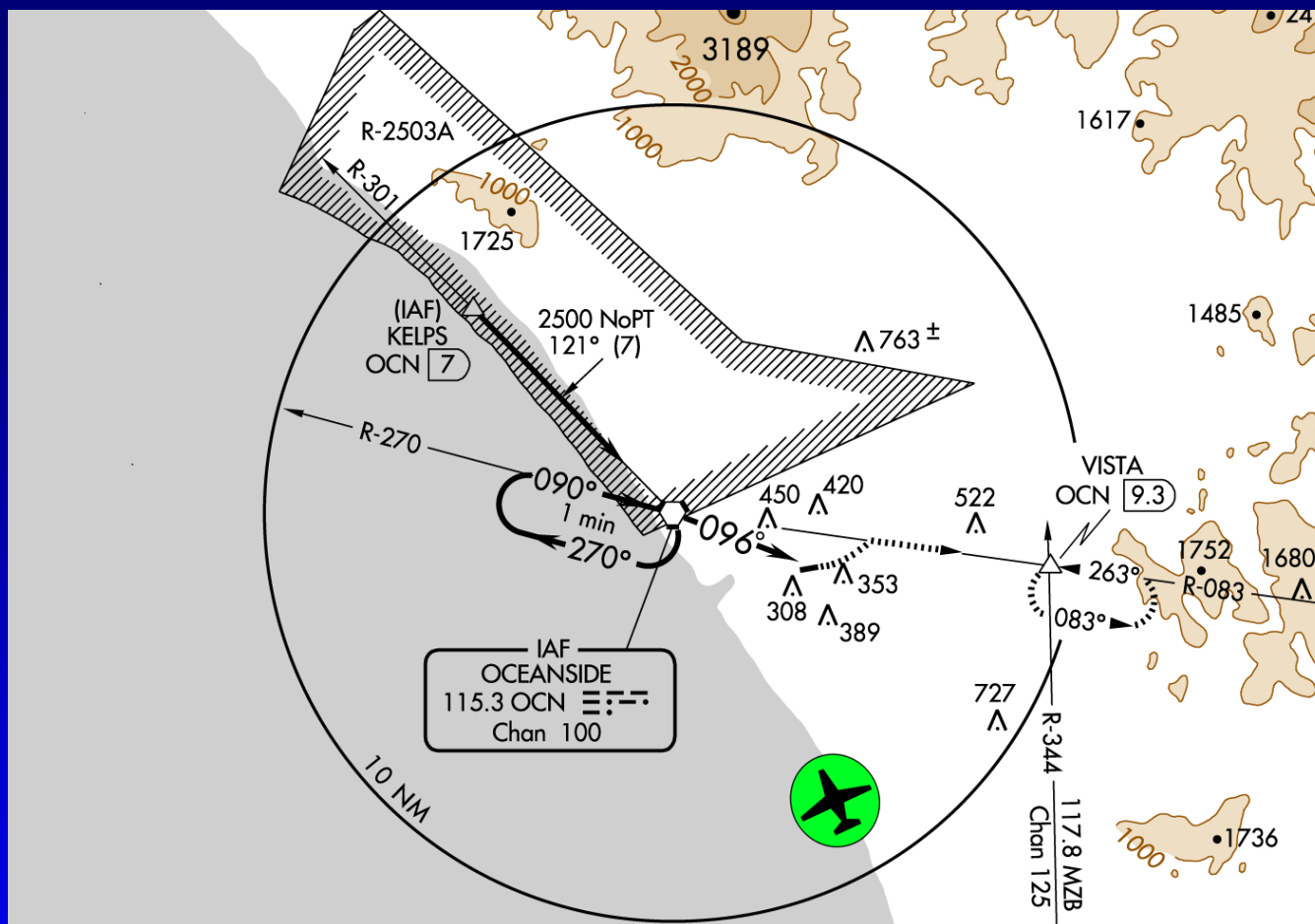


Chart Mysteries

Scenario: You want to practice approaches and get a TEC clearance to OKB from SEE. Weather at SEE is 900 OVC and 2 mi VIS. You accept the clearance which includes the published departure procedure and are ready for takeoff. Is there anything else you need to check?

- ☐ No, I am cleared to go by ATC
- ☐ No, I am flying Part 91 and can go zero-zero
- ☐ Yes, I must be able to meet the climb gradient

LOC-D

SAN DIEGO/GILLESPIE FIELD (SEE)

- MISSED APPROACH:** Climbing left turn to 3000 direct to MZB VORTAC.

LOCALIZER 110.5
-SEE ...

