Welcome to Orange County Flight Center

The POH Summary for the airplane you'll be flying is attached. Please study it and then review areas of concern using the Pilot's Operating Handbook/Airplane Flight Manual and the related avionics pilot guides before you meet with your instructor for the airplane checkout. You can download the avionics pilot guides from the manufacturer's website.

We have taken this reasonable approach to airplane checkouts in order to save you time and to ensure that the material you study includes all of the airplane's nuances—elements that are often missed when one quickly reviews the POH or AFM, particularly for Technically Advanced Aircraft (TAA) that have serial-number based and POH/AFM-Supplement based information.

During the checkout, your instructor will ask you questions about the airplane in order to ensure that you have in fact acquired the proper knowledge. Your checkout will be complete after the instructor signs-off your dispatch record and you sign a statement acknowledging that you have studied this POH Summary and resolved areas of concern using the airplane's POH/AFM and avionics pilot guides.

Fly smart, fly safe,

The OCFC team

Insights from Ralph Butcher, OCFC chief flight instructor:

"Technology simplifies that which is complicated, and complicates that which was simple." You'll quickly realize the validity of that old, familiar quote when you fly a TAA.

The Cirrus, as with all fiber-composite airplanes and most TAA, has new proficiency demands for flying and for cockpit management. The most critical flight element is landing.

During the landing flare, you must stop increasing the pitch attitude as soon as you establish the liftoff attitude that occurs during takeoff—where the nose wheel is slightly higher than the main wheels—and let the airplane settle onto the runway, which will result in a smooth landing. *Do not* continue to increase pitch attitude and hold the airplane off the runway as you have done previously in conventional airplanes. Due to excellent cockpit visibility during landing, students tend to flare excessively and the airplane stops descending. When speed decreases somewhat, the airplane will drop rapidly toward the runway, and the student will quickly apply aft elevator input to stop the descent. That does nothing. The airplane hits hard, the main landing gear flexes outward, and the tail hits the ground, which results in expensive, structural damage.

Another problem will occur if the firewall is damaged due to landing on the nose wheel. The airplane is totaled. It cannot be repaired. Consequently, the nose-wheel strut is designed to break in that situation so that the firewall is not damaged. However, because of sudden engine stoppage, an engine overhaul is required, but that expense is far less than aircraft replacement.

"Compared to conventional airplanes, the Cirrus does not descend very well." You'll frequently hear that statement, which is totally false. All fiber-composite airplanes from the Diamond Katana to the Airbus have minimum drag. Here's the trick: When you're high and need to descend, level off and set minimum power, decelerate, and extend full flaps. Now decrease pitch attitude significantly and fly about 10 knots below V_{FE} in order to avoid an inadvertent flap overspeed. The airplane will descend rapidly. When slightly below your desired glidepath, level off, and decelerate as you return to it.

The parachute does not mean that you can operate contrary to the safety rules used in conventional airplanes (e.g. flight over mountainous terrain, water, etc.) I would use the parachute only if I was in a midair collision and the airplane was unflyable. Would you like to make a parachute landing and drift into power lines—impossible to see when at altitude—and have the chute collapse? When the parachute does the flying, you have absolutely no control over your destiny.

Fixed gear airplanes usually flip over during a forced landing on water, a terrible situation for evacuation. One pilot did use the parachute when over water, but the impact was so hard he broke his back. The landing gear will not help to absorb the impact force of a parachute assisted water landing.

You must know every function of the airplane's avionics systems, and you must use them as tools not crutches. A grave error is committed when a pilot thinks that an autopilot can compensate for poor flying skills. That assumption has caused many fatal accidents.

When hand flying the airplane, use only the PFD, the MFD's moving map, and the frequency selectors for communication and navigation. To expand beyond those items, use the autopilot and keep your eyes outside the cockpit as much as possible.

Do not attempt to master the intricacies of the *glass cockpi*t all at once. That can be frustrating. Master the basic steps for using the OBS and LEG modes, entering a flight plan, navigating from one point to another, and diverting to a nearest airport. Then expand into other areas of interest.

Are you instrument rated? Cirrus recommends (as does OCFC) at least 100 hours in the airplane before you fly IFR in less than marginal VFR conditions—below 3,000/5. They also recommend an Instrument Proficiency Check with a flight instructor every six months and at least three instrument approaches in the airplane every sixty days.

OCFC requires 60 currency in the Cirrus for all rental pilots. For authorization to fly IFR, you must receive an Instrument Proficiency Check in the Cirrus with an OCFC instructor .

CIRRUS SR-22 G3 TURBO
N726SR, Serial No. 2533
POH SUMMARY

(revised 05/10/2009)

General, POH Section 1 and Section 9, Supplements: G-3 Wing supplement—questions prefaced with (G3), and Tornado Alley supplement–questions prefaced with (T)

1. What is the wing span of the aircraft? 38.3 feet.
2. How much clearance is between the tip of the propeller and the ground? 7 inches.
3. What is your engine model? Teledyne Continental IO-550-N.
4. What is the horsepower rating? 310 hp@2700 rpm.
5. (G3) Fuel capacity - Total: 94.5 gallons. Useable: 92.0 gallons, 60 gallons when at the tabs.
6. Oil sump capacity: 8 U.S. Quarts.
7. Oil grade - Above 40˚F: SAE 50. Below 40˚F SAE 30.
8. What is the certified maximum takeoff weight of the aircraft? 3400 lbs.
9. Maximum baggage compartment loading? 130 lbs.
10. Basic empty weight? 2397 lbs.
11. Maximum useful load? 1150 lbs. *Note: Gross weight, 3400 lbs., minus the maximum useful load 1150 lbs., equals 2250 lbs., which is below the airplane's empty weight. Consequently, it would be impossible to exceed this restriction*.
12. (G3) Payload with full fuel 451 lbs.

Limitations, POH Section 2 and Section 9, Supplements: G-3 Wing supplement (G3) and Tornado Alley supplement (T)

13. (T) What are the following airspeeds?

V_{NE}	(T) 200 KIAS up to 17,500 ft, 170 KIAS up to 25,000 ft.
V_{NO}	(T) 177 KIAS up to 17,500 ft, 151 KIAS up to 25,000 ft.
V_O	133 KIAS at 3400 lbs. max gross weight.
V_{FE}	119 KIAS for 50% flaps, 104 KIAS for 100% flaps.
V_{PD}	133 KIAS.
V_{SO}	(T) 62 KIAS stall speed with flaps 100%, most fwd C.G.
V_S	(T) 73 KIAS stall speed with flaps up, most fwd C.G.

