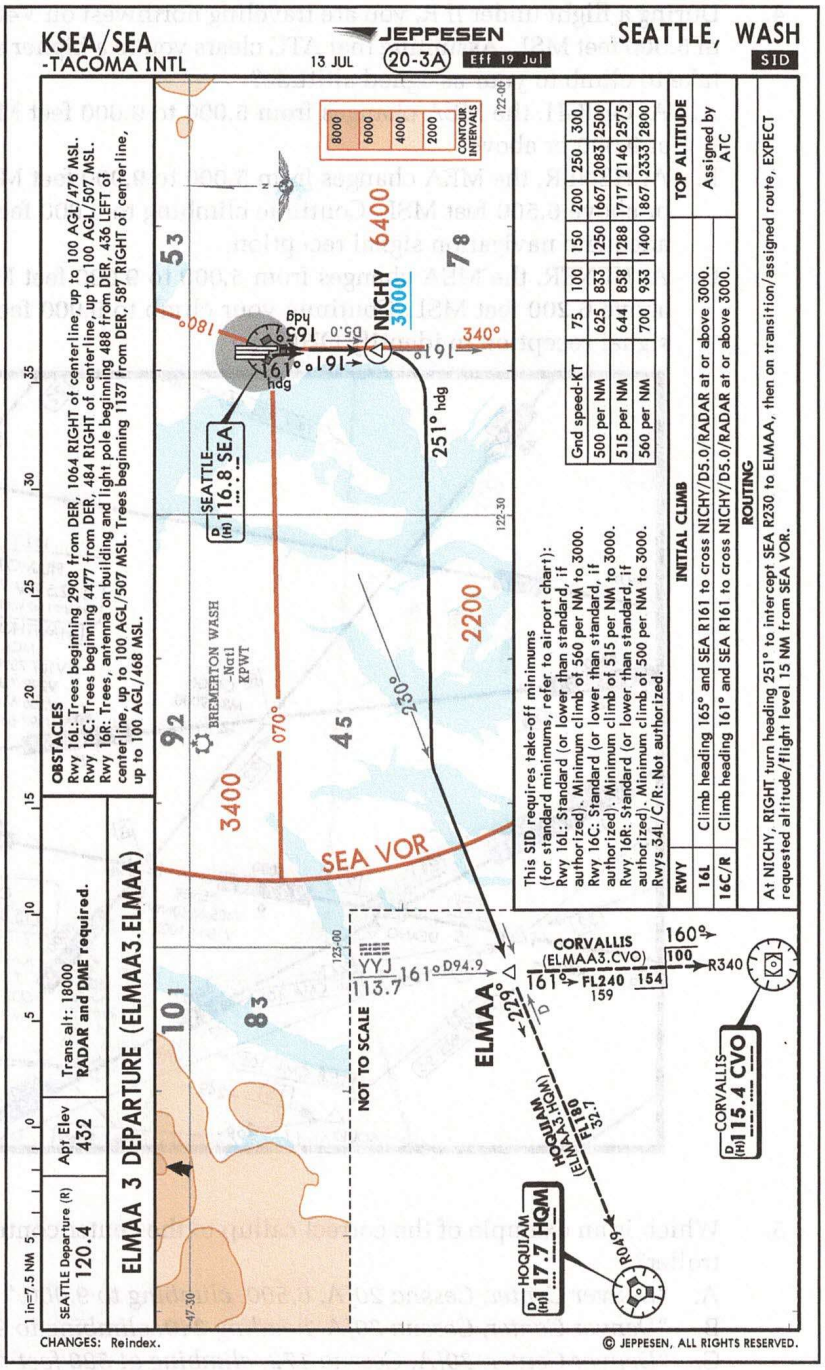
Instrument Rating Stage II Exam

Completely darken only one circle for each question on the answer form.

DEPARTURE

1. Select the true statement regarding instrument departure procedures.
   A. Departures in a diverse vector area (DVA) follow a specific published ground track.
   B. Pilot navigation SIDs are published in graphic form and do not include textual descriptions of any routing.
   C. Obstacle departure procedures (ODPs) are designed solely for obstacle clearance and do not require an ATC clearance.

Refer to the ELMAA THREE departure chart for Seattle-Tacoma International Airport to answer question 1.

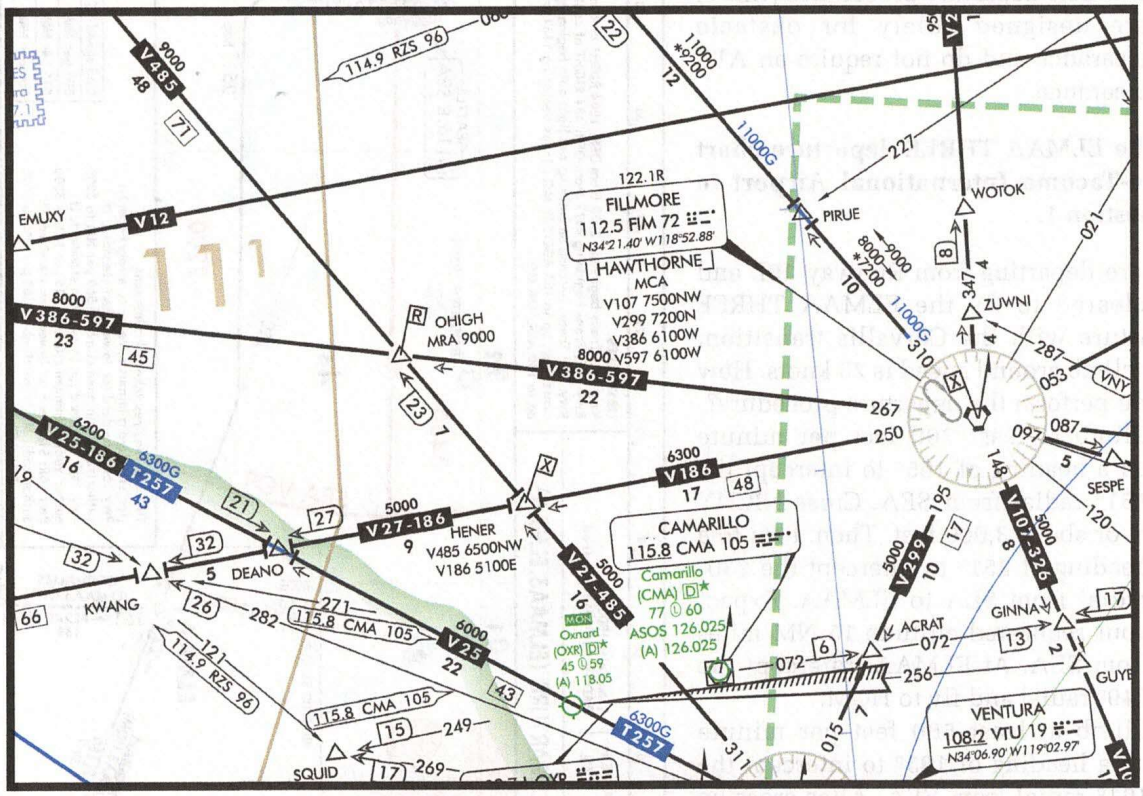


2. You are departing from Runway 16L and are cleared to fly the ELMAA THREE departure with the Corvallis transition. Your climb ground speed is 75 knots. How do you perform the departure procedure?
   A. Climb at least 700 feet per minute on a heading of 165° to intercept the 161° radial from SEA. Cross NICHY at or above 3,000 feet. Then, turn to a heading of 251° to intercept the 230° radial from SEA to ELMAA. Expect your requested altitude 15 NM miles from SEA. At ELMAA, intercept the 049° radial and fly to HQM.
   B. Climb at least 560 feet per minute on a heading of 165° to intercept the 161° radial from SEA. After crossing NICHY, turn to a heading of 251° to intercept the 230° radial from SEA to ELMAA. Expect a clearance to 3,000 feet MSL 15 NM miles from SEA. At ELMAA intercept the 161° radial from YYJ and at 154 NM from YYJ, intercept the 340° radial and fly to CVO.
   C. Climb at least 700 feet per minute on a heading of 165° to intercept the 161° radial from SEA. Cross NICHY at or above 3,000 feet. Then, turn to a heading of 251° to intercept the 230° radial from SEA to ELMAA. Expect your requested altitude 15 NM miles from SEA. At ELMAA intercept the 161° radial from YYJ and at 154 NM from YYJ, intercept the 340° radial and fly to CVO.

3. If a SID requires a climb gradient of 400 feet per nautical mile, what is the required rate of climb at a groundspeed of 120 knots?
   A. 400 ft/min
   B. 800 ft/min
   C. 1,000 ft/min

ENROUTE

4. During a flight under IFR, you are traveling northwest on V485 from Ventura VOR/DME at an assigned altitude of 5,000 feet MSL. Assuming that ATC clears you to a higher altitude along your route, what actions should you take to climb to your assigned altitude?
   A. At OHIGH, the MEA changes from 5,000 to 9,000 feet MSL. At HENER, begin your climb to cross OHIGH at 9,000 or above.
   B. At HENER, the MEA changes from 5,000 to 9,000 feet MSL. At HENER, begin climbing to cross OHIGH at or above 6,500 feet MSL. Continue climbing to 9,000 feet after passing OHIGH to guarantee that you have adequate navigation signal reception.
   C. At HENER, the MEA changes from 5,000 to 9,000 feet MSL. Prior to HENER, climb to cross HENER at or above 6,200 feet MSL. Continue your climb to 9,000 feet to guarantee that you have adequate navigation signal reception to identify OHIGH.



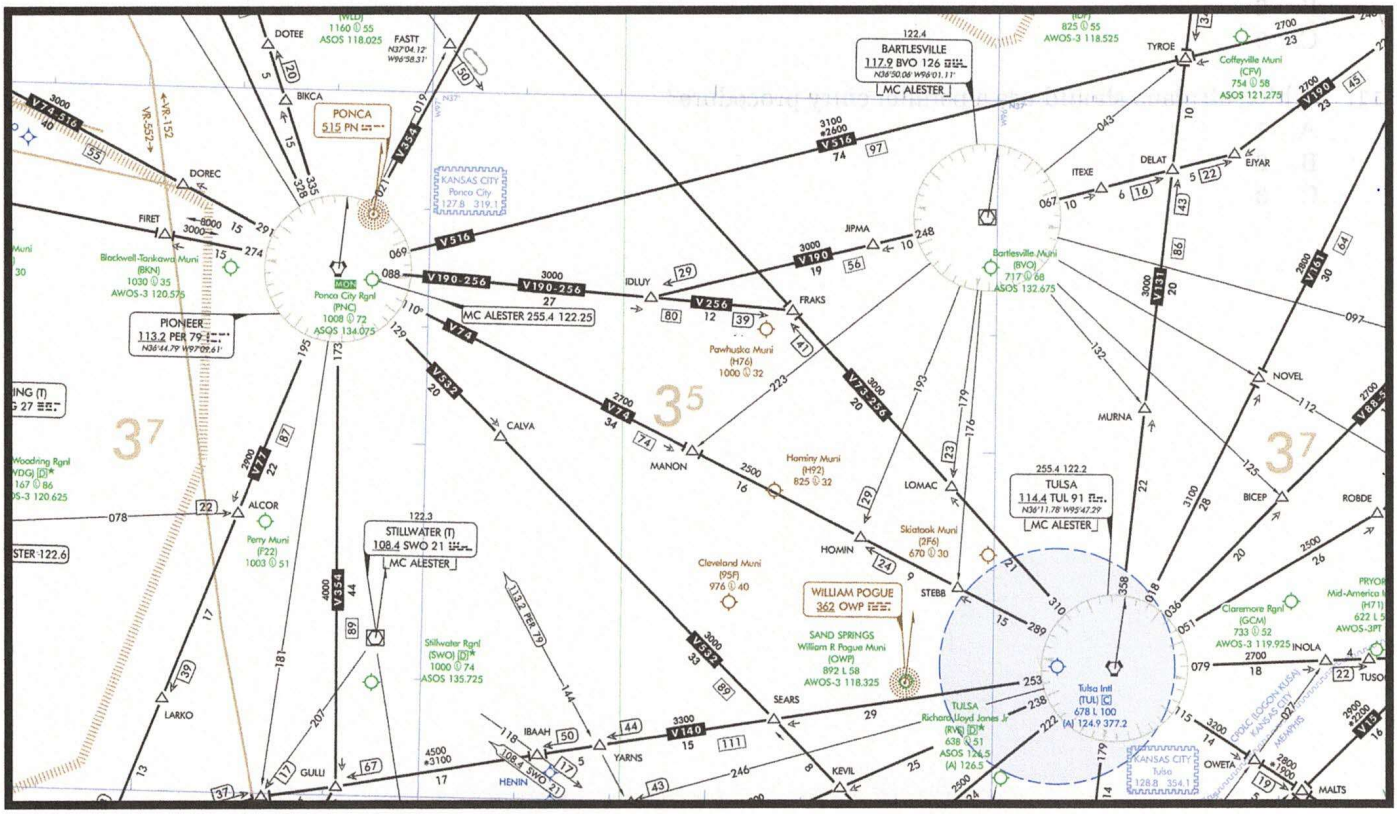
5. Which is an example of the correct callup to the center controller after being handed off by the departure controller?
   A. *"Denver Center, Cessna 20JA, 6,500, climbing to 9,000."*
   B. *"Denver Center, Cessna 20JA, heading 240, climbing to 9,000."*
   C. *"Denver Center, 20JA, Cessna 172, climbing at 500 feet per minute to 9,000."*

6. If you receive a frequency change from ARTCC and are unable to contact the new controller, what should you do?
   A. Squawk 7600 on the transponder and follow the loss of communications procedures on the enroute chart.
   B. Try to contact the controller on the loss of communications frequency printed on the chart near the ARTCC frequency. Failing that, contact Flight Service for an alternate frequency.

