Passing the Instrument Checkride
Tips & Traps

Dave Simpson
Master CFI
Gold Seal CFI
Objectives

• Help you pass your checkride by avoiding mistakes of others
• Identify “must know areas”
• New instrument PTS
• Tricky examiner questions
• How to rescue a mistakes on a checkride
• Real checkride experiences
3 Participants in a Successful Checkride

Student

CFI
Knowledge Test

Don’t start with one strike

Yeah I got 70%
Enter any flight hours for this application into the Aeronautical Experience Grid, if applicable.

* At least one field is required

Aeronautical Experience Grid

<table>
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<th>Airplanes</th>
<th>Rotorcraft</th>
<th>Powered Lift</th>
<th>Gliders</th>
<th>Lighter than Air</th>
<th>Training Device</th>
<th>Simulator</th>
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AC 61-136
AC 120-45

BATD or AATD

10
Completion Of Required Test

Enter data for the Completion of Required Test section of the Airman Certificate and/or Rating Application

Click here to select First Aircraft to be used
- Enter Total Time In First Aircraft
- Enter PIC Time In First Aircraft

Click here to select Second Aircraft to be used if applicable
- Enter Total Time In Second Aircraft
- Enter PIC Time In Second Aircraft

Select Simulator Level if Applicable
- [Select]...
- Enter Total Time In Simulator

Select Training Device Level if applicable
- Level 2 - Flight Training Device
- Enter Total Time In Training Device

Cessna
- 64.5 Hours
- 52.0 Hours

Leave Blank
IACRA Tips

• Save copy of IACRA application and e-mail it to your instructor (or do it together) before submitting it. If there’s a mistake, you’ll have to start over.

• Print a signed copy of the final 8710 as a backup in case IACRA is down
Logbook Endorsement Tips

- Citizenship verification
- Authorization to take knowledge test
- Knowledge test deficiency resolution
- 3 hrs dual, 2 months before checkride
- Practical test endorsement
- **Ground training endorsement 61.65 (b)**
Ground Endorsement

I certify that Al K. Holik has received the required ground training 14 CFR 61.65 (b) 1-10

CFI Signature, CFI #, Expiration, Date
New Instrument Syllabus
New Instrument Syllabus

- LPV approaches less than DA 300’ HAT are now considered precision approaches for checkride purposes only. Therefore possible approaches to satisfy precision requirement in the San Diego area are either ILS at MYF or CRQ or RNAV 28 MYF.

- One of the two non precision approaches will have no vertical guidance (Jan PTS says both). Therefore possible approaches to satisfy this non precision requirement (no glideslope) are: All VOR, All LNAV, LOC, NDB.

- The other non precision approach can be any of the above (no vertical guidance) or may be any of the following provided that the DA is greater than 300’ HAT (Only contained in on-line update to Jan 2010 PTS): LPV, LNAV/VNAV, LNAV+V.
• One of the non precision approaches will require either a PT or RNAV TAA

• One of the non precision approaches will be conducted partial panel/loss of PFD

• One of the non precision approaches will be conducted with the autopilot (if working)

• **NOTE:** If any avionics/navigation unit, including GPS, in the aircraft used for the practical test is placarded inoperative, the examiner will review the maintenance log to verify that the discrepancy has been properly documented – e.g. ADF, autopilot, DME

• Special emphasis area of icing hazards

• New emphasis on SRM - single pilot resource management

  4 pages devoted to this in PTS
Most fatal accidents include a lack of SRM skills (task management (TM), risk management (RM), automation management (AM), aeronautical decision making (ADM), controlled flight into terrain (CFIT), and situational awareness (SA) as a causal factor.