14. What is the significance of V_{NO}? Should not be exceeded unless in smooth air and then only with caution.

15. What is V_O? Maneuvering speed (called V_A for other airplanes).

16. What is V_{PD}? Cirrus Airframe Parachute System (CAPS) deployment speed.

17. What engine is used? Teledyne Continental IO-550-N.

18. What is the power rating? 310 hp @ 2700 rpm.

19. What is the maximum rpm? 2700 rpm.

20. What is the propeller type? MTV-9-D/198-52.

21. What is the maximum takeoff weight? 3400 lbs.

22. What is the maximum weight in the baggage compartment? 130 lbs.

23. Are aerobatic maneuvers and spins allowed? Never.

24. Allowable flight load factors? Flaps retracted: +3.8g, -1.9g, extended: +1.9g, -0g.

25. Is Alternator 2 and Battery 2 required for day and night VFR flights? No.

26. What three annunciator lights are are always required? Low Volts, Alternator 1, and Alternator 2. *Note: Alt 2 is not required for VFR, but annunciator is. Go figure!*

27. Can you fly VFR with one of the strobe lights out? Yes, 2 are required.

28. What flights requires a magnetic compass? All VFR, IFR, day, and night flights.

29. Can the airplane be flown into known icing conditions? Absolutely not.

30. (G3) Maximum demonstrated crosswind velocity? Takeoff or landing: 20 knots.

31. What power setting should be used for taxiing? Minimum power to maintain taxi speed. *Note: dragging the brakes increases brake temperature, which will drastically increase your stopping distance during an aborted takeoff.*

32. Approved fuel? 100LL (blue) or 100 (Green).

33. Maximum fuel imbalance between fuel tanks? 10 U.S. Gallons.

34. (T) Fuel pump must be set to BOOST for? Takeoff, climb, landing, when switching fuel tanks, and for the first 30 minutes of cruise flight.

35. Must the Avidyne PFD and MFD be available to the pilot in flight? Yes.

36. Autopilot operation is prohibited above what speed? 185 KIAS.

37. When must the autopilot be disengaged? Takeoff, missed approach, go-around, balked landing, landing, and when flaps are extended more than 50%.

38. Is there a limitation regarding the use of autopilot and flaps? Yes, if the autopilot and altitude hold are on, minimum speed is 95 KIAS. If 50% flaps are extended, speed can be reduced further.

39. Must the autopilot be disengaged in turbulence? Yes, if moderate or severe.

40. What is the minimum altitude for autopilot engagement? 400 ft. agl.

41. When must the autopilot be disengaged during non-precision and precision instrument approach? Non-precision: 100 ft. below MDA. Precision: at DA.

42. What is the maximum crosswind allowed for autopilot operation between the outer marker and the missed approach point? 12 knots.

43. What is the minimum distance for an autopilot intercept of a localizer? At least 5 miles outside the outer marker.

44. Can the flap configuration be changed during an autopilot-coupled approach? No.

45. Is the use of a child safety seat permitted? No, it is prohibited with the inflatable restraint system.

46. Flap limitations? Takeoff: Up (0%) or 50%. Landing: 0%, 50%, or 100%.

47. What color can you have the airplane painted? Only as specified by Cirrus in order to ensure that the composite structure does not exceed 150˚F.

48. Is smoking permitted in the airplane? Never.

49. (T) What is the maximum Turbocharger Inlet Temperature (TIT)? 1750˚F.

50. (T) What is the normal fuel flow range and the maximum? 10 to 36 gph, 39 gph max.

51. (T) What is the normal manifold pressure range and the maximum? 15.0 to 29.6 in. Hg., 32.0 in. Hg. max.

52. (T) Maximum takeoff altitude? 10,000 feet MSL.

53. (T) Maximum operating altitude? 25,000 feet MSL.

54. (T) Maximum altitude for flap extension? 17,500 feet MSL.

Emergency Procedures, POH Section 3 and Section 9, Supplements: G-3 Wing supplement (G3) and Tornado Alley supplement (T)

55. Best glide speeds? 88 KIAS at 3400 lbs, 87 KIAS at 2900 lbs.

56. Is it possible to gain some additional glide distance? Yes, move the power lever to idle and increase speed 5 to 10 knots.

57. Engine out emergency landing speeds? 90 KIAS flaps up, 85 KIAS flaps 50%, 80 KIAS flaps 100%.

58. What is the aircraft's glide ratio? 9.6:1.

59. What is your best glide distance if you were at 6,000' AGL? 9.5 nm.

60. Engine induction-system fire during start procedure: Mixture cutoff, fuel pump off, fuel selector off, power lever full forward, engage starter.

61. What procedure do you follow after engine failure? The glide attitude that will generate the best glide speed, mixture as required, switch fuel tanks, fuel pump on BOOST, alternate induction air on, and ignition switch on BOTH.

62. If an engine failure occurred over water, should you use the CAPS? Yes, according to the AFM. *Note: One pilot did that and broke his back on the landing due to the impact force. The landing gear will not help dissipate the deceleration force during a water landing like it does when over land.*

63. How can you tell if the power lever linkage failed, and what should you do? The engine will not respond to power lever control movements. Use power available and flaps to safely land the airplane; use mixture control to stop the engine when required in order to make a power-off approach and landing.

64. What are the three checklists for propeller system emergencies? Propeller Governor Failure— rpm will not increase, Propeller Governor Failure—propeller overspeeds or will not decrease, and Power Lever Linkage Failure.

65. What is the basic rule regarding CAPS deployment? CAPS should only be activated when any other means of handling the emergency would not protect the occupants from serious injury.

66. What would a fully stabilized CAPS landing feel like? Jumping off a 13 foot wall.

67. What is the activation procedure for a CAPS deployment? Maximum airspeed 133 KIAS. Pull the activation T-handle from its holder. Clasp both hands around the handle and pull straight down in a strong, steady, and continuous motion. Maintain maximum pull force until the rocket activates. Pull forces up to, or exceeding, 45 pounds may be required. Bending of the handle-housing mount is to be expected.

68. What is the emergency landing body position during a CAPS deployment? Place both hands on your lap, clasping one wrist with the opposite hand, and hold your upper torso erect and against the seat back.

69. (T) What do you do when an unexpected loss of manifold pressure occurs? Adjust mixture so that EGTs are between 1300 and 1400˚F. This condition may present an immediate hazard including fire, so reduce power to the minimum power setting required for continued flight to a suitable landing. Descend to the minimum safe altitude from which a landing may be most safely and expeditiously accomplished. Declare an emergency.