C. Return to the previously assigned frequency and request an alternate frequency. If you are still unable to establish radio contact, try again on any ARTCC frequency. Failing that, contact Flight Service for further instructions.

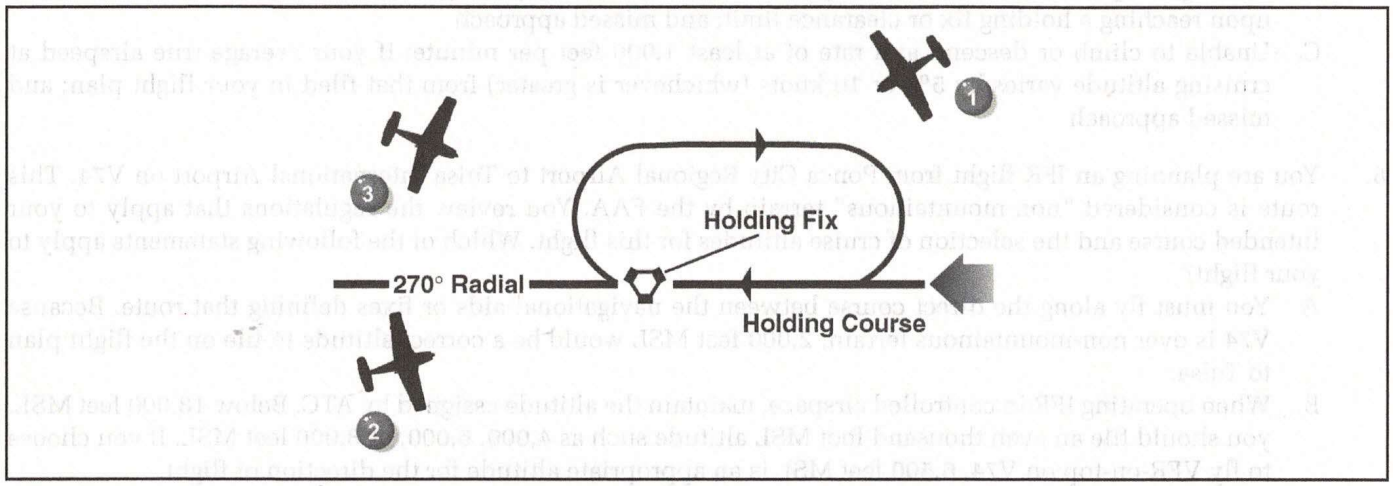
7. Which reports should you make to ATC whether or not you are in a radar contact?
   A. Any loss of navigation equipment capability; altitude changes when operating on a VFR-on-top clearance; and position reports at compulsory reporting points
   B. Leaving the previous altitude when you are cleared to a newly assigned altitude; your time and altitude upon reaching a holding fix or clearance limit; and missed approach
   C. Unable to climb or descend at a rate of at least 1,000 feet per minute; if your average true airspeed at cruising altitude varies by 5% or 10 knots (whichever is greater) from that filed in your flight plan; and missed approach

8. You are planning an IFR flight from Ponca City Regional Airport to Tulsa International Airport on V74. This route is considered "non-mountainous" terrain by the FAA. You review the regulations that apply to your intended course and the selection of cruise altitudes for this flight. Which of the following statements apply to your flight?
   A. You must fly along the direct course between the navigational aids or fixes defining that route. Because V74 is over non-mountainous terrain, 2,000 feet MSL would be a correct altitude to file on the flight plan to Tulsa.
   B. When operating IFR in controlled airspace, maintain the altitude assigned by ATC. Below 18,000 feet MSL, you should file an even thousand foot MSL altitude such as 4,000, 6,000, or 8,000 feet MSL. If you choose to fly VFR-on-top on V74, 6,500 feet MSL is an appropriate altitude for the direction of flight.
   C. When operating IFR in controlled airspace, maintain the altitude assigned by ATC. Below 18,000 feet MSL, you should file an odd thousand foot MSL altitude such as 5,000, 7,000, or 9,000 feet MSL. If you choose to fly VFR-on-top on V74, 5,500 feet MSL is an appropriate altitude for the direction of flight.



9. Within approximately how many minutes before the ETA at the holding fix are you expected to reduce your airplane's airspeed below the maximum holding airspeed, if applicable?
   A. One minute
   B. Five minutes
   C. Three minutes

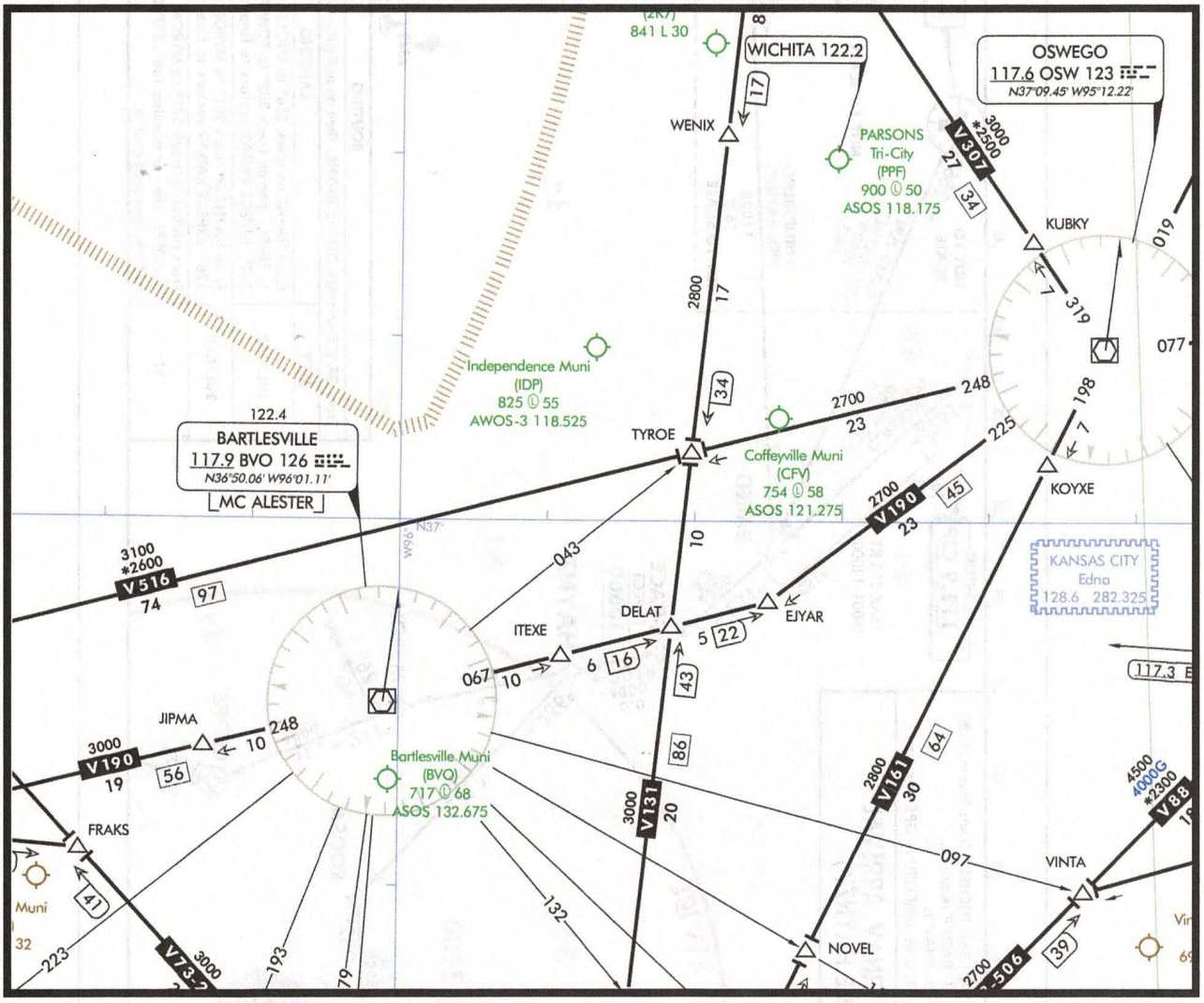
Refer to the accompanying illustration to answer questions 10 and 11.



10. Which airplane should use a teardrop entry procedure?
    A. 1
    B. 2
    C. 3

11. Which airplane should use a parallel entry procedure?
    A. 1
    B. 2
    C. 3

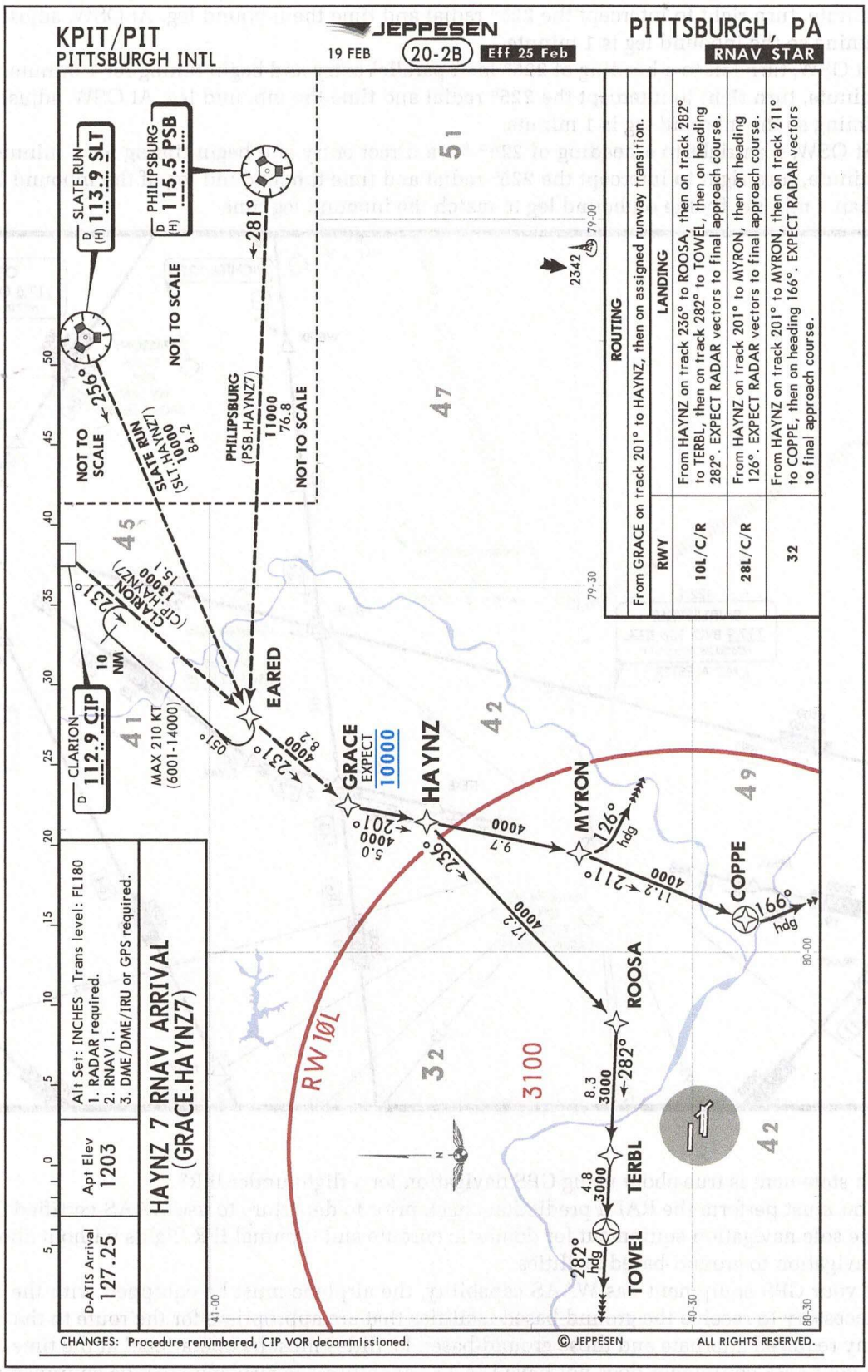
12. You are navigating on V190 between the Bartlesville and Oswego VORTACs at 9,000 feet MSL. As you approach OSW, you receive a clearance to hold at OSW on the 225° radial, right turns, expect further clearance at 1625Z. What are the necessary steps you need to take to perform the holding pattern after reaching OSW?
    A. At OSW, turn right to a heading of 225° for a direct entry and begin timing for 1 minute. At the end of 1 minute, turn right to intercept the 225° radial and time the inbound leg. At OSW, adjust the outbound leg timing so the inbound leg is 1 minute.
    B. At OSW, turn left to a heading of 225° for a parallel entry and begin timing for 1 minute. At the end of one minute, turn right to intercept the 225° radial and time the inbound leg. At OSW, adjust the outbound leg timing so the inbound leg is 1 minute.
    C. At OSW, turn right to a heading of 225° for a direct entry and begin timing for 1 minute. At the end of 1 minute, turn right to intercept the 225° radial and time the inbound leg. If the inbound leg is less or more than 1 minute, fly the outbound leg to match the inbound leg time.