MISSION BAY
117.8 MZB
Chan 125

GR|GG

SAMOS

114.0 JL
Chan 87

2010

SAN DIEGO (EL CAJON), CA

GILLESPIE FIELD

TAKE-OFF MINIMUMS: **Rwys 9L, 9R**, 900-2 or std. with a min. climb of 1000' per NM to 1600. **Rwy 17**, 500-1 or std. with a min. climb of 260' per NM to 800. **Rwys**

27L, 27R, CAT A,B 500-1 or std. with a min. climb of 370' per NM to 900. CAT C,D 2500-2 or std. with a min. climb of 370' per NM to 2500. **Rwy 35**, 1300-2 or std. with a min. climb of 460' per NM to 1800.

DEPARTURE PROCEDURE: **Rwy 9L, 9R, 27L, 27R**, climbing right turn. **Rwys 17, 35**, climbing left turn. All aircraft climb via heading 165° and MZB R-076 to MZB VORTAC.

beginning 269' from DER, 500' right of centerline, up to 52' AGL/108' MSL. Light poles beginning 204' from DER, 490' right of centerline, up to 35' AGL/85' MSL. Tree 1574' from DER, 765' left of centerline, 59' AGL/113' MSL.

What are standard takeoff minimums?

What criteria requires an ODP to be published?

10042

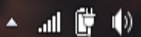


TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES



611

SW-3



10:47 AM
5/5/20

Rate-of-Climb Table

Climb Gradient Feet Per NM	Ground Speed (Knots)											
	60	80	90	100	120	140	150	180	210	240	270	300
	Vertical Speed — Feet Per Minute (fpm)											
200	200	267	300	333	400	467	500	600	700	800	900	1000
250	250	333	375	417	500	583	625	750	875	1000	1125	1250
300	300	400	450	500	600	700	750	900	1050	1200	1350	1500
350	350	467	525	583	700	816	875	1050	1225	1400	1575	1750
400	400	533	600	667	800	933	1000	1200	1400	1600	1700	2000
450	450	600	675	750	900	1050	1125	1350	1575	1800	2025	2250
500	500	667	750	833	1000	1167	1250	1500	1750	2000	2250	2500
550	550	733	825	917	1100	1283	1375	1650	1925	2200	2475	2750
600	600	800	900	1000	1200	1400	1500	1800	2100	2400	2700	3000
650	650	867	975	1083	1300	1516	1625	1950	2275	2600	2925	3250
700	700	933	1050	1167	1400	1633	1750	2100	2450	2800	3150	3500

WEIGHT LBS	PRESS ALT FT	CLIMB SPEED KIAS	RATE OF CLIMB - FPM			
			-20°C	0°C	20°C	40°C
2300	S.L.	73	875	815	755	695
	2000	72	765	705	650	590
	4000	71	655	600	545	485
	6000	70	545	495	440	385
	8000	69	440	390	335	280
	10,000	68	335	285	230	---
	12,000	67	230	180	---	---

Figure 5-5. Rate of Climb

91.175 (f)

Civil airport takeoff minimums. This paragraph applies to persons operating an aircraft under part 121, 125, 129, or 135 of this chapter.(1) Unless otherwise authorized by the FAA, no pilot may takeoff from a civil airport under IFR unless the weather conditions at the time of takeoff are at or above the weather minimums for IFR takeoff prescribed for the airport under part 97 of this chapter

AIM 5-2-8

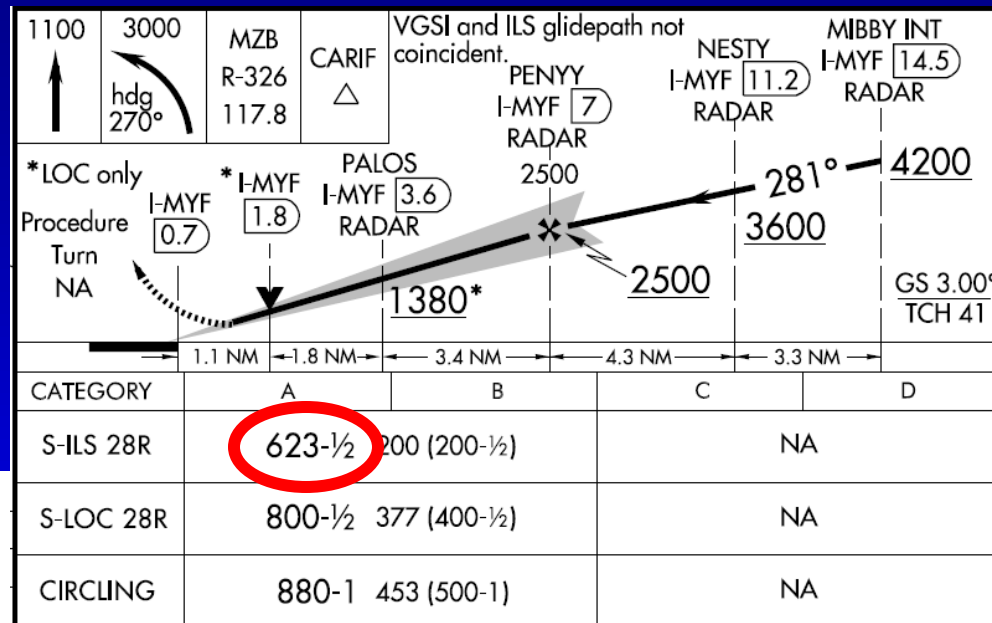
Climb gradients greater than 200 FPNM are specified when required to support procedure design constraints, obstacle clearance, and/or airspace restrictions. Compliance with a climb gradient for these purposes is mandatory when the procedure is part of the ATC clearance, unless increased takeoff minimums are provided and weather conditions allow compliance with these minimums.