70. (T) What precaution occurs with respect to deploying CAPS at high altitude? Increased altitude increases TAS and parachute inflation loads. If possible slow to the minimum airspeed possible prior to deploying CAPS.

71. (T) Engine failure in flight when retarding power lever to idle. What do you do?

    Below 18,000 feet, retarding the power lever to idle at or near a full rich mixture setting may cause engine combustion to cease, depending on the position of the fuel pump and altitude. Advancing the throttle should cause resumption of normal engine operation.

    Above 18,000 feet, manifold pressure should be maintained at or above 15” Hg (bottom of green arc on manifold pressure gage). If below 15” and the power lever is close to or at idle, the engine may cease combustion. Upon advancing the power lever, if the windmilling engine does not immediately regain power, do the following: Fuel pump to low boost, power lever 1/2 open, mixture control full rich and then lean until engine starts then slowly advance to full rich. Now, power level, mixture, and fuel pump as required.

Abnormal Procedures, POH Section 3A

72. What do you do if a brake failure occurs during taxi? Gradually apply the rudder pedal with bad brake and as the airplane starts to turn in that direction pump the working brake to keep the airplane straight.

73. What procedure do you follow for an aborted takeoff? Power lever to idle, brakes as required, retract flaps, and hold the control yoke full aft.

74. If icing conditions are encountered inadvertently, you should? Pitot heat on, exit icing conditions, cabin heat maximum, windshield defrost full open, and alternate induction air on.

75. If a door opens in flight, what should you do and what will the door do? Reduce to 80 to 90 KIAS and land as soon as practical. The door will remain 1 to 3 inches open during flight if opened.

76. How would you land with one brake inoperative? Land on the side of the runway corresponding to the inoperative brake, and maintain directional control with rudder and the working brake.

77. An alternator malfunctions. What indication would occur? The ALT caution light would illuminate in the annunciator panel, and the ammeter would probably indicate an excessive charge or discharge rate.

78. What does the term “self-exciting” alternator mean? The alternator requires battery voltage only for starting. Once started, it provides self-generated field power to continue operation in case of battery failure.

79. If electrical loads must be reduced due to alternator failure, should you switch off electrical components that are not essential to flight or pull circuit breakers? Why? Switch off electrical components in order to prevent accidental circuit breaker disconnection and loss of power to flight-critical systems.

80. Communications failure procedure: Check switches and controls, change frequency, check circuit breakers, change headset, and connect the hand-held microphone. *Note: if the audio panel power fails, the audio panel connects COM 1 to the pilot’s headset and speakers. The same thing will happen if you turn the audio panel off.*

81. Electric trim/autopilot failure: Maintain airplane control manually (override the autopilot or trim) and disengage the autopilot if it was engaged. Pull the PITCH TRIM, ROLL TRIM, or AUTOPILOT CB as required. Land as soon as practical.

Normal Procedures, POH Section 4 and Section 9, Supplements: G-3 Wing supplement (G3) and Tornado Alley supplement (T)

82. Are there drains for the pitot and static air lines? Yes, each one is located below the fuselage aft of the gascolator drain. They are drained during the annual inspection and whenever water in the system is known or suspected.

83. Where is the alternate static air source valve located? On the switch and control panel that is to the right of the pilot’s leg and forward of the circuit breaker panel.

84. Where is the ELT located. Behind the aft cabin bulkhead. It is accessible through the avionics bay access panel along the aft portion of the right hand fuselage or the lower aft center access panel of the baggage compartment. It can be removed from the airplane and used as a personal locating device if necessary to leave the airplane after an accident.

85. What do you check when inspecting the Halon fire extinguisher before every flight? Remove the extinguisher from its bracket, ensure that the nozzle is unobstructed, the pin has not been pulled, the canister has not been damaged, and the unit weighs approximately 1.5 lbs.

86. Describe the two hour meters? The HOBBS meter—used to record pilot time—begins recording when BAT 1 is on and either alternator switch is on. The FLIGHT meter—used by maintenance for airframe inspections—begins when the airplane reaches approximately 35 KIAS.

87. Why is the airplane equipped with an emergency egress hammer? To break through the acrylic windows and provide an emergency escape path for occupants after an accident.

88. What is the function of the convenience outlet? To provide 12 volts using a standard cigarette-lighter plug for CD players, cassette players, and portable radios.

89. What must you check after you turn BAT 1 on during the initial cockpit check? PFD, avionics cooling fan, essential bus voltage (23-25V), flap position light out.

90. What must you check after you turn BAT 2 on during the initial cockpit check? Exterior lights, stall warning (suction device required), fuel quantity, fuel selector, flaps 100% with light on, and oil annunciator light on.

91. How can you tell whether or not the brakes have been overheated? Inspect the temperature indicator installed to the brake piston housing. If center of indicator is black, the brake assembly has been overheated.

92. What two items must be in place at the outboard ends of the horizontal stabilizer? Two pieces of clear tape that cover the forward and aft stabilizer inspection holes.

93. What two items, one attached to the flaps, the other to the ailerons, must must be inspected: The flap rub strip and the aileron gap seal.

94. When should the CAPS safety pin be removed? Prior to engine start.

95. Why should the alternators be left off during engine start? To avoid high electrical loads.

96. Starter motor limitation during engine start? Limit cranking to intervals of 20 seconds with a 20 second cooling period between cranks.

97. What does a START ENGAGE warning indicate and what should you do? The starter is still engaged after engine start. On the ground, turn the ignition and battery switches off. In the air pull the STARTER circuit breaker.

98. Do you switch fuel tanks after engine start? Yes, select lowest tank or either tank if both quantities are equal for start engine and initial taxi. Switch to other tank for engine runup and takeoff. *Note: Never switch tanks just prior to takeoff.*

99. During cold weather, what is the minimum oil temperature for takeoff? 100˚F (38˚C).

100. What are the rpm limits for the magneto check? 150 rpm for either mag; 75 rpm between mags.

101. How do you check the autopilot disconnect before takeoff? Even though it's not a Cirrus checklist item, this action should always occur: Press the HDG button to engage the autopilot. Check control forces. Now, press the yoke's autopilot disconnect button (the coolie hat) to ensure autopilot disconnect.