13. Which statement is true about using GPS navigation for a flight under IFR?
    A. You must perform the RAIM prediction check prior to departure to use WAAS-certified GPS equipment as the sole navigation equipment for domestic enroute and terminal IFR flights without alternate avionics for navigation to ground-based facilities.
    B. If your GPS equipment has WAAS capability, the airplane must be equipped with the alternate avionics necessary to receive the ground-based facilities that are appropriate for the route to the destination and to any required alternate and those ground-based facilities must be operational at the time of the flight.
    C. If your GPS equipment does not have WAAS capability, the airplane must be equipped with the alternate avionics necessary to receive the ground-based facilities that are appropriate for the route to the destination and to any required alternate and those ground-based facilities must be operational at the time of the flight.

ARRIVAL

Refer to the HAYNZ 7 RNAV ARRIVAL chart to answer questions 14 and 15.

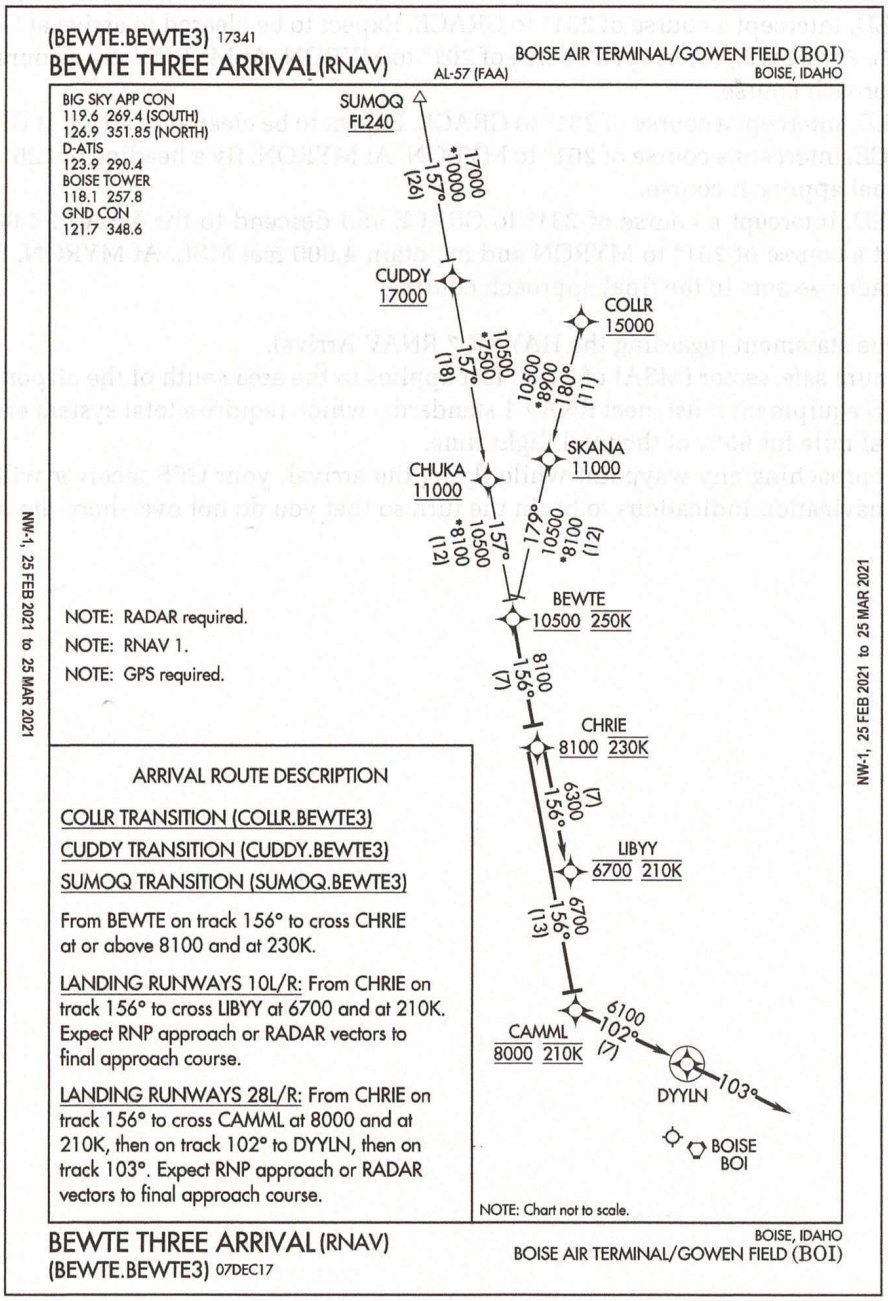


STAGE II

14. You are at 11,000 feet MSL nearing Philipsburg (PSB) VORTAC in a Cessna 172 and are cleared to fly the HAYNZ 7 RNAV arrival and to expect an approach to 28L. How do you perform the published STAR?
    A. At EARED, intercept a course of 231° to GRACE. Expect to be cleared to arrive at GRACE at or below 10,000 feet MSL. At GRACE, intercept a course of 201° to MYRON. At MYRON, fly a course of 126° to intercept the final approach course.
    B. At EARED, intercept a course of 231° to GRACE. Expect to be cleared to arrive at GRACE at 10,000 feet MSL. At GRACE, intercept a course of 201° to MYRON. At MYRON, fly a heading of 126° and expect radar vectors to the final approach course.
    C. At EARED, intercept a course of 231° to GRACE and descend to the MEA of 4,000 feet MSL. At GRACE, intercept a course of 201° to MYRON and maintain 4,000 feet MSL. At MYRON, fly a heading of 126° and expect radar vectors to the final approach course.

15. Select the true statement regarding the HAYNZ 7 RNAV Arrival.
    A. A minimum safe/sector (MSA) of 4,200 feet applies to the area south of the airport.
    B. Your GPS equipment must meet RNAV 1 standards, which require a total system error (TSE) of no more than 1 nautical mile for 95% of the total flight time.
    C. When approaching any waypoint while flying the arrival, your GPS receiver will anticipate the turn and display navigation indications to begin the turn so that you do not overshoot the next flight segment.

Refer to the BEWTE THREE (RNAV) ARRIVAL chart for Boise Air Terminal/Gowen Field to answer questions 16, 17 and 18.



16. Which procedure applies if you are cleared to "descend via" the BEWTE THREE arrival?
    A. Comply with STAR's lateral path while maintaining altitudes assigned by ATC.
    B. Comply with the STAR's lateral path and with the associated speed and altitude restrictions.
    C. Descend at your discretion throughout the STAR procedure to arrive at the minimum altitude that applies to an initial approach fix.

17. Which restrictions apply to the specified waypoint?
    A. CAMML—maximum altitude of 8,000 feet; mandatory airspeed of 210 knots.
    B. LIBYY—mandatory altitude of 6,700 feet MSL; maximum airspeed of 210 knots.
    C. BEWTE—minimum altitude of 10,500 feet MSL; mandatory airspeed of 250 knots.

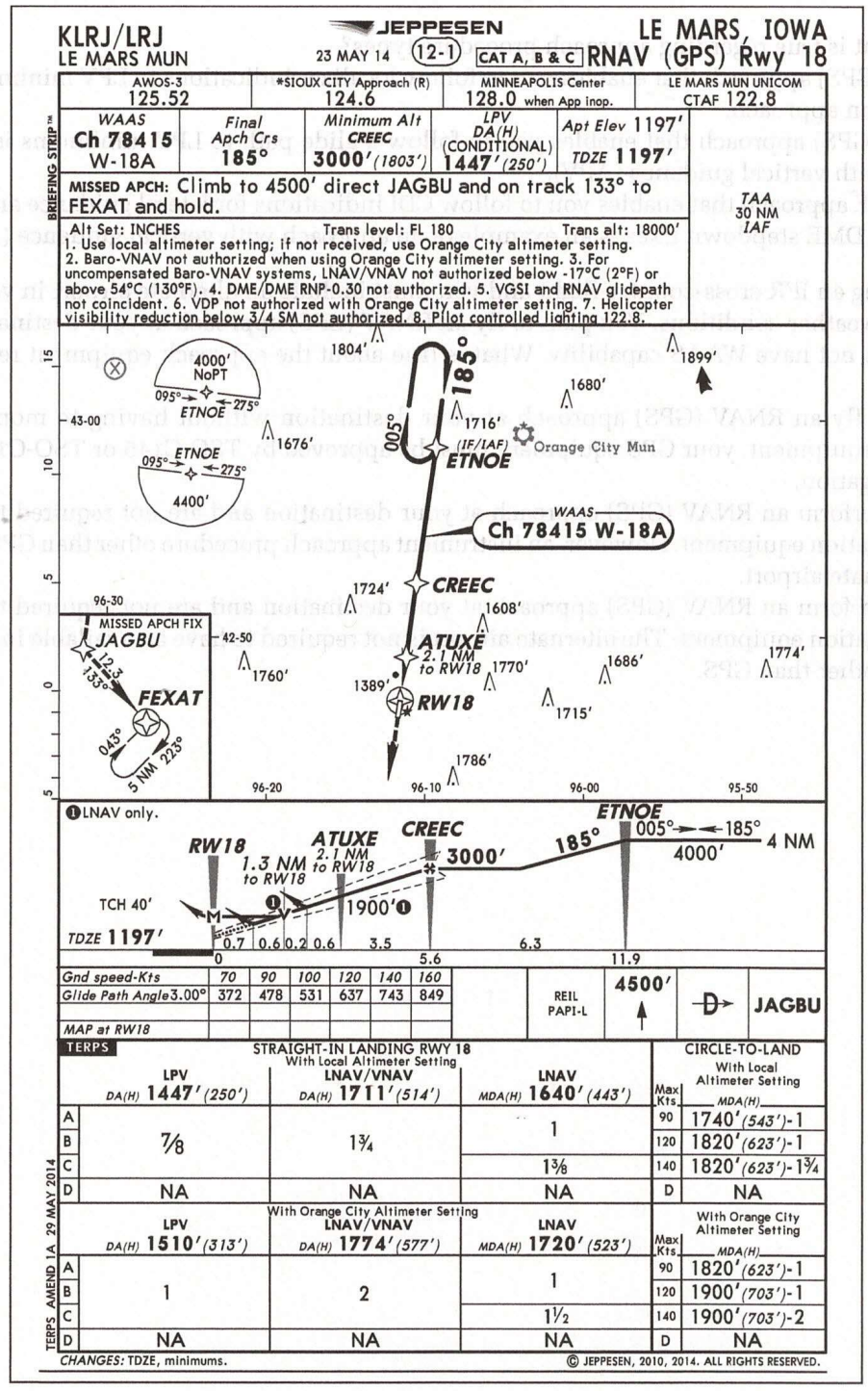
18. What is required to fly the BEWTE THREE arrival?
    A. Radar and WAAS-certified GPS equipment
    B. Radar and GPS equipment that meets RNAV 1 accuracy standards
    C. Special authorization, radar, and GPS equipment that meets RNAV 1 accuracy standards

INSTRUMENT APPROACHES

19. Which statement is true regarding approach procedure types?
    A. An RNAV (GPS) approach that enables you to follow localizer indications to LPV minimums is an example of a precision approach.
    B. An RNAV (GPS) approach that enables you to follow a glide path to LPV minimums is an example of an approach with vertical guidance (APV).
    C. A VOR/DME approach that enables you to follow CDI indications for lateral guidance and to descend to an MDA using DME stepdown fixes is an example of an approach with vertical guidance (APV).

