Patuxent River Navy Flying Club

Piper PA-28R-200, Aircraft Open Book Exam

Name: _____ Date: _____

Aircraft: _____ Initial Exam Grade:_____

Instructor: _____ Date reviewed & corrected to 100%: _____

Print this page then complete the exam using the PA-28R-200 Pilots Operating Handbook. Give the completed exam (hard copy) to a PRNFC CFI for review and correction. After the exam has been reviewed, upgraded to 100% and signed off by the CFI then turn it in to the office to be placed in your training folder. This exam must be completed annually per BUPERSINST 1710.22.

1. The electrical system uses what voltage? This is important when plugging accessories into the Cigar Lighter receptacle or when using external power to start the aircraft. (POH Electrical System)

A. 12 volt
B. 24 volt

2. The normal operating range for the engine oil temperature is: (POH Limitations)

A. 70 degrees to 265 degrees F
B. 20 degrees to 130 degrees C
C. 75 degrees to 245 degrees F

3. Normal extension of the oleo struts is _____ for the nose gear and _____ for the main gear. (POH Airplane and Systems)

A. 4in, 3in
B. 2.75in, 2in
C. 3in, 6in

4. When in the _____ position, the right flap may be used as a step. (POH Airplane and Systems)

A. Partially extended
B. Retracted
C. Fully extended

5. The installed ammeter shows: (POH Electrical System)

A. Load placed on electrical system
B. Load placed on battery
C. Current drawn across battery

6. The PA-28R will stall with the power off and a gross weight of 2650 lbs. under which of the following conditions: (POH Performance Charts)

	Angle of Bank	Flaps 40 degrees	Flaps Retracted
A.	0 degrees	64 MPH	74 MPH
B.	20 degrees	66 MPH	73 MPH
C.	60 degrees	90 MPH	105 MPH

7. The procedure for starting a flooded engine is: (POH Operating Instructions)

A. Throttle full OPEN, mixture RICH, crank engine to remove excess fuel.
B. Throttle full CLOSED, mixture IDLE-CUT-OFF, crank until engine fires, then mixture RICH
C. Throttle full OPEN, master switch ON, fuel pump OFF, mixture IDLE CUT-OFF, crank until engine fires, mixture RICH and retard the throttle.

8. Given the following: Wind 330 at 16 knots, altimeter 29.76, temp 21 C (70 F), can you take off at Eagle's Nest Airport (W13) (runway 06/24 is 2004' x 50', 1,436' elevation) using normal takeoff procedures while complying with PRNFC regulations? (POH Limitations; PRNFC Regulations; Placards)

A. No, the crosswind is out of limits.
B. No, the density altitude is too high and there is insufficient runway length.
C. No, the crosswind is out of limits and the runway is too short.
C. Yes, there is enough runway for the takeoff and the crosswind is within limits.

9. For a standard day, what power setting would you need to maintain 65% power at 6000 ft.? (POH Power Setting Table)

A. 22.0 in Hg, 2400 RPM
B. 21.5 in Hg, 2400 RPM
C. Full Throttle (FT), 2100 RPM

10. Given the following, what is the maximum fuel load you could carry in N1147X and how must you configure the load for safe operations (POH Weight And Balance Data)
1147X info as of 2008: Empty weight-- 1702 lbs Arm-- 84 Moment-- 142957.3

Pilot – 265 lbs
Passengers, 280 lbs and 160 lbs
Baggage – 45 lbs

A. Full fuel, pilot and 280 pound passenger in front and 160 pound passenger in back
B. 33 gallons of fuel and 160 pound passenger in front and 280 pound passenger in back
C. 33 gallons of fuel and 280 pound passenger in back and 160 pound passenger in front
D. 30 gallons of fuel and 280 pound passenger in back and 160 pound passenger in front

11. For optimal operation when performing a take-off in the Cherokee Arrow II it is advisable to: (POH Operating Tips; Takeoff)

A. Apply maximum elevator back pressure as the aircraft accelerates to minimize wear on the nose gear and tire.
B. Trim so that only light pressure is required to lift off at 65 MPH.
C. Raise the landing gear immediately after liftoff to expedite the climb.

12. The tire pressures for the Arrow II are _____ psi for the nose tire and _____ psi for the main tires. (POH Handling And Servicing)

13. When increasing power the pilot should (assuming that the mixture is rich enough for the planned power setting and density altitude): (POH Operating Instructions; Cruising)

A. First increase RPM then increase manifold pressure
B. First increase the throttle then increase the propeller control

14. During cruise flight you encounter severe turbulence. You should immediately slow below _____. (POH Limitations)

15. Useable fuel in each wing tank is 17 gals when filled to the filler neck. How many total useable gallons of fuel do you have when both tanks are filled to the top of each tank? (POH Airplane And Systems; Fuel System)

16. The gear warning horn sounds: (POH Airplane And Systems; Landing Gear)
A. Below approx. 14 in. Manifold Absolute Pressure and the first notch of flaps is extended with gear up
B. Below approx. 14 in. Manifold Absolute Pressure with gear up or the second notch of flaps is extended with gear up
C. Below approx. 14 in. Manifold Absolute Pressure with the gear up. The position of the flaps has no effect on the warning horn.