Consequently, examiners must evaluate the applicant to ensure that he or she has the appropriate level of these skills. A Judgment Assessment Matrix is provided as a tool to evaluate the applicant’s SRM skills objectively. The examiner will use the Judgment Assessment Matrix during the practical test.
Single Pilot Resource Management

The six components of SRM can best be remembered by the acronym CARATS (like diamonds):
- CFIT avoiding controlled flight into terrain
- ADM aeronautical decision making (Use 5P’s & DECIDE)
- Risk Management (Use PAVE)
- Automation Management (e.g. autopilot, glass panel training)
- Task Management (e.g. use of checklists)
- Situational awareness (e.g. not becoming distracted)

The components of ADM are best remembered by using the 5P’s and the acronym DECIDE.
- Plan – appropriate for the mission and still viable?
- Plane – capable for the mission & still working properly?
- Pilot – still up to the task?
- Passengers – causing distractions, problems, or pressure?
- Programming – automation working and appropriate for the conditions?

When a decision need to be made the DECIDE acronym is a good process
- Detect a problem
- Estimate need for action
- Choose the desired outcome
- Identify action
- Do the action
- Evaluate the effect of the action

The components of Risk Management can best be remembered by the acronym PAVE
- Pilot (how capable are you) Use IMSAFE (Illness, Medication, Sleep, Alcohol, Fatigue, Eating)
- Aircraft (how capable is it?)
- V environment (e.g. weather, terrain, night, VFR/IFR)
- External factors – e.g. pressure to get there
Single Pilot Resource Management

- Chapter 17
- AC 60-22
Checkride Expectations & Standards

• Prove that you have an airworthy aircraft
  – Airworthiness Directives
  – Inspections
  – Airworthy according to 14 CFR 91.213 (d)
• Altitude prior to FAF +/- 100’
• Altitude from FAF to MDA or DA +100/-0
• Course ¾ scale maximum deflection
• Report entering hold - AIM 5-3-3 1(f)
• Report missed approach - AIM 5-3-3 1(d)
• Be prepared to land on a circling approach
Checkride Expectations & Standards

• Be prepared to explain lost com procedures during any phase of flight (SRM)
• For G1000 be prepared to lose entire PFD and fly NP approach with MFD only (user setting)
• For Avidyne/Aspen – lose PFD and fly NP approach with CDI screen of GNS 430/530
• Expectation that autopilot will be used throughout checkride to reduce workload (PTS & SRM)
Notes from Examiners on Failed Orals

Trying is the First Step Towards Failure
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)

Visibility 9,999 meters = 6.2 mi

Light icing from 5,000’ to 14,000’

Light turbulence surface to 4,000’
Weather Information Cont’d

• 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)
The following is a list of NOTAMs within a 20NM radius of the specified flight path (KMYF -> KSBA).

Locations: KMYF, KSBA, ZLA, MMFR

Data Current as of: Thu, 29 Apr 2010 20:47:00 UTC

**KMYF** MONTGOMERY FIELD

Check All KMYF  UnCheck All KMYF

IFDC 0/8412 MYF PART 1 OF 2 FI/T MONTGOMERY FIELD, SAN DIEGO, CA. TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES... NOTE: RWY 28L, BUSHES BEGINNING 35 FT FROM DEPARTURE END OF RWY, 338 FT RIGHT OF CENTERLINE, UP TO 4 FT AGL/415 FT MSL. MULTIPLE POLES BEGINNING 407 FT FROM DEPARTURE END OF RWY, 160 FT RIGHT OF CENTERLINE, UP TO 37 FT AGL/432 FT MSL. MULTIPLE TREES AND POLES BEGINNING 1007 FT FROM DEPARTURE END OF RWY, 7 FT LEFT OF CENTERLINE, UP TO 37 FT AGL/451 FT MSL. NOTE: RWY 28R, BUSHES BEGINNING 34 FT FROM DEPARTURE END OF RWY, 162 FT RIGHT OF CENTERLINE, UP TO 4 FT AGL/415 FT MSL. MULTIPLE TREES, SIGNS AND POLES BEGINNING 767 FT FROM DEPARTURE END OF RWY, 98 FT RIGHT OF CENTERLINE, UP TO 67 FT AGL/488 FT MSL. MULTIPLE TREES AND POLES BEGINNING 406 FT FROM DEPARTURE END OF RWY, 339 FT LEFT OF CENTERLINE, UP TO 38 FT AGL/451 FT MSL. NOTE: RWY 10L, MULTIPLE TREES BEGINNING 230 FT FROM DEPARTURE END OF RWY, 495 FT LEFT OF CENTERLINE, UP TO 57 FT AGL/486 FT MSL. MULTIPLE TREES BEGINNING 1172 FT FROM DEPARTURE END OF RWY, 91 FT RIGHT OF CENTERLINE, UP TO 69 FT AGL/488 FT MSL. NOTE: RWY 10R, ROD ON ELECTRICAL EQUIPMENT 40 FT FROM DEPARTURE END...
X-C Flight Planning Cont’d