20. You are planning an IFR cross-country flight and you must include an alternate airport in your flight plan due to the forecast weather conditions. You plan to fly an RNAV (GPS) approach at your destination and your GPS equipment does not have WAAS capability. What is true about the approach equipment requirements in this situation?
    A. In order to fly an RNAV (GPS) approach at your destination without having to monitor ground-based navigation equipment, your GPS equipment must be approved by TSO-C145 or TSO-C146 for vertical and lateral navigation.
    B. You may perform an RNAV (GPS) approach at your destination and are not required to monitor ground-based navigation equipment. However, an instrument approach procedure other than GPS must be available at the alternate airport.
    C. You may perform an RNAV (GPS) approach at your destination and are not required to monitor ground-based navigation equipment. The alternate airport is not required to have an available instrument approach procedure other than GPS.

Refer to the RNAV (GPS) Rwy 18 approach chart for Le Mars Municipal Airport to answer questions 21 through 24.



STAGE II

21. You are cleared for the GPS (RNAV) Rwy 18 approach to Le Mars Municipal Airport. Which is a correct procedure for flying the initial and intermediate approach segments?

A. On a course of 220° to ETNOE, maintain 4,000 feet MSL. At ETNOE, fly a direct entry to the holding pattern to reverse course. After intercepting a course of 185° and passing ETNOE inbound, descend to 3,000 feet MSL.

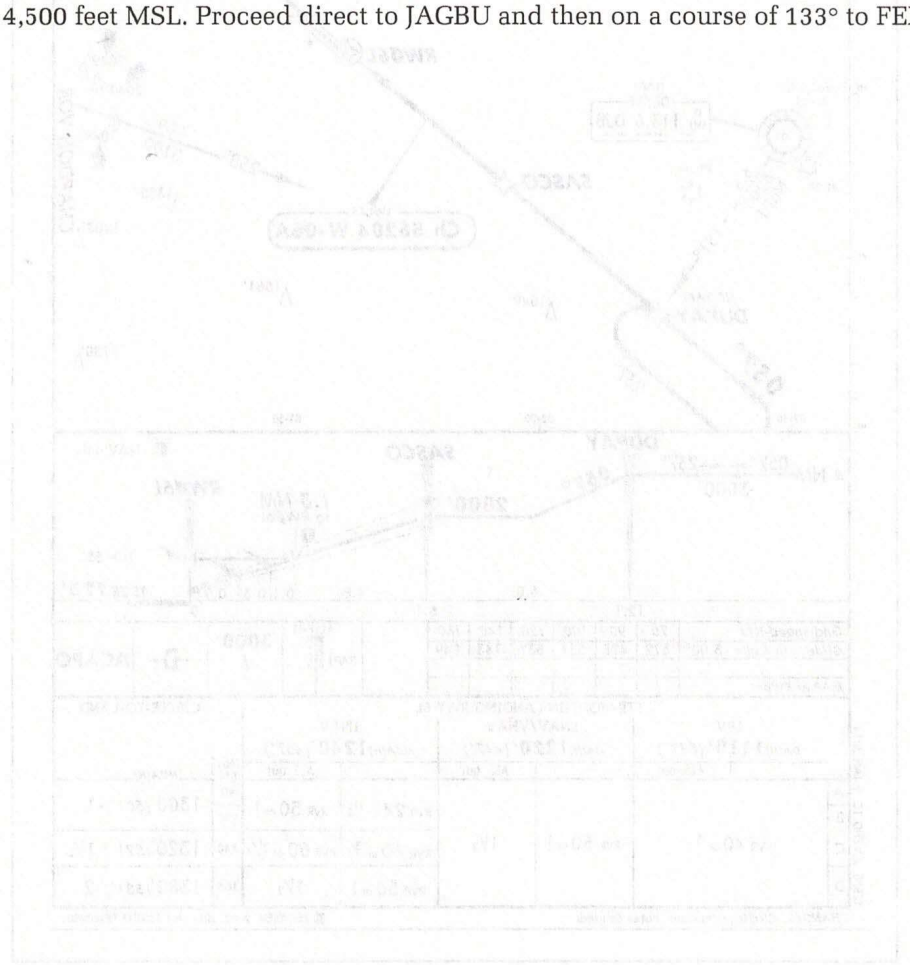
B. On a course of 350° to ETNOE, maintain 4,000 feet MSL. At ETNOE, fly a teardrop entry to the holding pattern to reverse course and descend to 3,000 feet MSL. Maintain 3,000 feet MSL and intercept a course of 185° to CREEC.

C. On a course of 350° to ETNOE, maintain 4,400 feet MSL. At ETNOE, fly a teardrop entry to the holding pattern to reverse course and descend to 4,000 feet MSL. After intercepting a course of 185° and passing ETNOE inbound, descend to 3,000 feet MSL.

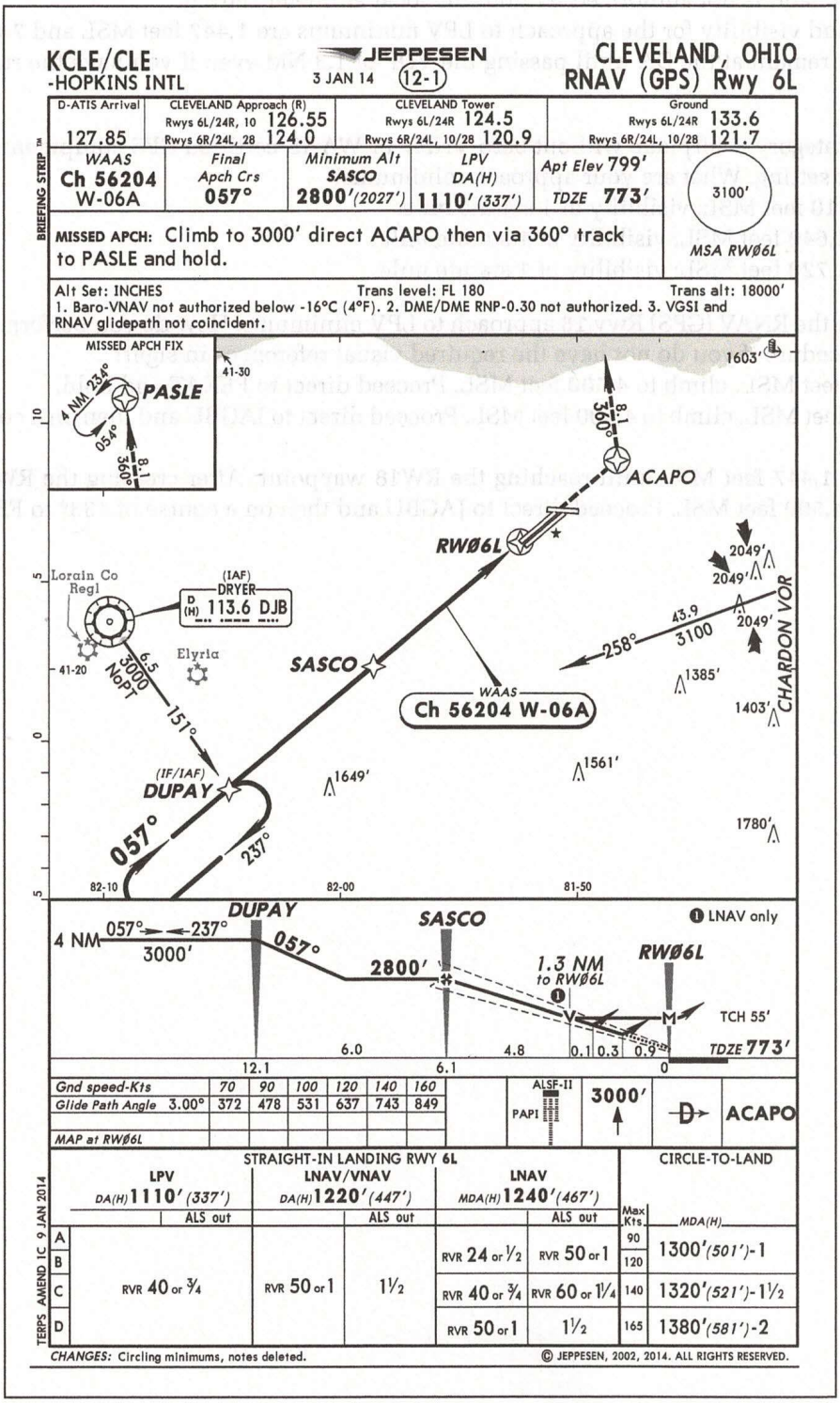
22. You are in a category A airplane and plan to fly the RNAV (GPS) Rwy 18 approach at 90 knots. You have WAAS-certified GPS equipment and the local altimeter setting. What is true regarding this procedure?
    A. Circling to land is not authorized without the local altimeter setting.
    B. The DA and visibility for the approach to LPV minimums are 1,447 feet MSL and 7/8 statute mile.
    C. You must remain at the DA until passing the VDP of 1.3 NM even if you have the runway environment in sight.

23. You are in a category A airplane without baro-VNAV or WAAS-certified GPS equipment. You have the Orange City altimeter setting. What are your approach minimums?
    A. DA of 1,510 feet MSL; visibility of 1 statute mile.
    B. MDA of 1,640 feet MSL; visibility of 1 statute mile.
    C. MDA of 1,720 feet MSL; visibility of 1 statute mile.

24. You are flying the RNAV (GPS) Rwy 18 approach to LPV minimums. How do you perform the published missed approach procedure if you do not have the required visual references in sight?
    A. At 1,447 feet MSL, climb to 4,500 feet MSL. Proceed direct to FEXAT and hold.
    B. At 1,447 feet MSL, climb to 4,500 feet MSL. Proceed direct to JAGBU and then on a course of 133° to FEXAT and hold.
    C. Maintain 1,447 feet MSL until reaching the RW18 waypoint. After crossing the RW18 waypoint, begin a climb to 4,500 feet MSL. Proceed direct to JAGBU and then on a course of 133° to FEXAT and hold.



Refer to the RNAV (GPS) Rwy 6L approach chart for Cleveland-Hopkins International Airport to answer questions 25 and 26.



25. What is true about flying a transition route for the RNAV (GPS) Rwy 6L approach to Cleveland-Hopkins International Airport?
   A. Use the terminal arrival area, and stay at or above 3,100 feet to navigate direct to the IAF from any position.
   B. Fly the feeder route of the 151° radial from DJB at your assigned altitude at or above 3,000 feet MSL to DUPAY, the IAF, to perform the course reversal.
   C. Fly the feeder route of the 258° radial from Chardon VOR at your assigned altitude at or above 3,100 feet MSL to DUPAY, the IAF, to perform the course reversal.

