

Piper Arrow II Aircraft Familiarization / Initial Complex Endorsement

1. Describe the general systems of the aircraft:
 - a. Engine –
 - b. Fuel – Capacity? _____ Usable (per tank)? _____, Quantity to Tabs? ____
 - i. Position & location of fuel drains to sump _____
 - ii. Type of fuel permitted? _____
 - iii. Fuel flow indication - _____
 - c. Oil Type? _____ Min operational Qty? _____ Sump Capacity? _____
 - d. What is the definition of Minimum Operational Oil Quantity _____
 - e. Propeller....governor, and what happens to the propeller when oil pressure is lost? _____
 - f. Heating/ventilation – _____
 - g. How are the flaps operated? _____
 - h. What are some standard electrical accessories? _____
 - i. Landing Gear – _____
2. What effect does gear extended have on glide distance? _____
3. What is the color and purpose of the throttle lever? _____
4. What is the color and purpose of the prop control lever? _____
5. Moving from left to right, what is the order of the throttle, mixture, and propeller controls? ____
6. What order should the controls be moved to increase power? _____
7. What order should the controls be moved to reduce power? _____
 - a. Why is it necessary/recommended to follow the above procedure? _____
8. What is the manufacturer recommendation about leaning the mixture? _____
9. What is the maximum allowable gross weight for this aircraft? _____ lbs.
10. Current basic empty weight and arm for this aircraft? _____ lbs., _____ inches
11. What is the Useful Load of this aircraft? _____ lbs
12. How much payload can be carried assuming maximum fuel on board? _____ lbs.
13. What is the maximum weight permitted in the Baggage Compartment? _____ lbs.
14. The proper main strut inflation should be _____ inches. The proper nose strut inflation should be _____ inches (assuming aircraft has full fuel, all required oil, and no other loads)
15. Upon an "Alternator Failure" condition, the pilot should:
 - a. _____

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- b. _____
- c. _____
- d. _____

16. When should the electric fuel pump be used? _____
- a. What condition(s) should be avoided when burning fuel from either tank? _____
 - b. What is the recommended procedure for using fuel from the tanks? _____
 - c. What's the fuel burn at FULL power? _____ at 75% power? _____
17. What actions should be taken if "Loss of Fuel Flow/Pressure" occurs?
- a. _____
 - b. _____
 - c. _____
18. Starter cranking is limited to _____ seconds with _____ minute rest periods between cranking cycles
19. During the "warm up period" the engine should be at a minimum of _____ RPM and maximum of _____ RPM. The "warm up period" should be no longer than _____ minutes in warm weather, and _____ minutes in cold weather
20. Is it permissible to fly this aircraft into forecasted icing conditions? _____
21. Define (verbally) & note the following speeds for this aircraft (Gross Wgt, Sea Level, Gear & Flaps Up)

VNE		VX	
VGLIDE		VY	
VNO		VR	
VFINAL APP (40° Flaps)		VLO	
VSO		VA	
VFE		VLE	
VCRUISE CLIMB		VGUC	(Gear Up climb speed)

22. What is the maximum demonstrated X-wind for this aircraft? _____
23. What type of stall warning indication does this aircraft have? _____
24. Between which speed(s) above stall does it activate? _____
25. What are the flap settings of this aircraft? _____
26. During a Short Field takeoff, the flaps should be lowered to the _____ notch which is _____ degrees
27. The rotation speed for this aircraft is? _____
28. What type of indication do we have when the landing gear is down and locked? _____
29. Keeping the above in mind, what should you be aware of during daytime flights? _____
30. How can you determine if the panel light switch (right most rheostat on the central switch bank) is ON? _____
31. If the Panel Light rheostat Switch is in the "ON" position how does that effect the Landing Gear Position Indicator Lights? _____
32. This aircraft is equipped with a back-up landing gear extender, that automatically extends the landing gear at certain flight conditions (True/False)? _____
33. Where is the ELT located? _____
34. Can the ELT be activated from the flight deck (Yes/No) _____

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35. What is the power off stall speed with flaps 40°, maximum gross weight, gear down, and a 40° angle of bank?