Chart Mysteries

Scenario: You're on the ILS at MYF and reach the DA of 623'. You look up and see one approach light. What are your options? TDZE is 423' **FAR 91.175**

- ☐ Immediately conduct a missed approach
- ☐ Descend to 523' and look again
- ☐ Ask ATC what to do

Chart Mysteries



SAN DIEGO, CALIFORNIA

LOC/DME I-MYF
111.7
Chan **54**

APP CRS
281°

Rwy Idg **3401**
TDZE **423**
Apt Elev **427**

10098
ILS or LOC RWY 28R

SAN DIEGO/ MONTGOMERY FIELD (MYF)

T DME or RADAR required. VDP NA with San Diego Intl altimeter setting.
A When local altimeter setting not received, use San Diego Intl altimeter setting and increase all DA 71 feet and all MDA 80 feet.
For inoperative MALSR when using San Diego Intl altimeter setting, increase S-ILS 28R all Cats visibility to 1 mile.

MALSR
A5

MISSED APPROACH: Climb to 1100 then climbing left turn to 3000 via heading 270° and MZY VORTAC R-326 to CARIF INT/MZY 16.3 DME and hold.

ATIS
126.9

SOCAL APP CON
124.35 279.625

MONTGOMERY TOWER★
119.2 (CTAF) 269.4

GND CON
118.22

CLNC DEL
123.725

SAN DIEGO RADIO
122.4

Chart Mysteries

Scenario Continued: You have descended to the TDZE of 523' and now see the runway numbers, threshold lights, and about 1/3 of the runway length of 4,577'. Now what?

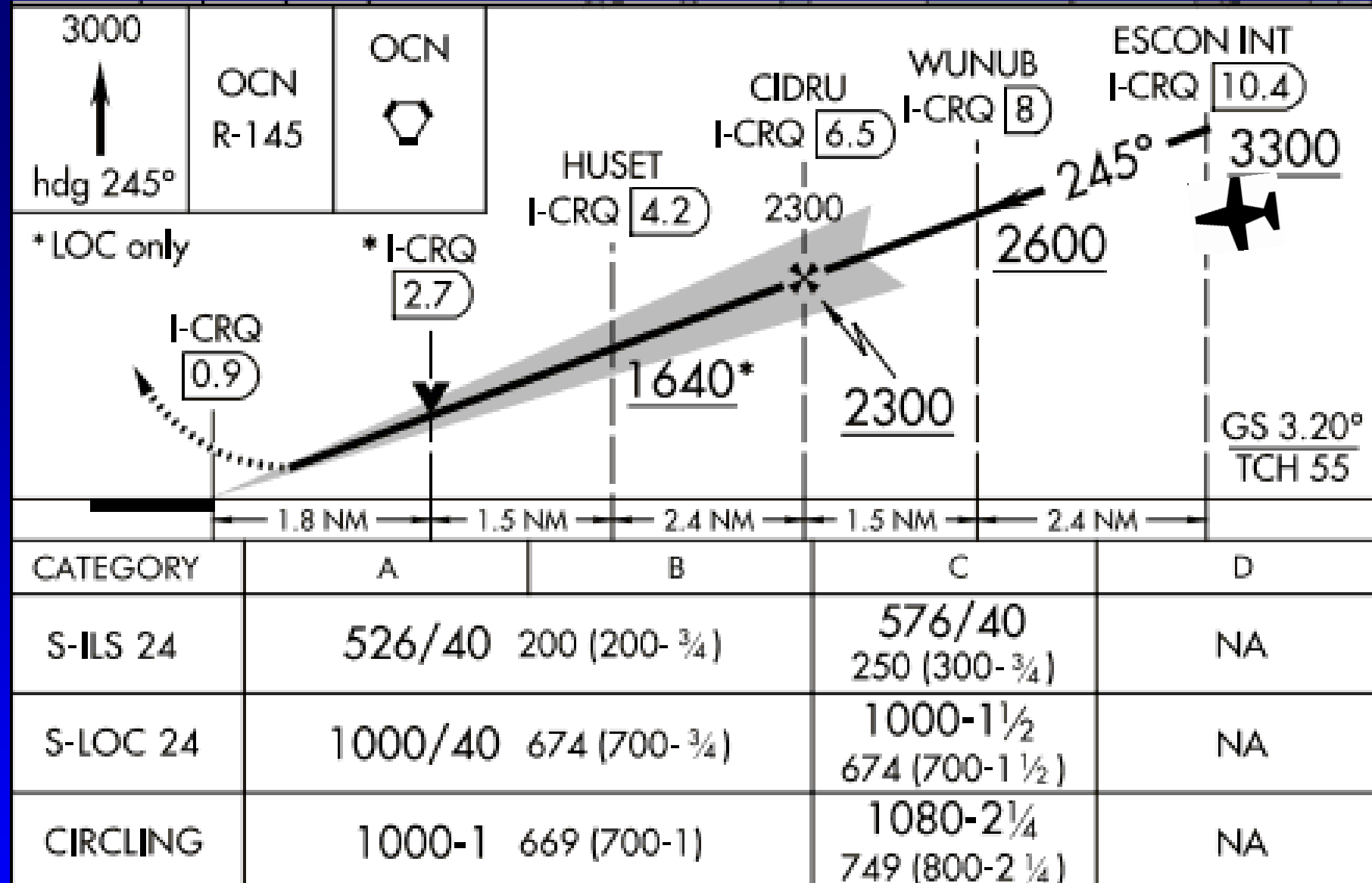
- ☐ Immediately conduct a missed approach
- ☐ Land. I see one of the required things
- ☐ Open the FAR/AIM and start reading