102. (T) Takeoff speeds? Normal, flaps 50%: 70 KIAS. Obstacle clearance, flaps 50%: 78 KIAS *Note: Pilots who rely on only one airspeed indication such as a rotation speed are making a dangerous assumption that the airspeed indicator is correct. Never trust a single source of data. When elevator pressure comes alive, establish the takeoff pitch attitude, and the airplane will lift off when the wing is ready to fly.*

103. At what speed do you retract the flaps after takeoff? 80 KIAS. Climb speeds, flaps up: (T) Normal (cruise climb): 120 KIAS. (G3) Best rate climb: SL, 101 KIAS. 10,000 ft, 96 KIAS. (G3) Best angle climb: SL, 79 KIAS. 10.000 ft, 83 KIAS.

104. (G3)Landing approach speeds? Normal approach, flaps up: 90-95 KIAS. Normal approach, flaps 50%: 85-90 KIAS. Normal approach, flaps 100%: 80-85 KIAS. Short-field, flaps 100%: 77 KIAS.

105. (G3) Maximum recommended turbulent air penetration speeds? 3400 lbs: 133 KIAS. 2900 lbs: 123 KIAS.

106. (G3) Maximum demonstrated crosswind velocity? 20 Kts.

107. (T) When will the engine speed warning (RPM) occur? When rpm is between 2710 and 2730 for more than 10 seconds or when rpm is greater than 2730 for 5 seconds.

108. (T) Preflight inspection requires what in addition to the POH items? Grasp the end of each tailpipe where it exits the lower cowl area and confirm each is secure. If one is loose, repair before further flight.

109. (T) What must you add to the POH engine start procedure? On the first start of the day, especially under cool ambient conditions, holding the fuel pump switch to the HIGH BOOST/PRIME position for 2 seconds will improve starting. After engine start lean the mixture for taxiing to the engine runup area.

110. (T) How do you set the fuel pump for takeoff, climb and 30 minutes of initial cruise? Low Boost. Because the airplane is turbocharged, leave the mixture full rich for takeoff, even at high altitudes. Leaning for takeoff and during maximum performance climb may cause excessive cylinder head temperatures. Above 18,000 feet HIGH BOOST/PRIME may be required for vapor suppression.

    For maximum power operations (power lever full forward, 2700 rpm, 29.6 in. Hg. manifold pressure) fuel flow should be 35-36 GPH. On hot days performance will improve slightly with fuel flow at 34 GPH until clear of obstructions, but then return it to the 35-36 GPH range.

111. (T) On takeoff will manifold pressure exceed the maximum of 29.6 in. Hg.? Yes, on the first flight of the day it can increase to 31-32 in. Hg., which is acceptable under these conditions, but normal full throttle should be 29.6 in. Hg. Do not let manifold pressure exceed 32 in. Hg.

112. (T) What should you do when climbing if cylinder head temperatures exceed 380˚F? Lower the nose and increase speed.

113. (T) What do you do if fuel pressure drops below 35 GPH during full power climbs? Use BOOST when below FL180, HIGH BOOST/PRIME when above FL 180.

114. (T) How do you increase engine life? Do not allow CHTs to continuously exceed 380˚F—the middle of the CHTs green arc. Intermittent CHTs up to 410˚F are not a concern. 460˚F is the maximum allowable.

115. (T) How is the power set for a Vy climb? Power lever full forward, mixture full rich, electric fuel pump set to LOW BOOST.

116. (T) During a Vy climb, how do you manage airspeed after reaching altitude for noise abatement considerations? 120 KIAS below 7,500 feet, 130 KIAS above 7,500 feet.

117. (T) How do you conduct a cruise climb? Minimum airspeed 130 KIAS, fuel pump LOW BOOST, mixture 17 to 17.6 GPH, and power lever full forward. Can you cruise and set mixture lean of peak? This is a lean of peak (LOP) mixture setting that will decrease CHTs providing they remain under 380˚F. If for any reason EGTs exceed 410˚F or you are above FL180, full rich mixture must be used. LOP climbs will result in 600 to 700 FPM rates of climb at 130 to 140 KIAS.

118. (T) What is the normal power range for cruise flight? 65% to 85%.

119. (T) How do you lean for cruise flight?
    For maximum cruise power: Max available MAP at 2500 rpm, mixture 17.6 GPH, CHT below 380˚F.
    For economy cruise power: Power lever 24 in. Hg MAP at 2500 rpm, mixture 13.0 to 14.5 GPH, CHT below 380˚F.

120. (T) To avoid unacceptably high CHTs during cruise, you must? Avoid continuous operation with the fuel flow set between 18 and 30 GPH with MAP above 26 in. Hg.

121. (T) How do you set maximum cruise power? 2700 rpm, mixture full rich for 1 to 2 minutes, verify that CHT is below 380˚F, power level 2500 rpm at max available MAP (29.0 in. Hg. to 29.6 in. Hg.), fuel pump low boost, mixture full rich then lean to between 16.0 and 17.6 gph, engine parameters monitored, fuel pump as required.

122. (T) What descent limitation exists? Avoid prolonged idle setting. Maintain a CHT of 240˚ F. This should result in a fuel flow of 13 to 14.5 GPH. The mixture may be leaned further for better economy.

123. (T) What is the emergency descent procedure? Smoothly reduce MAP to 17 to 20 in. Hg. and adjust mixture for 240˚F or better. Airspeed V_{NE} if no turbulence, V_{NO} with turbulence

124. (T) What must be added to the normal before landing procedure? Fuel pump on BOOST and mixture FULL RICH.

Performance, POH Section 5 and Section 9, Supplements: G-3 Wing supplement (G3) and Tornado Alley supplement (T)

125. Are performance figures always reliable? No. Range and endurance variations of 10% or more can occur due to variations in fuel metering, mixture leaning technique, engine and propeller condition, and air turbulence.

126.(G3) En route flight planning.

- Route**:** Rapid City, SD (KRAP) → Duluth, MN (KDLH)
- Distance: 487 NM
- Magnetic Course: 254 degrees
- Weight at Takeoff: Max Gross Weight
- Fuel: Full
- (T) 85% Lean of Peak
- Weather Conditions:
- KRAP 101250Z 22026KTG35 10SM FEW010 SCT020 30/17 A2975
- KDLH 101250Z 33020KT 10SM SCT010 20/10 A2982
- Winds aloft:

	3000	6000	9000	12000	18000
DLH	2925	253415	253704	264201	2754-03
GFK	302610	263309	253708	254205	265001
FSD	2923	263214	272907	283502	2841-01
RAP		283417	303309	304003	314900

- Airport Information:
- KRAP Elevation 3202 ft., Rwy 23/05 3600 ft., Rwy 32/14 8701 ft.
- KDLH Elevation 1420 ft., Rwy 27/09 10,152 ft., Rwy 03/21 5699 ft.