36. What are the first five steps in the emergency procedure for an in-flight engine fire? [p 37]

a. _____ b. _____ c. _____ d. _____ e. _____

38. What is propeller overspeed? _____

39. What are the action items for propeller overspeed? _____

40. What is the yellow zone on the tachometer? _____

41. What is the minimum vacuum pressure at 2000 RPM _____

42. The engine induction Alternate Air source in this aircraft is: (Automatic/Manual/Both)? _____

43. When should induction alternate air be used? _____

44. How does use of Induction alternate air affect the aircraft? _____

45. What impact, if any does use of induction alternate air have on the manifold pressure? _____

46. Does this aircraft have an alternator or generator? _____.

47. What's the advantage of having an alternator? _____

48. What is the approximate short field takeoff distance (over a 50' obstacle) under the following conditions: Takeoff weight: 2650lbs, Obstacle: 50 ft., Flaps: 25°, Power: Full Throttle, Temperature: +25° C, Pressure Altitude: 1,500 ft.? _____ ft.

49. The normal flap setting for short-field take-off is ____ degrees.

50. What is the expected Gear UP Rate-of-Climb under the following conditions: Takeoff weight: 2650lbs, Power: Full Throttle, 100 MPH CAS, Temperature: +27° C, Pressure Altitude: 2000 ft.? _____ ft/min

51. What is the approximate landing distance (over a 50' obstacle) under the following conditions: Landing weight: 2650lbs, Flaps: 40°, Power: Off, Temperature: +35° C, Pressure Altitude: 1,000 ft.; Max Braking? _____ ft

52. What is the Best Glide Configuration of this aircraft at 2650lbs? Gear: _____, Flaps: _____, Prop: _____, Cowl Flaps: __N/A__, Airspeed: _____

53. When transitioning to a balked landing from a normal landing configuration, the flaps should initially be retracted to _____ notch or _____ degrees.

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54. When configuring the aircraft for landing, should carburetor heat be used? (Yes/No) _____

55. In reference to the above, why/why not? _____

56. During the pre-takeoff engine run-up, the power should be set to _____ RPM. As each magneto is individually selected, the maximum allowable drop is _____ RPM. The difference between the left and right magneto RPM drop must not exceed _____ RPM.

57. May the pilot initiate takeoff if these values are slightly exceeded? (Yes/No) _____

58. When should the landing gear be retracted after takeoff? _____

59. What is the indication that the landing gear has been fully retracted? _____

59. Approximately how long does it take for the landing gear cycle to retract/extend the gear? _____

60. What are all the indications that the landing gear has been fully extended? a. _____

b. _____ c. _____ d. _____

e. _____

61. The landing gear handle is which of the following (choose one)?

- a. A valve which directs hydraulic pressure to the landing gear actuators
- b. An electric switch that activates a reversible hydraulic pump
- c. A mechanical linkage to the landing gear drive clutch mechanism

62. Which of the following methods holds the landing gear in the retracted position (choose one)?

- a. Mechanical locks
- b. Electrical locks
- c. Hydraulic pressure

63. During NORMAL landing gear operations, the Emergency Gear Extension Lever should be in the _____ position.

64. In the event of an electrical system failure, the landing gear may be extended using which of the following alternative methods (choose one)?

- a. Moving the landing gear handle to the down position, as it is not part of the aircraft electrical circuit
- b. Pressurizing the hydraulic system using the Emergency gear extension hand pump lever
- c. Holding the Emergency gear lever in the "down" position to release hydraulic pressure

65. The battery is _____ volts; the alternator produces _____ volts.

66. Tire pressure for the nose tire is _____ psi; the main tires are _____ psi.

67. Given the following aircraft loading criteria (lbs): Pilot. 170, Copilot 150, Rear Pax 115, Baggage 50, Full Fuel. The Gross Weight is _____ lbs. The C.G. is _____ inches aft of datum. Is the aircraft loaded within allowable weight limits? _____ Is the aircraft loaded within allowable C.G. limits? _____

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68. Given the loading from the previous question, adding another rear pax weighing 110 will cause the (choose one):
- aircraft's rearward C.G. limit to be exceeded
 - aircraft's forward C.G. limit to be exceeded
 - aircraft to be within weight and C.G. limits.

Use BGUMPS on every landing when midfield, abeam, base and final and you will BE fine!

B – boost/fuel pumps ON

U – undercarriage DOWN. Intentionally keep finger on lever for 7 seconds (that's how long this aircraft takes to drop its wheels)

M – mixture RICH and FULLEST tank (this should be done on your descent checklist, and verified on approach)

P – Propeller FORWARD (for HIGH RPM in case you need to initiate a Go-Around)

S – Seatbelts & shoulder harness

As a Cessna/high-wing driver, you've gotten spoiled by fuel being drawn from either tank, and maybe occasionally switching tanks to remedy an imbalance, however, in most low-wing aircraft, you are provided a BOOST pump/ELECTRIC fuel pump which is used as a supporting player to the engine driven pump to assure uninterrupted fuel flow to engine.