17. What is the proper action to take if, after starting the engine and turning on the Garmin GNS530 power switch, you notice a loud static background noise in your headset:
A. Shut down and abort the flight, the aircraft has serious electrical problems.
B. Adjust the intercom volume control until the background static is at a comfortable level.
C. Press the COM power/Volume knob to enable squelch control, and then adjust the volume so that you are still able to hear yourself speak into your microphone.

18. (True or False) The PRNFC Arrow (N1147X) has an air conditioner. (POH Supplements)

19. For climbing en route, a speed of ____ MPH is recommended. (POH Operating Instructions)

20. Since the Arrow has an exhaust gas temperature (EGT) gauge, according to the Lycoming Engine Manual, the engine should be leaned to _____ EGT for cruise. (Engine POH)

21. When attempting to start a warm engine you mistakenly use the Starting Cold Engine checklist. After cranking the engine for 30 seconds you catch your error and discontinue the start. How long must you wait before reattempting the engine start using the proper checklist?
_____ (POH Operating Instructions; Starting Engine)

22. Pilots should ensure that their feet do not press on the ____ while trying to operate the toe brakes. (POH Operating Tips)

23. Fill in the blanks for the airspeeds below: (POH Limitations; and Operating Instructions: Climb)

Vs _____ MPH	Stall speed clean (gear & flaps up) at max gross. This speed _____ as angle of bank increases.
Vso _____ MPH	Stall speed dirty (gear & flaps down)
Vx _____ MPH (w/ gear up) Vx _________ MPH (w/ gear down)	Best Angle-of-Climb speed with flaps up.
Vy _____ MPH (w/ gear up) Vy _____ MPH (w/ gear down)	Best Rate-of-Climb speed at sea level with flaps up.
Vfe _____ MPH	Maximum flap extended speed.
Vle _____ MPH	Maximum landing gear extended speed.
Vlo _____ MPH	Maximum landing gear retract speed.
Va _____ MPH	Design maneuvering speed @ 2650 lbs, _____ as aircraft weight decreases.
Vno _____ MPH	Maximum structural cruising speed.
Vne _____ MPH	Never exceed speed.

24. In the engine chart below, representing the performance of the Lycoming IO-360-C1C, the maximum Manifold Absolute Pressure (MAP) for 2100 RPM (the lower RPM setting on the Power Setting Table), rounded to the nearest whole number of inches of mercury is _____. During an en route descent, you will probably choose an RPM of 1900. If so, the maximum MAP, rounded down to the next whole number is _____. When adjusting the throttle, you should ensure you do not exceed these MAP limits without increasing RPM. (Airplane and Engine POH Performance Charts)