127. (G3) What will be your takeoff distance (ground roll) departing KRAP?1080 ft.

128. What is the stall speed on departure with 50% flaps and an AFT CG? 65 KIAS.

129. What is your x-wind component for runway 32 at KRAP? 26-G35 KTS.

130. What altitude will you use and why? 7000 ft. due to winds and freezing temperatures above.

131. (T) What will be your average climb rate out of KRAP? 1200 fpm.

132. (T) What will be your endurance for this flight? 4.2 hrs.

133. (G3) What will be your calculated KTAS and fuel flow for cruise flight? 176 kts. and 17.5 gph.

134. (G3) How much fuel will you have once you reach your destination? 42 gal.

135. (G3) What will be your landing distance (ground roll) at KDLH? 1200 ft.

Weight and Balance, POH Section 6 and Section 9, Supplements: G-3 Wing supplement (G3) and Tornado Alley supplement (T)

136. Are you legal to fly the SR-22 Turbo using the following information? No, the CG is out of limits even if you reduce the fuel load to the tabs, 60 gallons useable. With more than 200 lbs. in the front seat when the back seats and baggage compartment are empty, you must place ballast in the baggage compartment—50 lbs. of ballast is required if the front seat weight increased to 400 lbs.

- N726SR Basic Empty Weight: 2397 lbs .
- N726SR Empty Moment: 329.971/1,000 in. lbs.
- Pilot 220 lbs.
- Passengers: none.
- Baggage: none.
- Full Fuel: 92 gallons useable, 552 lbs.

137. What is the maximum gross weight and the maximum ramp weight? 3400 lbs. and 3409 lbs. *Note: Cirrus allows 1.5 gallons (9 lbs.) for engine start, taxi, and runup.*

138. Is unusable fuel and full engine oil included in basic empty weight? Yes.

Airplane and Systems Description, POH Section 7 and Section 9, Supplements: G-3 Wing supplement (G3) and Tornado Alley supplement (T)

139. The airplane is made from composite materials for aerodynamic efficiency. What material is used for the rudder, elevator, ailerons, and wing flaps? Aluminum.

140. What are the small tabs on the elevator, rudder, and right aileron? Ground adjustable trim tabs that are factory set and do not normally require adjustment.

141. What activates the electrical trim motors? A conical trim button (called a “coolie hat”) located on the flight control yoke activates the aileron and elevator trim motors when moved left or right or up or down. Push it down to deactivate the autopilot.

142. How do you position the elevator trim and the aileron trim to the neutral position? Elevator: Align the yoke’s reference mark with the metal tab that’s attached to the instrument panel bolster—the rounded portion that extends across the cockpit beneath the instrument panel. Aileron: Align the fore-and-aft line that’s etched on the control yoke with the centering indication that’s marked on the bolster.

143. If the elevator control system or aileron control system failed due to something other than a jammed elevator or a jammed aileron, how could you control the airplane? Use the elevator or the aileron trim control system.

144. What is the yaw trim system? A spring cartridge attached to the rudder control system that provides a centering force whenever the rudder is deflected. It is ground adjustable only.

145. Describe the power lever (throttle). It adjusts the engine throttle setting in addition to automatically adjusting propeller speed. Cables connect the lever to the throttle body’s fuel-metering valve and to the propeller governor. The system is set to maintain 2500 rpm throughout cruise power settings and 2700 rpm at full power.

146. What backup flight instruments are available if the PFD fails? Altimeter, airspeed, attitude indicator, and magnetic compass.

147. The airplane does not have a flight-control gust lock, and you are not required to secure the control yoke with a seat belt when the airplane is tied down. Why not? Because the rudder, aileron, and elevator trim spring cartridges have sufficient power to act as a gust damper.

148. Can you stand or kneel on the seats? No. The seat bottoms have an integral aluminum honeycomb core designed to crush under impact to absorb downward loads during a CAPS landing.

149. What adjustments can be made for the front seats? Fore and aft and seat-back tilt.

150. Where is the throttle-friction control wheel located? On the right side of the center console.

151. How could you evacuate the airplane if the cabin doors were jammed shut? Use the ball-peen type hammer that's located in the center armrest to break the acrylic windows and form an escape path.

152. You are required to visually inspect the fire extinguisher before each flight. What must you ensure? The nozzle is unobstructed, the pin has not been pulled, and the canister has not been damaged.

153. (T) Describe the engine's alternate-air system, An alternate-air door will open automatically if the filtered engine-air inlet becomes iced up, and a message will appear on the PFD and MFD. When conditions improve and the ice dissipates, the alternate air door can be closed by momentarily closing the throttle.

154. Describe the fuel vents. Each tank has a NACA-type vent mounted in an access panel underneath the wing near each wing tip.

155. Describe the fuel drain valve locations and function. Five total. Each wing has two drains, one for the fuel tank and one for the collector tank. The gascolator drain is located under the forward fuselage just aft of the lower engine cowl. The fuel must be sampled prior to each flight.

156. (T) Why does the turbocharged SR-22 have a HIGH BOOST/PRIME fuel pump position? Under some extreme environmental conditions, this pump position may be required in flight above FL 180 to adequately suppress vapor formation. This condition is most likely to occur during climbs on a hot day or with warm fuel in the tanks. Vapor locking is most often indicated by any or a combination of the following: Fluctuations in normal fuel flow possibly coupled with abnormal engine operation, rising EGTs and TIT coupled with falling fuel flow, and rising CHTs (late in the process).

157. Can you slip the SR-22? Yes, but if the fuel tank being used is less than 1/4 full, do not allow the airplane to remain in uncoordinated flight for periods in excess of 30 seconds. The fuel tank outlets may become uncovered.

158. Where are the flight time and Hobbs meters located? Inside the armrest storage compartment.

159. Where is the parking brake located and how is it activated? Below the instrument panel to the right of the pilots right ankle. Depress brakes and pull parking brake on.

160.Describe the voltage, capacity, and location of each battery and alternator.

- BAT 1 - 24V, 10 amp/hr battery located on the right firewall.
- BAT 2 - Two 12V, 12 amp/hr batteries connected in series to provide 24V located behind the aft cabin bulkhead below the parachute canister.