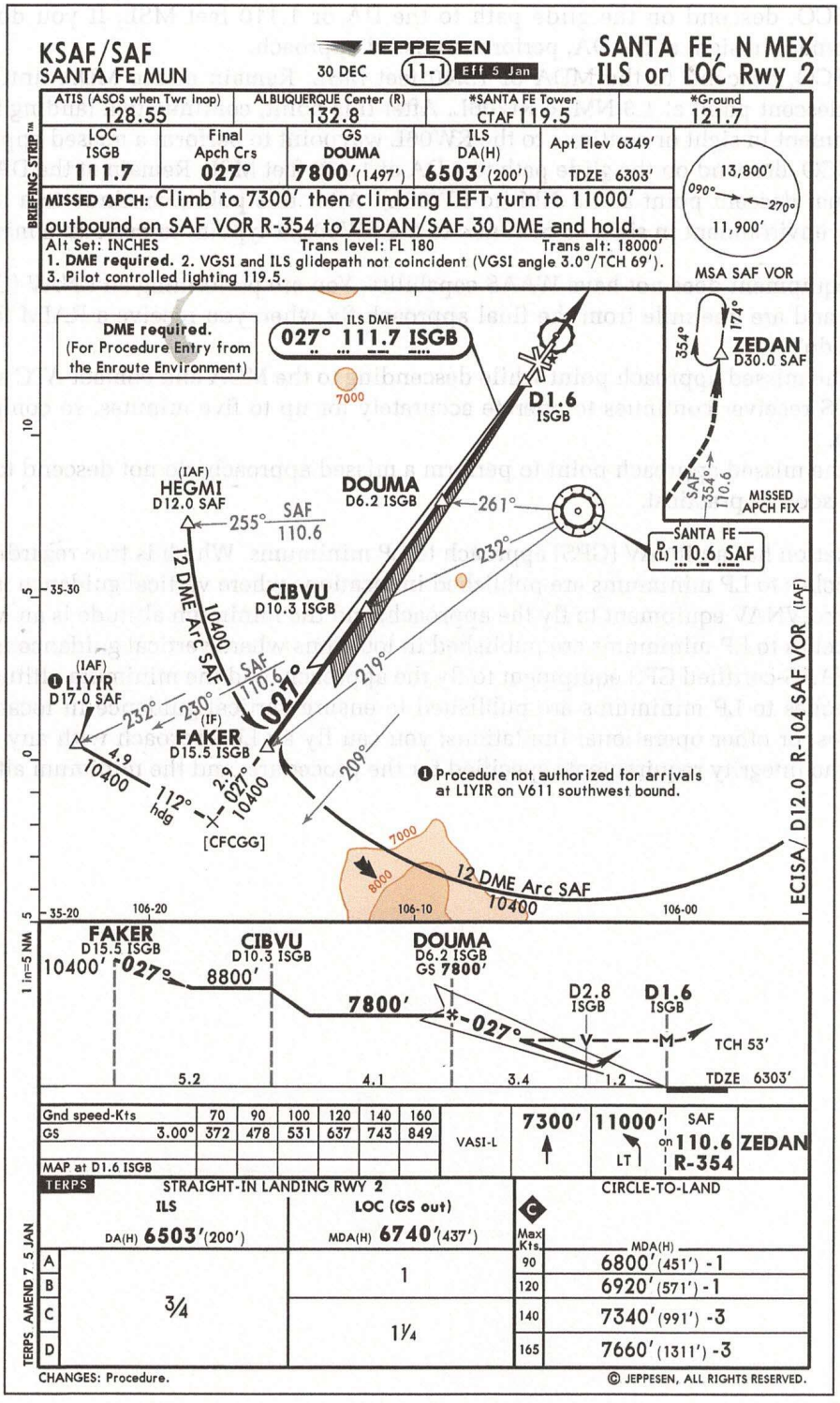
STAGE II

26. Your GPS equipment does not have baro-VNAV or WAAS capability. You are flying the RNAV (GPS) approach to Runway 6L. Which is a correct procedure for flying the final approach segment?
    A. At SASCO, descend on the glide path to the DA or 1,110 feet MSL. If you do not have the runway environment in sight at the DA, perform a missed approach.
    B. At SASCO, descend to the MDA of 1,240 feet MSL. Remain at the MDA until you have passed the visual descent point at 1.3 NM to RW06L. After this point, continue to a landing if you have the runway environment in sight or continue to the RW06L waypoint to perform a missed approach.
    C. At SASCO, descend on the glide path to a DA of 1,220 feet MSL. Remain at the DA until you have passed the visual descent point at 1.3 NM (to RW06L). After this point, continue to a landing if you have the runway environment in sight or continue to the RW06L waypoint to perform a missed approach.

27. Your GPS equipment does not have WAAS capability. You are performing an RNAV (GPS) approach to LNAV minimums and are one mile from the final approach fix when you receive a RAIM failure indication. What should you do?
    A. Fly to the missed approach point while descending to the MDA and contact ATC as soon as practical.
    B. The GPS receiver continues to operate accurately for up to five minutes, so complete the approach to a landing.
    C. Fly to the missed approach point to perform a missed approach, do not descend to the MDA, and contact ATC as soon as practical.

28. Your destination has an RNAV (GPS) approach to LP minimums. Which is true regarding this procedure?
    A. Approaches to LP minimums are published in locations where vertical guidance is not feasible; you must have baro-VNAV equipment to fly the approach; and the minimum altitude is an MDA.
    B. Approaches to LP minimums are published in locations where vertical guidance is not feasible; you must have WAAS-certified GPS equipment to fly the approach; and the minimum altitude is an MDA.
    C. Approaches to LP minimums are published to ensure vertical guidance in locations with high terrain, obstacles, or other operational limitations; you can fly an LP approach with any type of equipment that meets the integrity requirements specified for the procedure; and the minimum altitude is a DA.

Refer to the ILS or LOC Rwy 2 approach chart for Santa Fe Municipal Airport to answer questions 29 and 30.

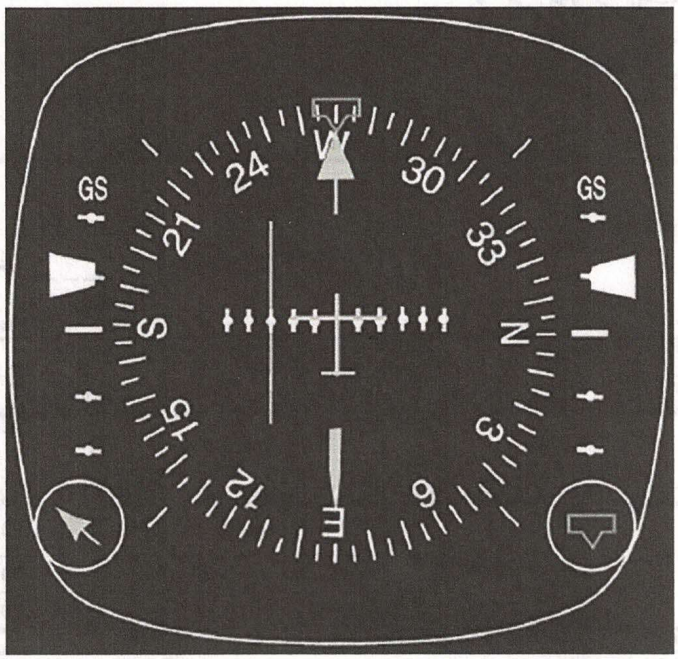


29. Which statement is true about the approach segments for the ILS or LOC Rwy 2 approach at Santa Fe Municipal?
   A. You fly the initial approach segment for the ILS or localizer approach on the 219° radial from SAF to FAKER.
   B. The intermediate approach segment for the localizer approach begins at FAKER and ends at CIBVU, the point at which you begin the final descent to the MDA.
   C. The final approach segment for the ILS approach begins where the airplane intercepts the glide slope at the minimum glide slope altitude—shown by a bend in the course line and glide slope arrow beginning at DOUMA.

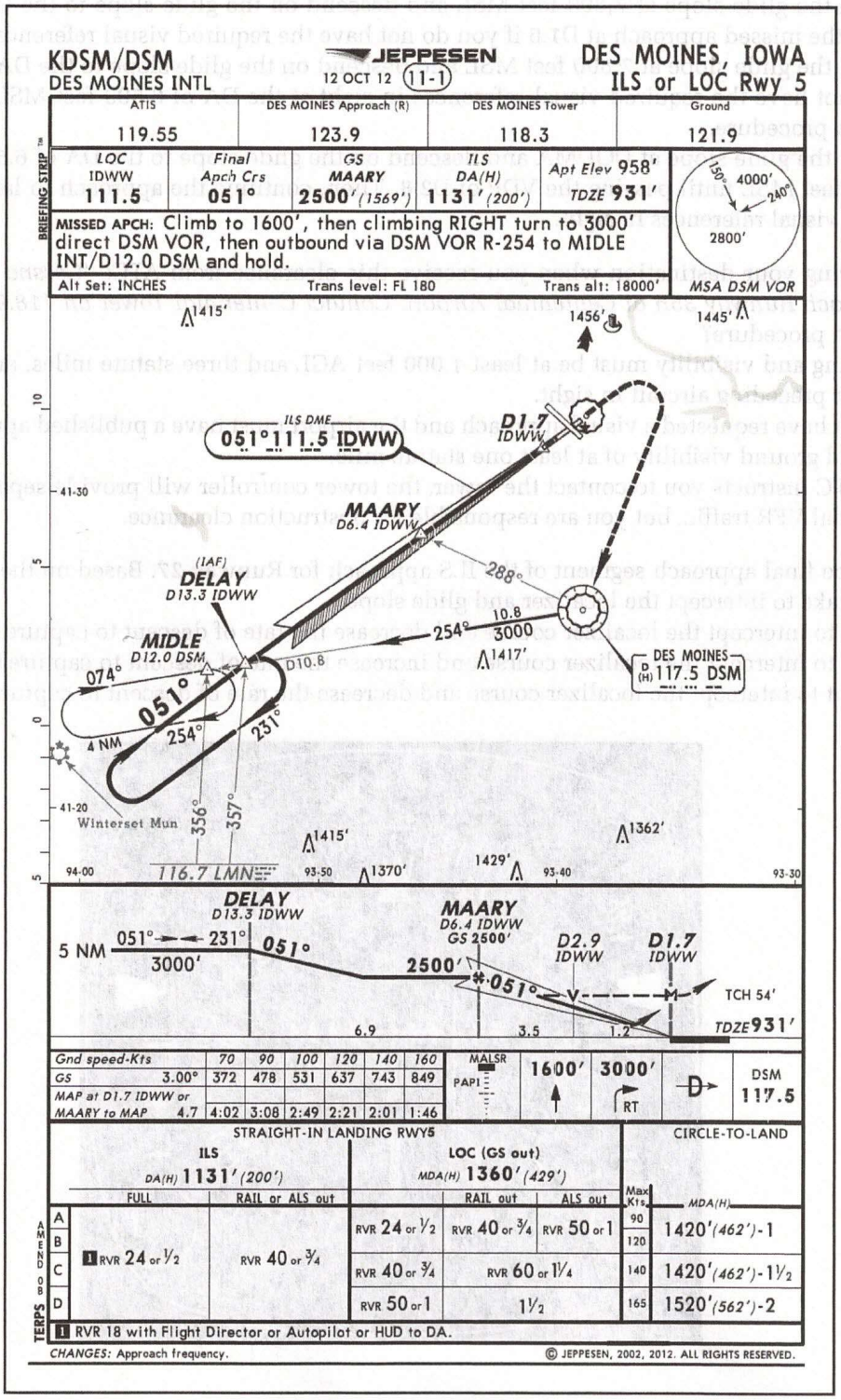
30. You are flying the ILS approach to Runway 2 at Santa Fe Municipal Airport. How do you fly the final approach segment?
    A. Intercept the glide slope at 7,800 feet MSL and descend on the glide slope to the DA of 6,503 feet MSL. Perform the missed approach at D1.6 if you do not have the required visual references in sight.
    B. Intercept the glide slope at 7,800 feet MSL and descend on the glide slope to the DA of 6,503 feet MSL. If you do not have the required visual references in sight at the DA of 6,503 feet MSL, perform the missed approach procedure.
    C. Intercept the glide slope at DOUMA and descend on the glide slope to the DA of 6,503 feet MSL. Remain at 6,503 feet MSL until passing the VDP of D2.8. Then, continue the approach to landing if you have the required visual references in sight.

31. You are nearing your destination when you receive this clearance from ATC: *"Cessna 20JA, cleared for the visual approach Runway 35R at Centennial Airport. Contact Centennial Tower on 118.9."* What is true about this approach procedure?
    A. The ceiling and visibility must be at least 1,000 feet AGL and three statute miles, and you must have the airport or preceding aircraft in sight.
    B. You must have requested a visual approach and the airport must have a published approach procedure and a reported ground visibility of at least one statute mile.
    C. When ATC instructs you to contact the tower, the tower controller will provide separation from other IFR and special VFR traffic, but you are responsible for obstruction clearance.