FAR 91.175 (C) 2 The flight visibility is not less than the visibility prescribed in the standard instrument approach being used.

Chart Mysteries

You're being vectored onto the localizer at CRQ outside ESCON. ATC says "fly heading 250 intercept the localizer, cleared ILS". The localizer and glideslope both come alive. Can you follow the glideslope without restrictions?

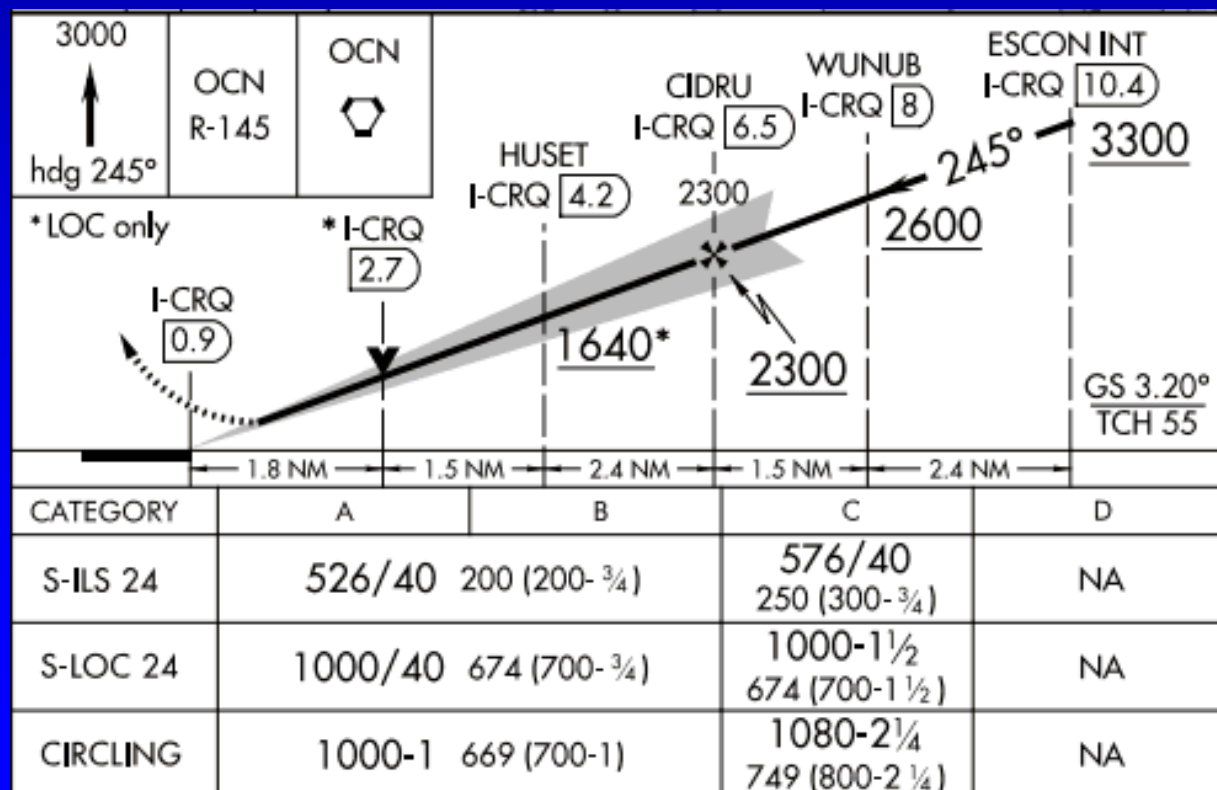
- ☐ Yes, I am established
- ☐ No, I still need to remain above all step down altitudes until glideslope intercept.