• No knowledge of RAIM, where to get it, when to get it
• Used on line flight planner but couldn’t explain how mag course was calculated
• Let flight planner dictate route over high terrain
• 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
• Didn’t know lost com procedure – VFR or AVEF + highest 3 altitudes
• 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 – some must know stuff …
SAN DIEGO (EL CAJON), CALIFORNIA

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<th>APP CRS</th>
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LOC-D
SAN DIEGO/GILLESPIE FIELD (SEE)

Circling not authorized NE of Rwys 17 and 27R.
When control tower closed use Miramar MCAS, CA altimeter setting and increase all MDAs 40 feet.

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

ATIS | SOCAL APP CON | GILLESPIE TOWER | GND CON | CLNC DEL | UNICOM
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LOCALIZER 110.5
LOC
What are standard takeoff minimums?

**TAKE-OFF MINIMUMS:** Rwys 9L, 9R, 900-2 or std. with a min. climb of 1000' per NM to 1600', Rwys 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'. Rwys 35, 1300-2 or std. with a min. climb of 460' per NM to 1800'.

**DEPARTURE PROCEDURE:** Rwys 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.

What criteria requires an ODP to be published?
## Rate-of-Climb Table

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**Vertical Speed — Feet Per Minute (fpm)**

- 667 fpm at 500 feet per NM climb gradient at ground speed of 80 knots.
What are standard alternate minimums?

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<tr>
<th>Name</th>
<th>Alternate Minimums</th>
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| SAN DIEGO (EL CAJON), CA | Gillespie Field LOC-D<sup>12</sup>
|                       | RNAV (GPS) Rwy 17<sup>34</sup>          |
|                       | ¹NA when control tower closed.          |
|                       | ²Categories A, B, 2400-2; Categories C, D, 2400-3. |
|                       | ³Categories A, B, 1100-2; Category C, 1100-3; Category D, 1200-3. |
|                       | ⁴NA when local weather not available.   |

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<td>VOR or TACAN A&lt;sup&gt;2&lt;/sup&gt;</td>
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<tr>
<td></td>
<td>²Category A,B, 900-2; Category C, 1100-3; Category D, 1100-3.</td>
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<tr>
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<td>⁴NA when control tower closed.</td>
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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
Wow, you wouldn’t believe what I saw on today’s flight!!!
Flight Portion Checkride Busting 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
• Time the ILS as a backup – the examiner may “fail” the glideslope
• 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 navaids
• 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

• Be prepared to descend right to the MDA/DA (don’t round up)

• Marker beacon not on for ILS approach – need approach acronyms

• Failed to initiate missed approach in a timely manner

• Failed to climb in 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
Tricky Examiner Questions

• You’re in IMC on the ILS at MYF and reach the DA and see 1 approach light … Now what?
• Which way does the gyro spin on the turn coordinator, vertically or horizontally?
• What does A02 mean in the AFD?
• You just discovered that your VSI is inoperative – is the airplane airworthy?
• What are the four components of an ILS?
• What is the aural ID of a VOT?
Final Thoughts and Advice

• Never give up. Most checkride “fatal mistakes” can be rectified. Examiners don’t expect it to be perfect.
  – Part of SRM
  – LOC D SEE
  – VOR A OKB

• Talk constantly – silence is not golden

• Some examiners do stage checks
This presentation can be downloaded at
www.takeflightsandiego.com