32. You are on the final approach segment of the ILS approach for Runway 27. Based on the HSI, what actions do you need to take to intercept the localizer and glide slope?
    A. Turn left to intercept the localizer course and decrease the rate of descent to capture the glide slope.
    B. Turn left to intercept the localizer course and increase the rate of descent to capture the glide slope.
    C. Turn right to intercept the localizer course and decrease the rate of descent to capture the glide slope.



Refer to the Jeppesen ILS or LOC Rwy 5 approach chart for Des Moines International Airport to answer questions 33 through 39.



33. You are preparing to perform the ILS Rwy 5 approach to Des Moines International Airport. You are in a category A airplane and plan to fly the approach at 90 knots. ATIS reports a ceiling of 300 feet and visibility of 1800 RVR. What information should you include in the approach overview?
    A. When approaching from the southwest, the MSA is 4,000 feet MSL.
    B. An obstacle above 1,000 feet MSL is near the departure end of the runway, and terrain above 2,000 feet MSL surrounds the airport.
    C. The ceiling is above the ILS approach minimum, and the visibility is at the required minimum provided that you use either a flight director (FD), an autopilot (AP), or a head-up display (HUD) to fly to the DA.

34. ATC advises you to expect the ILS Rwy 5 approach. As you perform the approach briefing, what can you determine about this approach procedure?
    A. The localizer frequency is 117.5, and the approach course is 051°.
    B. The final approach course is 051° and the DA is 1,131 feet MSL.
    C. Des Moines approach control is on 135.2 and the tower operates part-time on 118.3.

35. Which statement is true regarding range information for the ILS Rwy 5 approach?
    A. You should initiate a missed approach at D1.7 if you do not have the required visual references in sight.
    B. DELAY is the point at which you can expect to intercept the glide slope and MAARY is the FAF for the localizer-only approach.
    C. MAARY is the FAF for the localizer-only approach and the point at which you can expect to intercept the glide slope at 2,500 feet MSL.

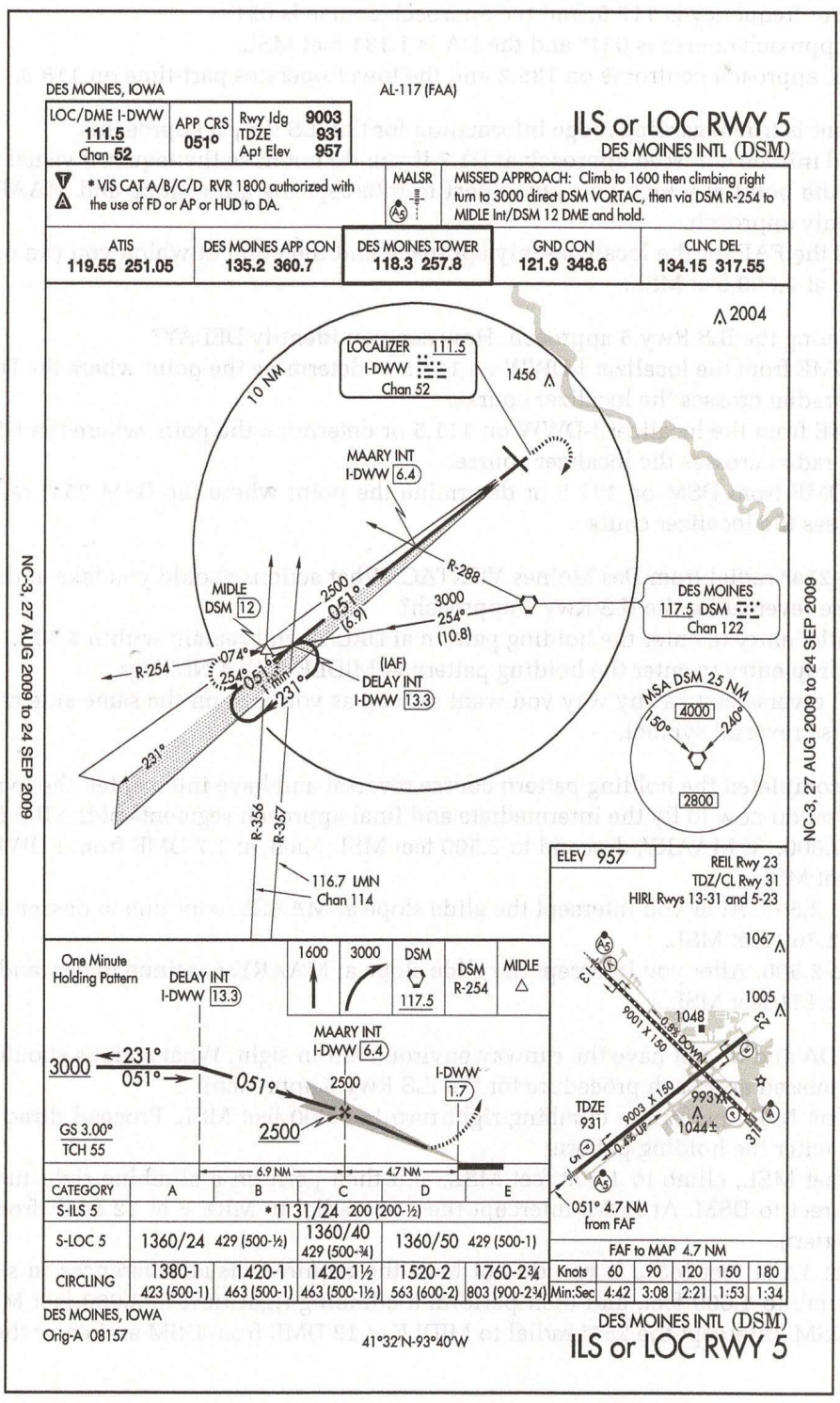
36. You are performing the ILS Rwy 5 approach. How can you identify DELAY?
    A. Use 13.3 DME from the localizer I-DWW on 111.5 or determine the point where the DSM 254° radial or the LMN 357° radial crosses the localizer course.
    B. Use 12 DME from the localizer I-DWW on 111.5 or determine the point where the DSM 254° radial or the LMN 356° radial crosses the localizer course.
    C. Use 13.3 DME from DSM on 117.5 or determine the point where the DSM 254° radial or the LMN 357° radial crosses the localizer course.

37. You are on the 254° radial from Des Moines VORTAC. What actions should you take at the initial approach fix to fly the course reversal for the ILS Rwy 5 approach?
    A. Use a parallel entry to enter the holding pattern at DELAY and remain within 5 NM.
    B. Use a teardrop entry to enter the holding pattern at MIDLE with 4 NM legs.
    C. At DELAY, reverse course any way you want as long as you turn on the same side of the approach course as the course reversal symbol.

38. You have just completed the holding pattern course reversal and have intercepted the localizer course of 051°. What should you do now to fly the intermediate and final approach segments of the ILS Rwy 5 approach?
    A. Maintain 3,000. At MAARY, descend to 2,500 feet MSL; then, at 1.7 DME from I-DWW, descend to the DA of 1,131 feet MSL.
    B. Descend to 2,500. After you intercept the glide slope at MAARY, continue to descend on the glide slope to the DA of 1,360 feet MSL.
    C. Descend to 2,500. After you intercept the glide slope at MAARY, continue to descend on the glide slope to the DA of 1,131 feet MSL.

39. You reach the DA and do not have the runway environment in sight. What actions should you take to perform the published missed approach procedure for the ILS Rwy 5 approach?
    A. At 1,131 feet MSL, perform a climbing right turn to 3,000 feet MSL. Proceed direct to DSM on the 254° radial and enter the holding pattern.
    B. At 1,131 feet MSL, climb to 1,600 feet MSL, and then perform a climbing right turn to 3,000 feet MSL. Proceed direct to DSM. At DSM, intercept the 254° radial to MIDLE at 12 DME from DSM and enter the holding pattern.
    C. Level off at 1,131 feet MSL. If you do not have the required visual references in sight at 1.7 DME from I-DWW, climb to 1,600 feet, and then perform a climbing right turn to 3,000 feet MSL. Proceed direct to DSM. At DSM, intercept the 254° radial to MIDLE at 12 DME from DSM and enter the holding pattern.

Refer to the FAA ILS or LOC RWY 5 approach chart for Des Moines International Airport to answer questions 40, 41, and 42.

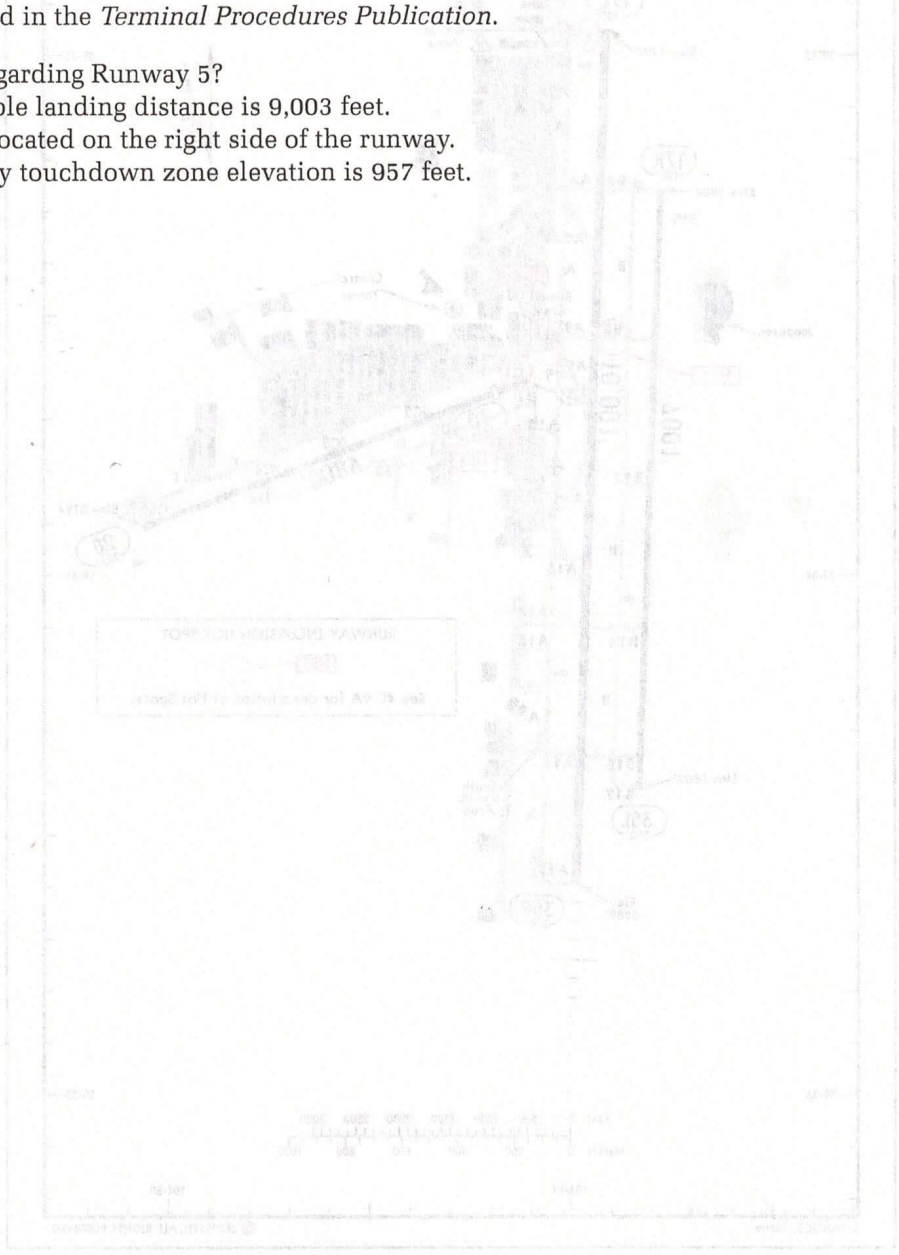


40. You are in a category A airplane operating at 90 knots. ATC informs you that the glide slope is out of service and clears you for the localizer approach to Runway 5. What is true about performing this approach procedure at 90 knots?
    A. Descend to a DA of 1,360 feet MSL. Upon reaching the DA, perform a missed approach If you do not have the required visual references in sight.
    B. Descend to an MDA of 1,360 feet MSL. If you do not have the required visual references in sight, perform a missed approach at D1.7 I-DWW or 3:08 minutes from MAARY.
    C. You must refer to the Inoperative Components or Visual Aids table in the *Terminal Procedures Publication* to determine the appropriate corrections to your landing minimums.