- ALT 1 - A gear-driven, 28.0V, 60-amp alternator mounted on the right front of the engine.
- ALT 2 - A gear-driven, 28.75V, 20-amp alternator mounted on the accessory case at the rear of the engine.
- (Note: The alternator voltage difference (28.0 and 28.75) is a critical factor for electrical system operation. This will be explained in the next question.)

161. Describe the electrical system using Figure 7-13 on page 7-67 of the AFM. There are two batteries and two alternators. BAT 1 and ALT 1 supply the MAIN DISTRIBUTION BUS which powers the ESSENTIAL DISTRIBUTION BUS, the NON ESSENTIAL BUS, and the MAIN BUS 1. BAT 2 supplies the ESSENTIAL BUS. ALT 2 supply the ESSENTIAL DISTRIBUTION BUS 2 which powers the ESSENTIAL DISTRIBUTION BUS which powers the ESSENTIAL BUS and the AVIONICS ESSENTIAL BUS.

Note: Find the two diodes—circles that contain a black arrowhead that's perpendicular to a straight line—between the two main distribution buses and the essential distribution bus in Figure 7-10. Diodes act like switches if power failure occurs in the SR-22. Just remember that voltage is like water pressure, and the higher voltage (pressure) always dominates over lower voltage (pressure). If ALT 2 fails, the 28.75 volts disappears and the diodes will let ALT 1's 28.0 volt current pass through and power whatever ALT 2 had been powering. However, if ALT 1 and BAT 1 fail, the diodes block current flow and will not let ALT 2 power what BAT 1 or ALT 1 were powering. Why can't BAT 1 or ALT 1 power what ALT 2 is powering during normal operation? Because ALT 2's 28.75 volts (higher pressure) prevents ALT 1's 28.0 volts current from crossing the diodes. In summary, if only BAT 2 or ALT 2 are functional, they will only power the ESSENTIAL DISTRIBUTION BUS, but if only BAT 1 or ALT 1 are functional, they will power all busses. The SR-22 is an all electric airplane with excellent redundancy. This knowledge is mandatory.

162. Why should the batteries not be turned off in flight? Because both alternators are self-exciting (will continue to run without battery power) but require battery voltage for field excitation in order to start should they shutdown.

163. What equipment is powered by the ESSENTIAL DISTRIBUTION BUS? Engine instruments, stall warning, roll trim, pitch trim, BAT 2, NAV 1, COM 1, ADC AHRS, standby attitude indicator, and PFD, and GPS 1 (the upper Garmin 430).

164. LOW VOLTS warning light illuminated procedure: Cause: Voltage is 24.5 volts or less on the ESSENTIAL BUS and you are on battery power only because both alternators have failed or are off. Procedure: If both alternators have failed, land as soon as possible.

165. How can you prove what the ESSENTIAL DISTRIBUTION BUS powers? With the engine running on the ground, turn off ALT 1 and BAT 1, but leave ALT 2, BAT 2, and the avionics switch on. Now observe what works and what doesn't work.

166. How can you check to see if the distribution buses isolation diodes have failed? Turn on only BAT 2 and the avionics switch and COM 2 or NAV 2. If either one works, one or more diodes have failed.

167. When external 28VDC power has been supplied to the airplane through the ground service receptacle, what must you then do to power the electrical system? Turn BAT 1 on.

168. The ESS BUS Warning illuminates. What does that mean and what do you do? Voltage output from either alternator is incorrect. Usually an M BUS 1 or M BUS 2 annunciation will appear for the corresponding alternator failure. Perform the ALT 1 or ALT 2 checklist or land as soon as practical.

169. What occurs when you turn the landing light switch on? You turn on the High Intensity Discharge (HID) landing light mounted in the lower engine cowl and turn on the recognition lights located on the leading edge of the wing tips.

170. (G3) Three controls exist for heating and ventilation. The cabin HEAT control does what? Controls the amount of hot air that enters the mixing plenum (see POH Figure 6, pg. 55).

171. (G3) The cabin TEMPERATURE air control does what? Controls the amount of fresh cooling air and the amount of hot air that enters the mixing plenum in order to produce the desired conditioned air.

172. (G3) The cabin VENT air control does what? Controls the distribution of the conditioned air.

173. (G3) The Airflow Selector does what? Controls the fan and the amount of airflow.

174. (G3) Where are the inlets for cabin ventilation and heating? Air for cabin heating enters through the right hand engine cowl opening (ALT 1 is visible). Air for ventilation and cooling enters through a NACA vent on the right hand lower engine cowl.

175. (G3) Where are the conditioned air outlets? Adjustable front seat outlets are located on the instrument panel and below the instrument panel above the occupants feet. The rear seat outlets are at floor level.

176. Where is the sensor for the stall warning horn? Behind the small hole in the right wing's leading edge.

177. Where are the pitot tube and static ports located? Pitot tube: under the left wing. Static ports: one on each side of the aft fuselage.

178. What does the pitot heat caution light indicate? The pitot heat switch is in the on position, but the pitot tube is not receiving electrical current.

179. Describe the standby attitude indicator: Electrically driven gyro with a red GYRO flag that indicates loss of electrical power from the essential bus. It can follow 360º of roll and 360º of pitch, and it has both a traditional knob for aligning the miniature airplane with the instrument's horizon and a PULL TO CAGE knob for quick erection of the gyro.

180. Describe the fail-safe mode for the Garmin GMA 340 audio system: It connects the pilot's headphone and microphone to COM 1 if power is removed or if the Mic Selector switch is turned to the OFF position.

181. Where is the ELT located and where is it's control panel located? It is installed directly behind the aft cabin bulkhead, and the control panel is installed immediately below the circuit breaker panel next to the pilot's right leg.

182. How can you tell if the ELT is transmitting? A flashing light on the control panel.

183. Is the ELT portable? Yes. You can access it at the lower aft center of the baggage compartment. Disconnect the leads attached to the unit, remove it, and attach the portable antenna to the antenna jack on the front of the unit. Set main control switch to on.

184. (T) Describe the turbocharger system. A turbo-nomalized system, which means that at full throttle it will maintain approximately 29 inches of manifold pressure up to FL 240. The compressor section of each turbocharger (there are two) draws in ram air, compresses it, routes it to the engine intake manifold through the intercooler, which reduces the temperature of the compressed air. The turbine section is rotated by exhaust gas that comes from the waste gate, which controls the amount of turbine inlet air so that sea level pressure is maintained when the throttle is full open. The waste gate controller directs movement of the left waste gate, which is mechanically linked to the right waste gate.