"If the pilot chooses to track the glide slope prior to the glide slope interception altitude, they remain responsible for complying with published altitudes for any preceding step down fixes encountered during the subsequent descent". AIM 5-4-5

Chart Mysteries

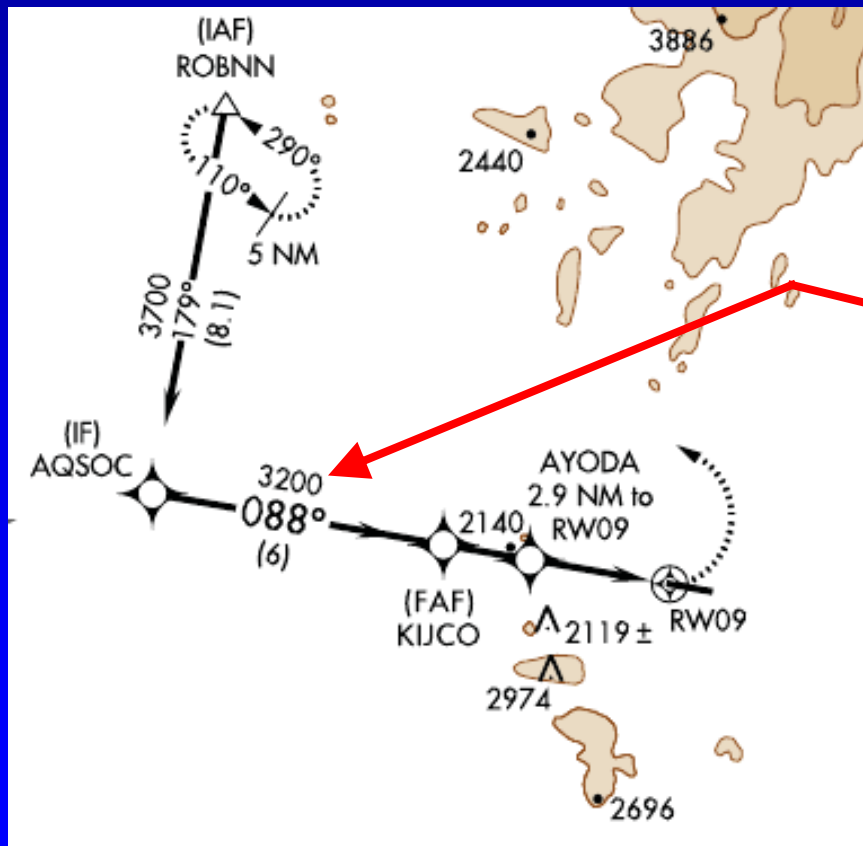
You're on the ILS at CRQ outside the FAF (CIDRU) and the glideslope flags (or the examiner simulates one) You're flying with a Garmin 430W and no DME. Can you continue?



- *LOC Waypoints are NOT included in the Garmin database!*
- *In lieu of DME, enter Direct ICRQ in the GNS 430*
- *This will provide DME to the step down fixes but erase the course*
- *The course must be flown exclusively on the LOC*
- *The 530/750 has enough screen size to provide DME information*

Chart Mysteries

Why is the approach chart course different from that displayed on the GPS receiver?



Check Ride Quiz

You expect to do the following approaches during your instrument check ride: Your airplane is equipped with a WAAS receiver. VOR A OKB, ILS 24 CRQ, GPS 28 MYF. Do these meet PTS standards for an instrument checkride?

- ☐ *Yes. You must do 1 precision and 2 non precision approaches*
- ☐ *Yes, you must do a circling approach and a GPS approach*
- ☐ *Even though the above two answers are correct there is something else wrong*

Safety Pilot

What qualification does your safety pilot need?