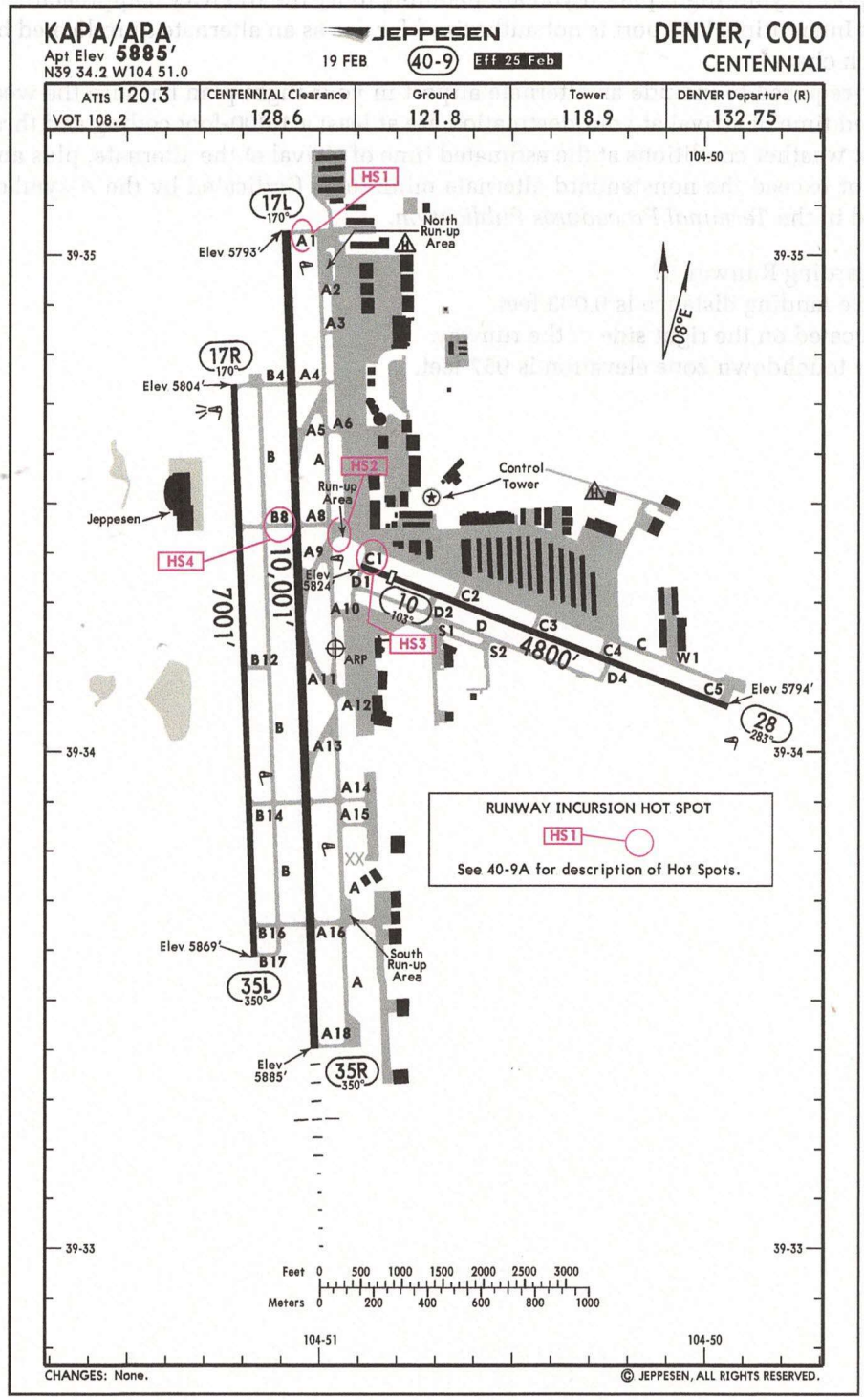
STAGE II

41. You are planning to arrive at your destination at 1830Z. The weather forecast for 1800Z at the airport is for a 1,200-foot ceiling and three miles visibility. What is true about including Des Moines International Airport as an alternate airport in your flight plan if you are planning to fly the ILS Rwy 5 approach?
    A. Des Moines International Airport is not authorized for use as an alternate as indicated by the A-symbol on the approach chart.
    B. You are not required to include an alternate airport in your flight plan because the weather conditions at the estimated time of arrival at your destination are at least a 1,000-foot ceiling and three miles visibility.
    C. The forecast weather conditions at the estimated time of arrival at the alternate, plus and minus one hour, must meet or exceed the nonstandard alternate minimums (indicated by the A-symbol on the approach chart) found in the *Terminal Procedures Publication*.

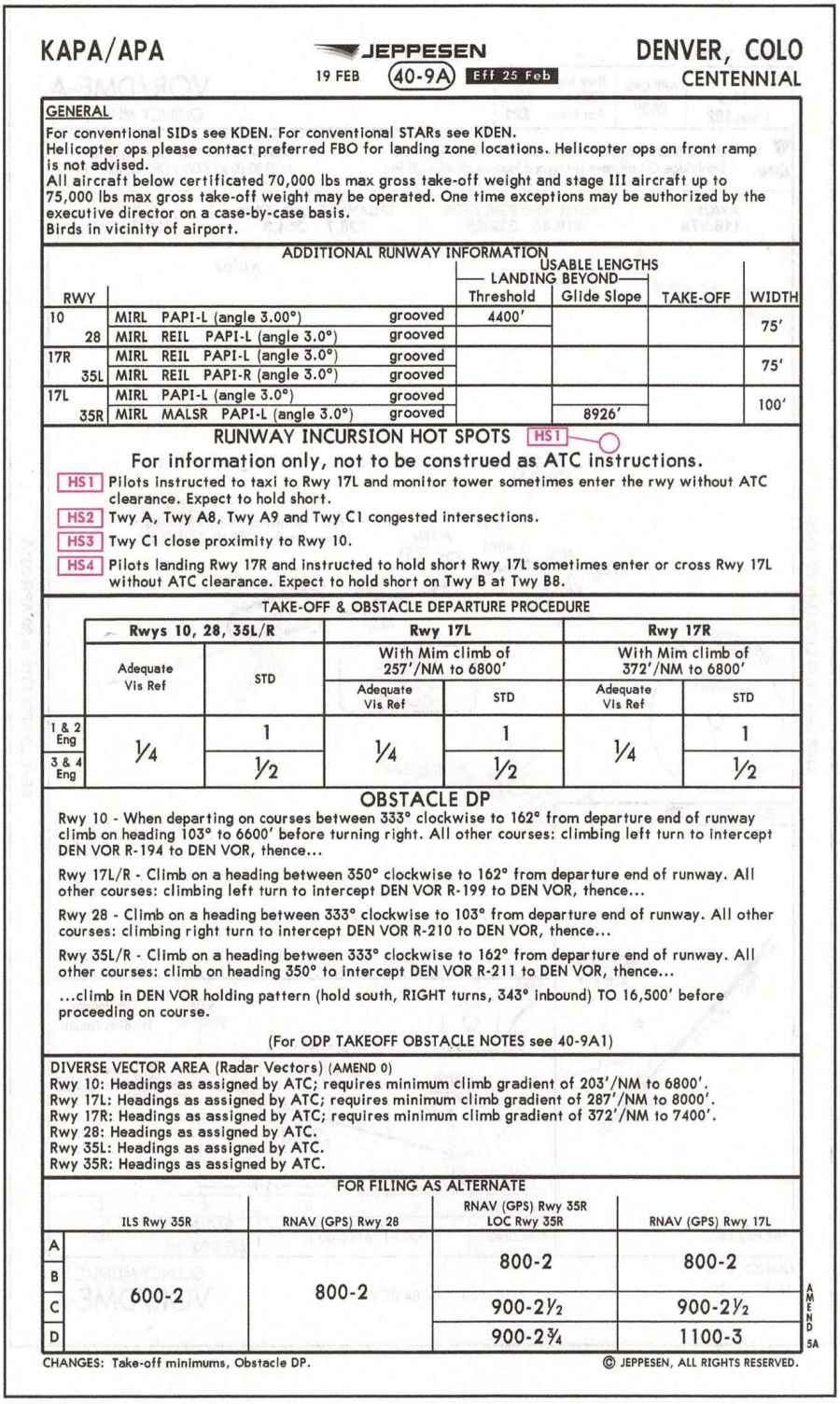
42. What is true regarding Runway 5?
    A. The available landing distance is 9,003 feet.
    B. A PAPI is located on the right side of the runway.
    C. The runway touchdown zone elevation is 957 feet.



Refer to the Centennial Airport chart to answer question 43.



STAGE II



KAPA/APA — JEPPESEN — DENVER, COLO
19 FEB (40-9A) Eff 25 Feb — CENTENNIAL

GENERAL

For conventional SIDs see KDEN. For conventional STARs see KDEN.
Helicopter ops please contact preferred FBO for landing zone locations. Helicopter ops on front ramp is not advised.
All aircraft below certificated 70,000 lbs max gross take-off weight and stage III aircraft up to 75,000 lbs max gross take-off weight may be operated. One time exceptions may be authorized by the executive director on a case-by-case basis.
Birds in vicinity of airport.

ADDITIONAL RUNWAY INFORMATION

RWY			USABLE LENGTHS — LANDING BEYOND — Threshold	Glide Slope	TAKE-OFF	WIDTH
10	MIRL PAPI-L (angle 3.00°)	grooved	4400′			75′
28	MIRL REIL PAPI-L (angle 3.0°)	grooved				
17R	MIRL REIL PAPI-L (angle 3.0°)	grooved				75′
35L	MIRL REIL PAPI-R (angle 3.0°)	grooved				
17L	MIRL PAPI-L (angle 3.0°)	grooved				100′
35R	MIRL MALSR PAPI-L (angle 3.0°)	grooved		8926′		

RUNWAY INCURSION HOT SPOTS HS1

For information only, not to be construed as ATC instructions.

HS1 Pilots instructed to taxi to Rwy 17L and monitor tower sometimes enter the rwy without ATC clearance. Expect to hold short.
HS2 Twy A, Twy A8, Twy A9 and Twy C1 congested intersections.
HS3 Twy C1 close proximity to Rwy 10.
HS4 Pilots landing Rwy 17R and instructed to hold short Rwy 17L sometimes enter or cross Rwy 17L without ATC clearance. Expect to hold short on Twy B at Twy B8.

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

	Rwys 10, 28, 35L/R		Rwy 17L		Rwy 17R	
	Adequate Vis Ref	STD	With Mim climb of 257′/NM to 6800′ Adequate Vis Ref	STD	With Mim climb of 372′/NM to 6800′ Adequate Vis Ref	STD
1 & 2 Eng	1/4	1	1/4	1	1/4	1
3 & 4 Eng		1/2		1/2		1/2

OBSTACLE DP

Rwy 10 - When departing on courses between 333° clockwise to 162° from departure end of runway climb on heading 103° to 6600′ before turning right. All other courses: climbing left turn to intercept DEN VOR R-194 to DEN VOR, thence...

Rwy 17L/R - Climb on a heading between 350° clockwise to 162° from departure end of runway. All other courses: climbing left turn to intercept DEN VOR R-199 to DEN VOR, thence...

Rwy 28 - Climb on a heading between 333° clockwise to 103° from departure end of runway. All other courses: climbing right turn to intercept DEN VOR R-210 to DEN VOR, thence...

Rwy 35L/R - Climb on a heading between 333° clockwise to 162° from departure end of runway. All other courses: climb on heading 350° to intercept DEN VOR R-211 to DEN VOR, thence...

...climb in DEN VOR holding pattern (hold south, RIGHT turns, 343° inbound) TO 16,500′ before proceeding on course.

(For ODP TAKEOFF OBSTACLE NOTES see 40-9A1)

DIVERSE VECTOR AREA (Radar Vectors) (AMEND 0)
Rwy 10: Headings as assigned by ATC; requires minimum climb gradient of 203′/NM to 6800′.
Rwy 17L: Headings as assigned by ATC; requires minimum climb gradient of 287′/NM to 8000′.
Rwy 17R: Headings as assigned by ATC; requires minimum climb gradient of 372′/NM to 7400′.
Rwy 28: Headings as assigned by ATC.
Rwy 35L: Headings as assigned by ATC.
Rwy 35R: Headings as assigned by ATC.