185. Where do you find information on the oxygen and ice protection systems? POH Section 9, Supplements: Approved Oxygen Systems, and Ice Protection System.

186. Is flight into known icing conditions permissible? Absolutely not! The system gives you anti-icing (not deicing) protection in inadvertent icing encounters.

Handling, Service, and Maintenance, POH Section 8

187. Can you use external power to start the airplane if BAT 1 is dead? No, you need some battery power in order to close the relay in the master control unit.

188. Can you push the airplane backward without using the tow bar? No.

189. What are the tire pressures? Nose wheel tire: 30 psi. Main wheel tires: 62 psi.

190. Installation of the oil dipstick can be difficult. How should you do it? Point the dipstick's finger loop toward the airplane's nose or tail, and allow the dipstick to rotate 180 degrees as you push it into the engine or pull it out.

191. What is the minimum engine oil quantity and the amount recommended for extended flights? 6 qts. minimum, 7 qts. for extended flight.

192. When cleaning the windshield and windows, what hand motion should you use? Linear—straight back and forth. Circular motion causes spirals in the plexiglas which makes those scratches much more apparent when flying.

193. How should you clean the electronic display screens (PFD and MFD)? Gently wipe the display with only a lens cloth or nonabrasive cotton cloth. Moisten a clean, cotton cloth with Optiimax LCD Screen Cleaning Solution, wipe screens in one direction moving from top to bottom, and then wipe the display clean with a clean, dry, cotton cloth. Paper towels, tissue, or camera lens paper may scratch the screens.

SUPPLEMENTS, POH Section 9

Garmin GMA 340 Audio System

194. Pressing the COM 1/2 button does what? Activates the split com function so that the pilot can transmit/receive on COM 1 and the copilot can simultaneously transmit/receive on COM 2.

195. What does the left inner knob do? On/Off power control and pilot intercom volume.

196. What does the left outer knob do? Pilot mike squelch level.

197. What does the right inner knob do? Copilot's intercom volume when pushed in. Passenger's intercom volume when pulled out.

198. What does the right outer knob do? Copilot and passenger mike squelch level.

199. How do you set the audio squelch? With the engine running, slowly rotate the control knob clockwise until you no longer hear engine nose in the headset. Place the mike close to your lips and verify that normal speech levels open the channel.

200. What is the function of the PILOT and CREW intercom isolation buttons? PILOT: The pilot is isolated from the intercom system. CREW: Pilot and copilot are on one intercom channel, isolated from the passengers who are on a separate channel.

Garmin GTX 327 Transponder

201. Do you turn the transponder to STBY after engine start? No, that occurs automatically when you turn on the avionics power.

202. When do you place the transponder to the ALT position? Never. If the transponder is in STBY, it automatically goes to ALT when airspeed reaches 35 knots, and it automatically returns to STBY when airspeed decreases below 35 knots.

203. What is the function of the 8 and 9 buttons? 8 reduces display contrast; 9 increases display contrast.

204. What bus powers the transponder? Non-essential avionics bus.

205. What does the FUNC key do? Changes the data on the right side of the screen. Displayed data includes pressure altitude, flight time, count up timer, count down timer, contrast, and display brightness.

206. What is displayed when flight time is selected? The time accrued while the airplane was moving faster than 35 knots.

207.How do you start the count up timer? Press the CLR key to zero the display and press the START/STOP key.

208. How do you setup and start the count down timer? Set the time with the CRSR key and the 0 through 9 keys, then press the START/STOP key.

S-Tec System 55X Autopilot

209. Is the S-Tec System 55X POH required to be on the airplane during flight? Yes, and it must be available to the pilot while in flight.

210. How can you disconnect the autopilot? Push in the Coolie Hat on the control yoke or pull the autopilot circuit breaker on the non-essential avionics bus.

211. List and explain the autopilot pre-flight tests:

- When avionics power is turned on, all autopilot annunciators except CWS and TRIM illuminate and then go off after 5 seconds. When the turn coordinator reaches operating rpm, the RDY light will illuminate.
- Heading mode test: Center HDG bug under lubber line on HSI. Momentarily press HDG button on autopilot and note that HDG illuminates. Rotate HDG knob and note that control yoke follows movement to the left and right.
- Vertical speed test: Press VS button and note that VS light illuminates VS+0. Rotate the VS control knob to 500 fpm up and the control yoke should move aft after a short delay. Rotate the VS control knob to 500 fpm down and the control yoke should move forward after a short delay.
- Altitude hold test: Depress the ALT button. Note that ALT annunciator comes on, VS annunciator goes out, and yoke does not move.
- Overpower test: Grasp control yoke and input left and right aileron and nose up and nose down to overpower autopilot. Overpower action should be smooth in each direction with no noise or jerky feel.

- Radio check: Turn on NAV 1 radio with a valid NAV signal and select VLOC for display on the HSI. Engage NAV mode and move OBS so that VOR deviation needle moves left or right. Note that control yoke follows direction of needle movement.
- Autopilot disconnect test: Press the Coolie Hat switch on the control yoke. Note that autopilot disconnects. Move control yoke to confirm that pitch and roll control is free with no control restriction or binding. If a pilot is in the copilot's seat, repeat disconnect test using the copilot's disconnect switch.

212. From where does the autopilot receive its signals? The turn coordinator, the HSI, and the #1 NAV/GPS radio.

213. List and explain the autopilot operating modes:

- RDY (ready): Autopilot is ready for engagement.
- HDG (heading) mode: Autopilot will hold the heading set on the HSI.
- NAV (navigation) mode: Autopilot will provide intercept and tracking of GPS, VOR, and Localizer courses. It automatically sets up a 45º intercept.
- GPSS (GPS Steering) mode: Pressing NAV twice will cause the autopilot to go to GPSS for smoother tracking and transitions. The autopilot is directly coupled to the roll steering command produced by the GPS navigator, eliminating the need for the pilot to make adjustments to the HSI course arrow.
- REV (reverse course) mode: Autopilot will track the localizer back course inbound and the localizer front course outbound.
- APR (Approach) mode:Provides increased sensitivity for VOR or GPS approaches.
- GS (glideslope) mode: Autopilot will capture and track an ILS glideslope. The airplane must be 60% or more below the glideslope centerline during the approach to the intercept point, and within 50% needle deviation of the localizer centerline at the point of intercept—usually the outer marker. When these conditions have existed for 10 seconds, the GS annunciator will illuminate indicating that GS arming has occurred. The ALT light will go out when the glideslope is captured.
- ALT (altitude hold) mode: Autopilot will hold the altitude at the time the mode was selected providing a roll mode is engaged. Altitude correction can be made by rotating the VS knob in the appropriate direction. Altitude will change 20 feet for each click of the knob.
- VS (vertical speed) mode: Autopilot will synchronize to and hold the vertical speed at the time the mode was selected. Vertical speed will change by 100 fpm for each click of the VS knob.