- ☒ Current medical?
- ☒ Pilot certificate with category & class ratings?
- ☐ Current flight review?
- ☐ Current for day or night landings?
- ☐ Qualified to act as PIC in the aircraft?

FAR 61.3 (c) Required crew member (safety pilot) needs a medical

FAR 91.109 (c) 1 Safety pilot needs at least a private pilot certificate with appropriate category & class ratings

Who Can Log Flights?

Scenario:

Dave is a private pilot, instrument rated and current. He decides to go flying approaches in IMC with his friend Billy Bob who is a private pilot with no instrument rating. They agree that Billy Bob will do all the flying, including takeoff, approaches, and landing. Is this a legal flight? If so who can log it?

- ☐ Not legal. The pilot flying needs an instrument rating
- ☐ Legal, but they're both crazy

Logging vs Acting as PIC

Definition of Pilot in Command (FAR Part 1)

Pilot in command means the person who:

- (1) Has final authority and responsibility for the operation and safety of the flight;
- (2) Has been designated as pilot in command before or during the flight; and
- (3) Holds the appropriate category & class, for the conduct of the flight.

Who Needs an Instrument Rating (FAR 61.3 e)

No person may act as pilot in command of a civil aircraft under IFR or in weather conditions less than the minimums prescribed for VFR flight unless that person holds the appropriate aircraft category, class, type (if required) and instrument rating on that person's pilot certificate

Logging Pilot in Command Time (FAR 61.51 e)

A sport, recreational, private, or commercial pilot may log pilot-in-command time only for that flight time during which that person is the sole manipulator of the controls of an aircraft for which the pilot is rated

Logging vs Acting as PIC

- Logging and acting as PIC have nothing at all to do with one another.
- To log PIC time you only need to be the sole manipulator, and have category and class ratings – don't need a medical, flight review or anything else

Lost Com

Do nothing for a minute – try previous, next, FSS freq

Squawk 7600 and proceed VFR to land if possible

Route Guidance

Assigned - Route assigned in the last clearance

Vectors - if radio failure occurred while being radar vectored, then proceed by a direct route to the fix route, or airway specified in the vector clearance

Expect - by the route that ATC advised may be expected

Flight Plan – proceed via your flight plan if the above doesn't apply

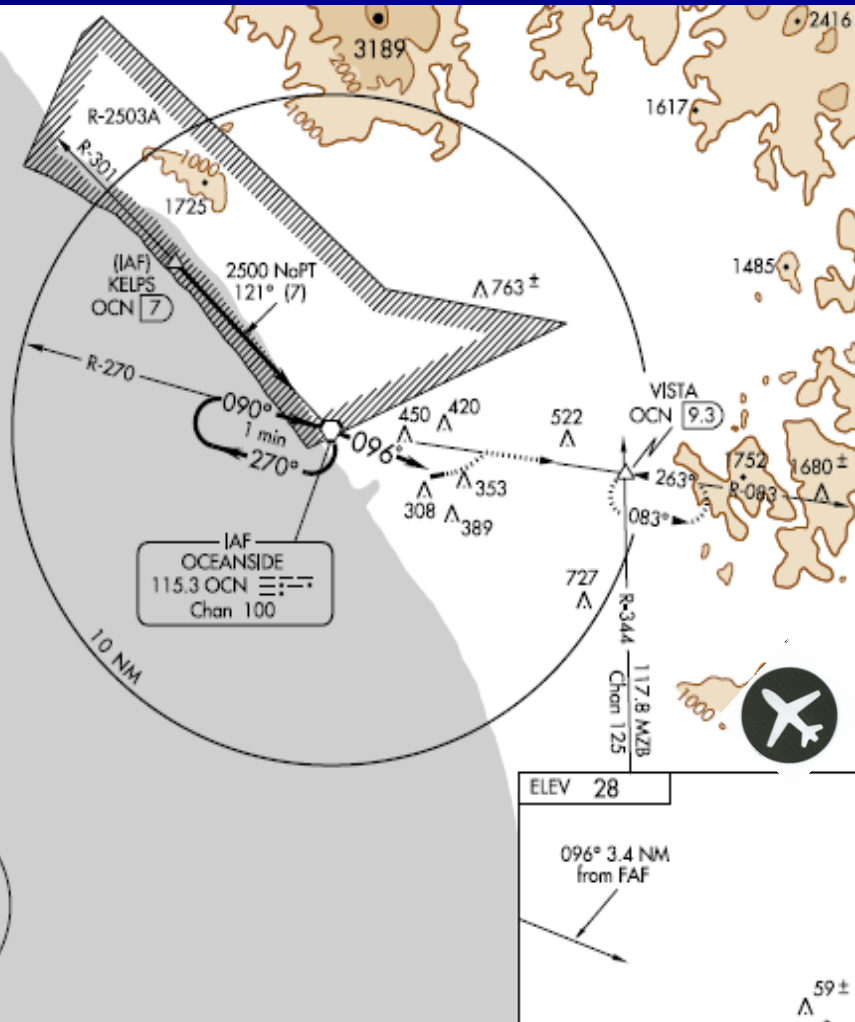
Lost Com

Altitude Guidance

Highest of the following altitudes

- Altitude assigned in the last clearance
- Minimum IFR altitude MEA or OROCA
- Altitude ATC advised may be expected