FOR FILING AS ALTERNATE

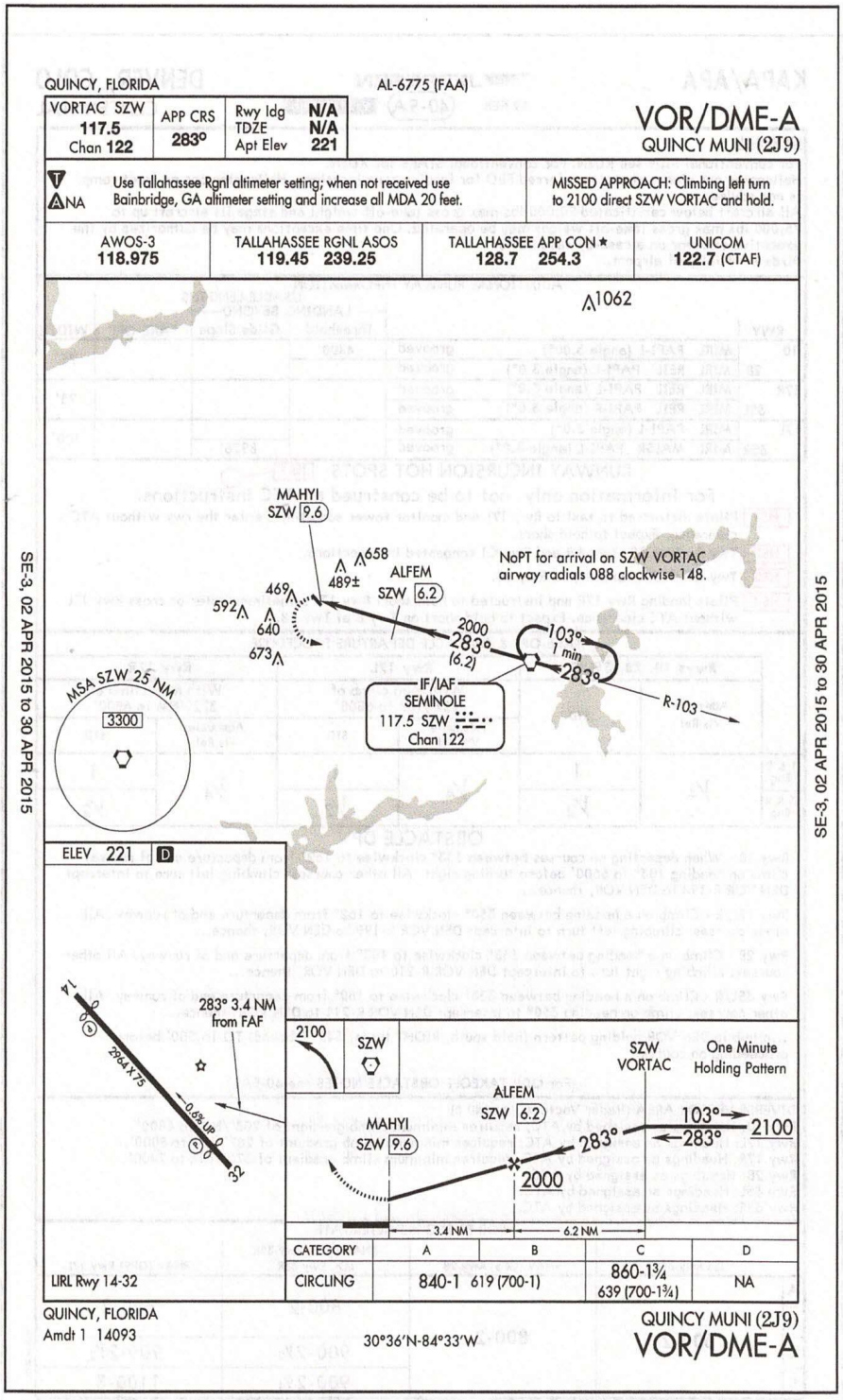
	ILS Rwy 35R	RNAV (GPS) Rwy 28	RNAV (GPS) Rwy 35R LOC Rwy 35R	RNAV (GPS) Rwy 17L
A	600-2	800-2	800-2	800-2
B				
C			900-2½	900-2½
D			900-2¾	1100-3

AMEND 5A

CHANGES: Take-off minimums, Obstacle DP.

43. Your destination is Centennial Airport in Denver, Colorado. What information can you obtain from reviewing the airport chart?
    A. Runway 17L/35R is 7,001 feet long.
    B. There is a runway incursion hot spot located near the approach end of Runway 17L at A1.
    C. Runway 35R has medium intensity runway lights, runway end identifier lights, and a PAPI on the right side of the runway.

Refer to the VOR/DME-A approach chart for Quincy Municipal Airport to answer questions 44, 45, and 46.



44. You are preparing to fly the VOR/DME-A approach at Quincy Municipal Airport. You are in a category A airplane and plan to fly the approach at 100 knots. You are unable to receive the Tallahassee Regional Airport altimeter setting, so you are using the Bainbridge, GA altimeter setting. What are some elements to consider as you perform an approach overview?
   A. Your landing minimums are an MDA of 840 feet MSL and visibility of one mile.
   B. Runways 14 and 32 have displaced thresholds and pilot-controlled approach lighting systems.
   C. Because the approach course is not aligned within 30 degrees of the runway, the approach has only circling minimums.

45. You are cleared for the VOR/DME-A approach at Quincy Municipal Airport. You are at 2,100 feet MSL, approaching Seminole VORTAC (SZW) from the northwest on the 330° radial. What actions should you take when you reach SZW?
    A. Turn to a heading of 103° for a parallel entry to the one-minute holding pattern course reversal. After you return to SZW in the hold and intercept the 283° course, descend to 2,000 feet MSL.
    B. Reverse course any way that you want as long as you make the turn on the same side of the approach course as the symbol. After you reverse course, return to SZW, and intercept the 283° course.
    C. Turn to a heading of 103° for a parallel entry to the one-minute holding pattern course reversal. Perform at least two circuits of the holding pattern before you intercept the 283° course, and descend to 840 feet MSL.

46. After completing the VOR/DME-A approach at Quincy Municipal Airport, you are circling to land on Runway 14 when you lose sight of the runway environment. What actions should you take?
    A. Descend below the MDA to reestablish visual contact with the runway environment, and begin to configure the airplane for landing.
    B. Initiate a missed approach by making a climbing turn toward Runway 14 to become established on the missed approach course, which is a climbing left turn to 2,100 feet MSL direct to SZW, and then hold.
    C. Initiate a missed approach by maintaining 840 feet MSL while turning toward Runway 14 to become established on the missed approach course, which is a climbing left turn to 2,000 feet MSL direct to SZW, and then hold.

EXAM ANSWER FORM

DATE OF TEST			TEST TITLE OR NO.	TEST GRADE
MONTH	DAY	YEAR		

LAST NAME FIRST NAME

INSTRUCTIONS FOR MARKING THE ANSWER FORM. Completely darken only circle for each. DO NOT USE (X) OR (✓)Use black lead pencil. To make corrections completely erase incorrect response. Questions are arranged in vertical sequence as indicated by the arrow.

1	Ⓐ	Ⓑ	Ⓒ	26	Ⓐ	Ⓑ	Ⓒ	51	Ⓐ	Ⓑ	Ⓒ	76	Ⓐ	Ⓑ	Ⓒ
2	Ⓐ	Ⓑ	Ⓒ	27	Ⓐ	Ⓑ	Ⓒ	52	Ⓐ	Ⓑ	Ⓒ	77	Ⓐ	Ⓑ	Ⓒ
3	Ⓐ	Ⓑ	Ⓒ	28	Ⓐ	Ⓑ	Ⓒ	53	Ⓐ	Ⓑ	Ⓒ	78	Ⓐ	Ⓑ	Ⓒ
4	Ⓐ	Ⓑ	Ⓒ	29	Ⓐ	Ⓑ	Ⓒ	54	Ⓐ	Ⓑ	Ⓒ	79	Ⓐ	Ⓑ	Ⓒ
5	Ⓐ	Ⓑ	Ⓒ	30	Ⓐ	Ⓑ	Ⓒ	55	Ⓐ	Ⓑ	Ⓒ	80	Ⓐ	Ⓑ	Ⓒ
6	Ⓐ	Ⓑ	Ⓒ	31	Ⓐ	Ⓑ	Ⓒ	56	Ⓐ	Ⓑ	Ⓒ	81	Ⓐ	Ⓑ	Ⓒ
7	Ⓐ	Ⓑ	Ⓒ	32	Ⓐ	Ⓑ	Ⓒ	57	Ⓐ	Ⓑ	Ⓒ	82	Ⓐ	Ⓑ	Ⓒ
8	Ⓐ	Ⓑ	Ⓒ	33	Ⓐ	Ⓑ	Ⓒ	58	Ⓐ	Ⓑ	Ⓒ	83	Ⓐ	Ⓑ	Ⓒ
9	Ⓐ	Ⓑ	Ⓒ	34	Ⓐ	Ⓑ	Ⓒ	59	Ⓐ	Ⓑ	Ⓒ	84	Ⓐ	Ⓑ	Ⓒ
10	Ⓐ	Ⓑ	Ⓒ	35	Ⓐ	Ⓑ	Ⓒ	60	Ⓐ	Ⓑ	Ⓒ	85	Ⓐ	Ⓑ	Ⓒ
11	Ⓐ	Ⓑ	Ⓒ	36	Ⓐ	Ⓑ	Ⓒ	61	Ⓐ	Ⓑ	Ⓒ	86	Ⓐ	Ⓑ	Ⓒ
12	Ⓐ	Ⓑ	Ⓒ	37	Ⓐ	Ⓑ	Ⓒ	62	Ⓐ	Ⓑ	Ⓒ	87	Ⓐ	Ⓑ	Ⓒ
13	Ⓐ	Ⓑ	Ⓒ	38	Ⓐ	Ⓑ	Ⓒ	63	Ⓐ	Ⓑ	Ⓒ	88	Ⓐ	Ⓑ	Ⓒ
14	Ⓐ	Ⓑ	Ⓒ	39	Ⓐ	Ⓑ	Ⓒ	64	Ⓐ	Ⓑ	Ⓒ	89	Ⓐ	Ⓑ	Ⓒ
15	Ⓐ	Ⓑ	Ⓒ	40	Ⓐ	Ⓑ	Ⓒ	65	Ⓐ	Ⓑ	Ⓒ	90	Ⓐ	Ⓑ	Ⓒ
16	Ⓐ	Ⓑ	Ⓒ	41	Ⓐ	Ⓑ	Ⓒ	66	Ⓐ	Ⓑ	Ⓒ	91	Ⓐ	Ⓑ	Ⓒ
17	Ⓐ	Ⓑ	Ⓒ	42	Ⓐ	Ⓑ	Ⓒ	67	Ⓐ	Ⓑ	Ⓒ	92	Ⓐ	Ⓑ	Ⓒ
18	Ⓐ	Ⓑ	Ⓒ	43	Ⓐ	Ⓑ	Ⓒ	68	Ⓐ	Ⓑ	Ⓒ	93	Ⓐ	Ⓑ	Ⓒ
19	Ⓐ	Ⓑ	Ⓒ	44	Ⓐ	Ⓑ	Ⓒ	69	Ⓐ	Ⓑ	Ⓒ	94	Ⓐ	Ⓑ	Ⓒ
20	Ⓐ	Ⓑ	Ⓒ	45	Ⓐ	Ⓑ	Ⓒ	70	Ⓐ	Ⓑ	Ⓒ	95	Ⓐ	Ⓑ	Ⓒ
21	Ⓐ	Ⓑ	Ⓒ	46	Ⓐ	Ⓑ	Ⓒ	71	Ⓐ	Ⓑ	Ⓒ	96	Ⓐ	Ⓑ	Ⓒ
22	Ⓐ	Ⓑ	Ⓒ	47	Ⓐ	Ⓑ	Ⓒ	72	Ⓐ	Ⓑ	Ⓒ	97	Ⓐ	Ⓑ	Ⓒ
23	Ⓐ	Ⓑ	Ⓒ	48	Ⓐ	Ⓑ	Ⓒ	73	Ⓐ	Ⓑ	Ⓒ	98	Ⓐ	Ⓑ	Ⓒ
24	Ⓐ	Ⓑ	Ⓒ	49	Ⓐ	Ⓑ	Ⓒ	74	Ⓐ	Ⓑ	Ⓒ	99	Ⓐ	Ⓑ	Ⓒ
25	Ⓐ	Ⓑ	Ⓒ	50	Ⓐ	Ⓑ	Ⓒ	75	Ⓐ	Ⓑ	Ⓒ	100	Ⓐ	Ⓑ	Ⓒ