Goodrich SkyWatch SKY497 Traffic Advisory System

214. Must the SkyWatch pilot's guide be available to the pilot in flight? Yes.

215. What avionics unit controls and initiates SkyWatch? GPS 1 (Garmin 430)

216. What sequence occurs before SkyWatch becomes operational? Avionics power on, self-test complete, and STBY mode until 8 seconds after airspeed reaches 35 KIAS.

217. When does SkyWatch return to STBY mode: 24 seconds after airspeed slows to 35 KIAS or below.

218. What are the four operator initiated modes of SkyWatch? Self-test, switch to normal from the standby screen, switch into standby from the traffic screen (unable when airborne), and change altitude display.

219. List the steps for the AirWatch self-test on the Garmin 430? Rotate the small PUSH CRSR knob to select the Traffic/Weather page. From the traffic screen, press the MENU key to select the Menu page. Rotate the small PUSH CRSR knob to select SELF TEST and then press the ENT key.

220. If you wanted traffic information while on the ground, how would you switch to normal from the standby screen using the Garmin 430? Turn the cursor on and highlight STBY. Use the small PUSH CRSR knob to select OPER? Press the ENT key to place SkyWatch in the OPER (operational) mode. SkyWatch will switch into the 6 nmi display range.

221. How do you change altitude on the traffic display? List the different options: From the traffic screen, turn the cursor on, highlight the current mode, and use the small PUSH CRSR knob to cycle through the options. ABV, look up; NRM, normal; BLW, look down; or UNR, unrestricted.

222. SkyWatch issues TAs. What's that and how are you alerted to a TA? Traffic Advisories. You are alerted to a TA by an aural "Traffic, Traffic" warning over your headset and the cabin speaker. (Note: You'll also here the term RA used by pilots flying larger airplanes. An RA is a resolution advisory that more sophisticated traffic alert systems generate. An RA gives the pilot immediate climb or descend instructions, instructions that have priority over ATC instructions.)

223. What is the SkyWatch range and altitude limits? 6 nmi and ±800 feet relative altitude.

Avidyne EX-Series Multifunction Flight Display (MFD)

224. List and explain the multifunction flight display (MFD) pages:

- MAP page: The primary page that also gives traffic information from SkyWatch.
- TRIP page: Lists the remaining legs of the active flight plan in a tabular format.
- NEAREST page: Provides a list and relative position of navigational items of interest including navaids and airports.
- CHECKLIST pages: Provides an electronic display of checklists—normal and emergency procedures and essential performance data.

- SYSTEM SETUP pages: Allows the pilot to set user preferences for the display and view the on-board database version and validity dates.
- ENGINE MONITORING page: Displays engine instruments, electrical parameters, and leaning information.

225. Can you use the MFD as your primary navigation instrument? No.

226. Which GPS does the MFD use for data input? Whichever one has been selected in the system setup page. Normally GPS 1 is used.

227. If a TA occurs, how do you get the traffic display to appear on the map page? Press the “Message Ack” bezel key.

Avidyne Entegra-Series Primary Flight Display (PFD)

228. What traditional instruments does the PFD replace? Airspeed indicator, attitude indicator, altimeter, turn coordinator, HSI or DG, vertical speed indicator, VOR/LOC indicator, altitude alerter, and OAT/clock.

229. What traditional instruments are still installed as a backup in case the PFD fails? Altimeter, airspeed, attitude indicators, magnetic compass.

230. What traditional instrument is installed just for the autopilot? A turn coordinator.

231. What primary information does the PFD supply to the MFD? Heading. The PFD is the primary heading source for the MFD.

232. Must the Avidyne FlightMax Entegra-Series PFD Pilot’s Guide be available to the pilot during all flight operations? Yes

233. List the limitations that apply when the PFD is coupled with the autopilot system:

- Autopilot operation is prohibited above 185 KIAS.
- Autopilot must not be engaged for takeoff and landing.
- Autopilot must be disengaged for a missed approach and go-around.
- When in altitude hold, flaps 50% cannot be extended above 95 KIAS.
- Flap selection is limited to 50% during autopilot operation.
- Autopilot must be disconnected in moderate or severe turbulence.
- Minimum engage height for the autopilot is 400 feet agl.
- Minimum speed for autopilot engagement is $1.2V_S$ for the configuration.
- The autopilot must be disengaged no later than 100 feet below the MDA, at the DH, and during an approach if course deviation exceeds 50 percent.
- With autopilot engaged for an approach, a 12 knot crosswind limit exists inside the final approach fix.
- A localizer intercept shall occur at least 5 miles outside the FAF, 10 miles if the crosswind component is between 12 and 17 knots.
- The intercept angle shall be no greater than 45 degrees.

- The flaps should be extended to 50% prior to the FAF and no further changes should be made during the autocoupled approach.
- Approach a glideslope in a manner that allows automatic arming of the glideslope, or if glideslope is manually armed, no more than 15% above the glideslope.

234. What will happen to autopilot operation if the PFD fails, and what must you do? You loose the ability to control the autopilot through the PFD controls. If this occurs, pull the PFD circuit breakers and fly the airplane using the backup instruments.

235. Is autopilot lateral control available with the PFD circuit breakers pulled? Only if you use the autopilot's GPSS steering mode (push the NAV button twice) through GPS 1. (Autopilot vertical control is also available through the autopilot's VS and ALT modes.)

236. If you lose attitude information on the PFD, can it be restored? Yes, if the airplane is equipped with software version 530-00159-000 Rev 00 or higher. If that's the case and the power loss was not greater than 20 seconds, you will get a PLEASE STANDBY message for 2 seconds followed by an ATTEMPTING QUICK RESTART message. If that does not occur or if the software has not been upgraded, attitude information is lost until the PFD can be restarted on the ground.

237. Where is the slip/skid indicator? The bottom edge of the bank angle pointer.

238. Where is the rate of turn indicator? The arc with a blue arrow on top of the HSI.

239. The heading, altitude, and vertical speed all have selectable, magenta reference bugs. How can you tell whether or not any of these are coupled to the autopilot? They'll be sold magenta if coupled, but hollow if not coupled.