Lost Com



Cessna 1234, cleared to the
Oceanside airport, after
departure turn left heading 270,
radar vectors to OCN. Climb
maintain 3,000, expect 4,000 in
10 min

On a heading of 270, at 3,000' we lose com

What is the route?

What is the altitude?

Our ETA at OKB is 1700Z.
When would we leave the hold
at OCN

Paper or Plastic Charts?

Are charts of any kind required by regulation?

Electronic charts are governed by AC 91-78

6. REMOVAL OF PAPER FROM THE COCKPIT FOR OPERATIONS UNDER PART 91.

EFBs/ECDs can be used during all phases of flight operations in lieu of paper reference material when the information displayed meets the following criteria:

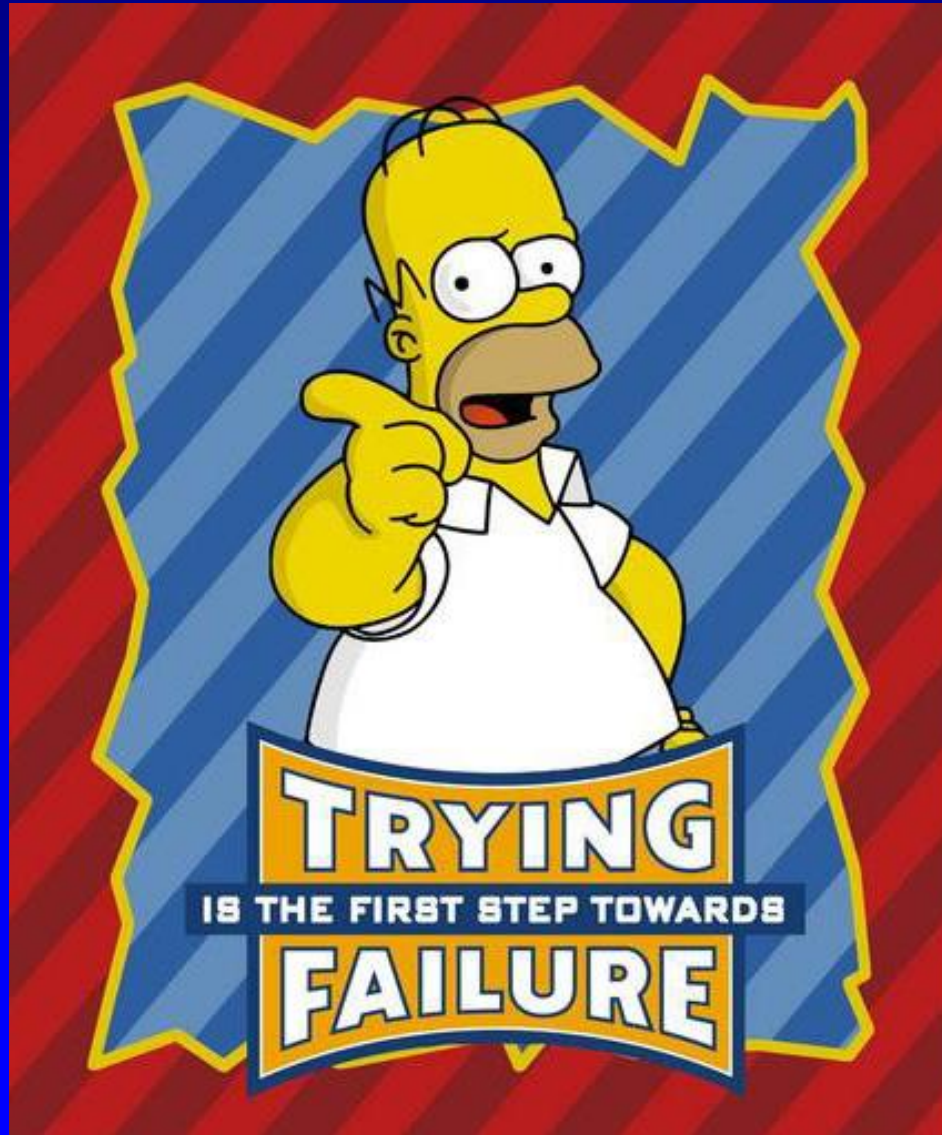
- (1) The components or systems onboard the aircraft which display precomposed or interactive information are the functional equivalent of the paper reference material.
- (2) The interactive or precomposed information being used for navigation or performance planning is current, up-to-date, and valid.