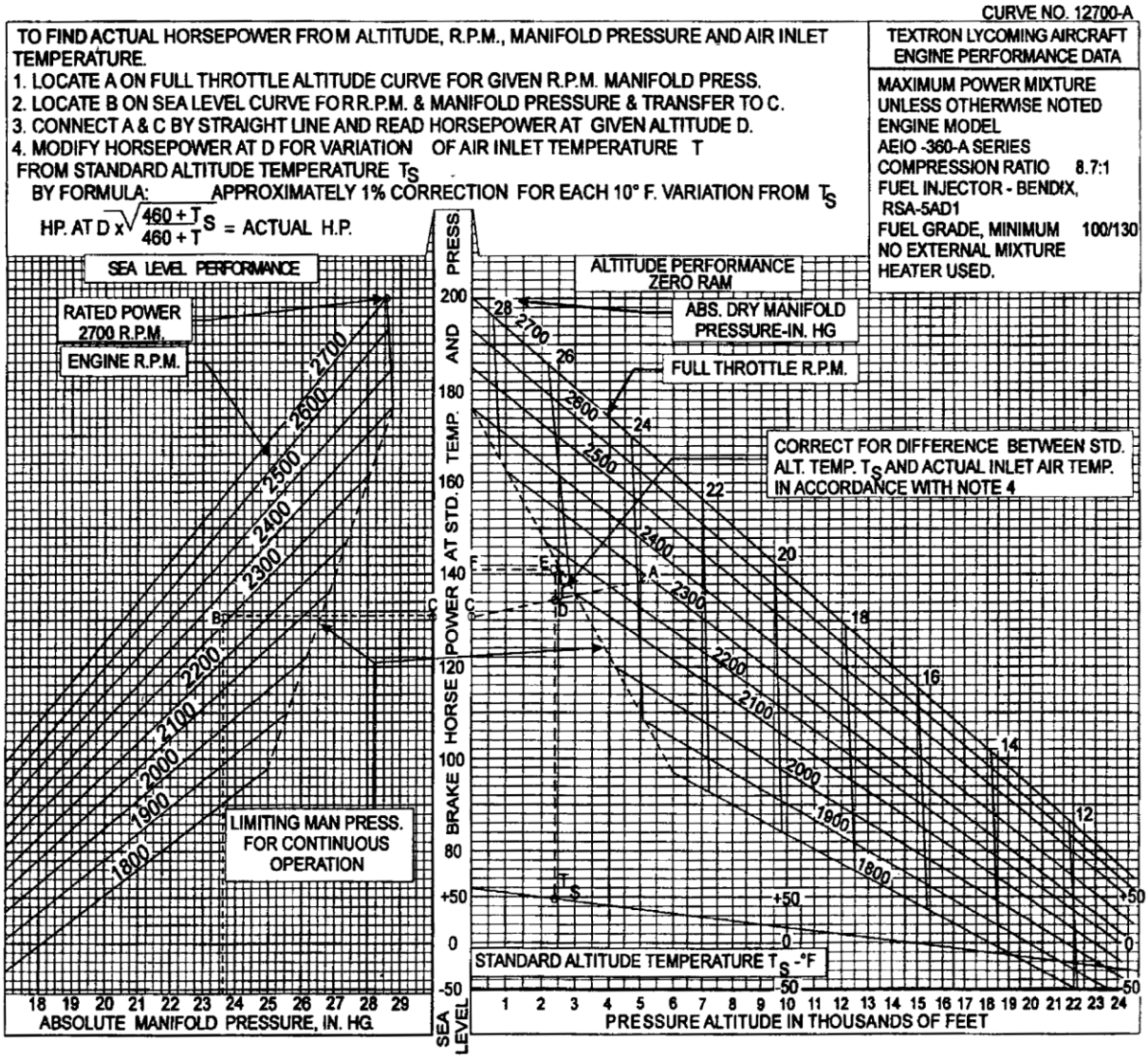

Figure 3-21. Sea Level and Altitude Performance - IO-360-A, -C, -D, -J, -K; AIO-360 Series

CLOSED BOOK PORTION
Please complete the questions below in the presence of a PRNFC CFI:

25. At L/D Max, (_____), the PA-28R will travel approximately _____ per 1000 feet of altitude with the propeller control _____. (POH Emergency Procedures; Power Off Landing)

A. 105 MPH IAS; 1.3 SM; full forward (high rpm)
B. 105 MPH IAS; 1.6 SM; full aft (low rpm)
C. 95 MPH IAS; 1.6 SM; full aft (low rpm)

26. If engine power is lost due to fuel exhaustion, power will not be restored after tanks are switched until _____. (POH Emergency Procedures; Engine Power Loss In Flight)

A. ...empty fuel lines are filled which may require up to ten seconds.
B. ...fuel pressure is reestablished at a minimum of 10 PSI.
C. ...fuel pump is ON.

27. In the case of an emergency malfunction of the electric pitch trim system in a cruise configuration: (POH Optional Equipment A.)

A. The electric pitch trim cannot be overpowered and may only be disengaged by pushing the pitch trim button off.
B. The electric pitch can be overpowered using the manual pitch trim and the malfunction can result in a 200-foot altitude variation.
C. The electric pitch can be overpowered using the yoke and the malfunction can result in a 5 degree pitch change

28. During cruise flight at 8,000 feet MSL, altimeter set to 30.14, OAT 12 degrees C with 21.1 in. Manifold Absolute Pressure and 2400 RPM set you observe an oil pressure reading of 30 PSI. What are the potential consequences: (indicate all which apply) (POH Limitations and Emergency Procedures)

A. Possible engine failure
B. Excessive fuel consumption
C. Propeller overspeed

29. When performing an emergency landing gear extension utilizing the emergency gear lever you are actually: (POH Airplane And Systems; Landing Gear)

A. Removing hydraulic pressure from the landing gear actuators which hold the gear up under pressure; this allows the gear to free-fall
B. Bypassing the hydraulic landing gear up locks allowing the gear to extend into the air stream
C. Depressurizing the electrically driven landing gear system

30. What is the first step required to successfully deal with a propeller overspeed. (POH Emergency Procedures; Propeller Overspeed)

A. Throttle - retard
B. Prop – decrease
C. Reduce airspeed

REMEMBER: use your checklist and follow the manufacturer's operating recommendations.

CAUTION: The performance numbers given in the aircraft performance charts are based on new aircraft. Consider the age of the aircraft you are flying and give yourself plenty of margin.