

Texas Skies Flight School
DA42 Study Guide

1. What material is used to construct the airframe? Flight controls? Propellers?
2. How are the ailerons, elevator, and rudder actuated?
3. Does the DA42 have elevator and rudder trim?
4. What is the wingspan of the DA42?
5. Why is lightning protection required for the DA42?
6. What is the elevator friction dampener and why is it needed?
7. What does the elevator backstop do and how is it actuated?
8. How many hinges are on each flap?
9. How many doors are there on the aircraft?
10. What are the possible flap settings?
11. What flap settings are allowed for takeoff? For landing?
12. Can the flaps be extended if the electrical system has failed?
13. Describe the stall warning system.
14. Describe the landing gear system.
15. What makes the landing gear extend/retract?

16. What is the purpose of the landing gear hydraulic accumulator?
17. How can you test the landing gear position lights?
18. What causes the gear from being retracted when the gear selector is in the UP position while the airplane is on the ground?
19. What three conditions cause the gear warning horn to sound?
20. Describe the manual gear extension process.
21. Describe the brake system.
22. How would you activate the parking brake?
23. What is the total usable fuel quantity?
24. How many chambers make up each main wing tank? Each auxiliary tank?
25. Which tanks have fuel gauges?
26. What grade of fuel is used?
27. How many fuel pumps are there?
28. Why is a fuel cooler required?
29. Are the main tanks heated? The auxiliary tanks?
30. Can the engines draw fuel directly from the aux tanks?
31. Can you feed fuel from the right main tank to the left engine? If so, how?

32. What is PRIST? Is it allowed to be used in the DA42?
33. Describe the DA42's engines.
34. What is an ECU? How many are installed? How are they powered?
35. Can the engines continue to run without electrical power?
36. What five things occur when an engine master is turned off?
37. What kind of engine oil does the DA42 have?
38. What are the engine oil capacities?
39. How are the engines cooled?
40. Where is the coolant level sensor located?
41. What do you do if 'low coolant level' and 'high coolant temperature' warnings are both displayed?
42. What is the purpose of the intercooler?
43. Describe the engine fire detection system.
44. What is the function of the gearbox?
45. Describe the propellers.
46. How are propeller RPMs and blade angle controlled?
47. What is the CSU and what does it do?

48. Describe the electrical system. (voltage, batteries, sources of power, etc)
49. How would you recognize an alternator failure?
50. How would you respond to an alternator failure?
51. What do the alternator switches do?
52. How are heat and defrost provided to the cabin?
53. What powers the standby attitude indicator in the event of an electrical failure?
54. How many G1000 cooling fans does the DA42 have?
55. Describe the antennae on the DA42?
56. Where are the normal and alternate static sources located?
57. What equipment is required for day VFR? Night VFR? IFR?
58. How do you handle inoperative equipment?
59. What are the maximum takeoff and landing weights?
60. What is the zero fuel weight limit?
61. What is the empty weight of the aircraft?
62. What is the useful load of the aircraft?
63. With full fuel, how much weight can you carry in the aircraft?

64. What is the combined weight limit for the rear baggage compartments?

65. Define in your own words and list the speed for all the V-speeds.

66. What effect does the aircraft's weight have on V_A ?

67. Describe VMC, VY, VYSE.

68. Define single-engine service ceiling.

69. Define maximum operating altitude.

70. Describe the procedure for identifying an engine failure.

71. Under what conditions would you try to troubleshoot a failed engine?

72. Under what conditions would you secure a failed engine?

73. Describe the engine restart procedure.

74. What factors determine which engine is the critical engine?

75. What are the criteria used to determine VMC?

76. Describe the zero-sideslip configuration.

77. What is accelerate-stop distance?

78. What is accelerate-go distance?

79. What is a balanced field condition?

80. What factors affect takeoff and accelerate-stop performance?

81. Describe the takeoff briefing for emergencies.

82. What do the following CAS messages mean?

AHRS ALIGN
AIRSPEED FAIL
ATTITUDE FAIL
CHECK GEAR
DEICE PRES LO
DEICE LVL LO
DEICE PRES HI
DOOR OPEN
GIA FAN FAIL
INTEG RAIM
L/R ALTN AMPS
L/R ALTN FAIL
L/R AUX FUEL E
L/R COOL LVL
L/R ECU A/B FAIL
L/R ENG FIRE
L/R ENG TEMP
L/R FUEL LOW
L/R FUEL TEMP
L/R FUEL XFER
L/R GBOX TEMP

83. At what altitude should you recover from maneuvers?

84. What is the maximum demonstrated crosswind for the DA42?

85. What is the service ceiling of the aircraft?

86. What is the maximum RPM setting? For how long?