Class 1 Device – Portable

Class 2 Device – Mountable

Class 3 Device - Installed

Notes from Examiners on Orals



Pilot Qualifications

- No endorsement for knowledge test deficiency or ground training
- No citizenship verification

Weather Information

- Unable to analyze weather charts – (solution: print your own)
- Unable to read a basic METAR/TAF (ICAO format)

KNKX 0615/0715 VRB06KT 9999 SCT020 SCT080 620509 520004 QNH2983IN
TEMPO 0618/0622 16012KT 0000 -RA BR BKN010 CVC020
BECMG 0707/0709 17009KT 9000 RA BR BKN020 /C035 QNH2975INS

Visibility 9,999
meters = 6.2 mi

Light icing from
5,000' to 14,000'

Light turbulence
surface to 4,000'

- Unable to describe different types of ice formation (special emphasis area)
- Unable to describe stages of a thunderstorm

X-C Flight Planning

- *Did not look up Notams and TFRs – (FAA website)*
- *Used flight planning software they didn't understand*
- *No knowledge of RAIM, where to get it, when to get it*
- *Didn't know how to translate an ODP climb rate in ft/nm to ft/min*
- *Didn't know 123 rule for alternates or how to determine acceptable alternate*
- *Planned an alternate using a WAAS approach (vertical guidance)*
- *Didn't know lost com procedure*
- *Didn't know important symbols and their meaning on Enroute & Approach Charts, & AFD*
 - *MRA vs. MCA Symbols*
 - *T Routes vs. Victor Airways Depiction*
 - *Non Standard Takeoff Minimum Symbol*
 - *Non standard Alternate Minimum Symbol*
 - *VDP Symbol*
 - *AFD airport descriptions and runway diagram symbols*
 - *Approach Chart Symbols – there are some new symbols e.g. THRE replacing TDZE*

Aircraft Systems & Instruments

- *Couldn't describe vacuum vs. static instruments?*
- *Unable to describe how an airspeed indicator works - unable to answer "what happens to airspeed if your pitot tube ices up in a climb and why"?*
- *Unable to describe how an altimeter works - unable to answer "what happens to altitude if you don't reset from a high to low pressure area OR high to low temperature area and why?"*
- *Couldn't describe how a VSI works and why there is a calibrated leak?*
- *Answered incorrectly the question "What do the wings of the turn coordinator indicate. Do they indicate bank?"*
- *Couldn't explain the errors of a magnetic compass when turning from 270° to 360° and where would you rollout?*
- *Couldn't explain the voltage coming out of the battery and out of the alternator and why there is a difference*
- *On a G1000 system couldn't explain what is controlled by AV Bus 1 and 2*

Flight Portion Checkride Busting Issues

Examiner Notes

*Wow, you
wouldn't
believe what I
saw on
today's flight!!!*



Flight Portion Checkride Issues

Examiner Notes

- *Lost com on missed approach – didn't think about MSA for altitude*
- *Turned the wrong way on holds – learn a good solid method for hold entries*
- *No discussion of how wind will affect hold entry*
- *ATC said "maintain 3,500 until established" but descended before needle alive*
- *Student had no plan to land out of a circling approach*
- *Electrical emergency – no use of checklists (SRM)*
- *Did not identify nav aids*
- *Not listening to tower/ATC instructions – if examiner has to take control (FAIL)*

- *No reporting entering a hold (required report) AIM 5-3-3*
- *Wrong radial selected on a VOR approach*
- *Wrong radial selected for crossing radial*
- *Descended below a step down altitude or MDA/DA*
- *Failed to initiate missed approach in a timely manner (4 C's)*
- *Failed to climb at V_y a timely manner on missed approach*
- *Never cleaned up airplane on missed – need memorized checklist*
- *Descended from MDA before MAP and before declaring airport environment in sight*

Scenarios – Get Ready For Them

- *Encountering icing over high terrain such as LHS or GMN*
- *Vacuum system degradation and eventual failure in IMC at night*
- *Lost com while on departure in IMC from an uncontrolled airport*
- *Missed approach at destination due to wx. Filed alternate is within range but weather is marginal there*
- *Approach Scenario: “Anytime you’re ready, you can tell Socal you’re ready for the approach.*

This presentation can be downloaded at
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