COLORADO FLIGHT CENTER

AIRCRAFT SYSTEMS REVIEW

Piper PA-44-180T "Turbo Seminole"

All aircraft documents may be used for this review.

Pilot Name:_____ Date: _____

1) What are the V speeds for this aircraft?_____

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_____

2) What is the maximum demonstrated crosswind component? _____
3) Describe the PA-44-180T engines:
   a) How many cylinders?_____
   b) Who is the manufacturer? _____
   c) What is the horsepower rating?_____
   d) Does it have fuel injectors or a carburetor?_____
   e) Is the engine turbo-charged or normally aspirated? _____
   f) Why is the right engine labeled LTO-360?_____
   g) How are the cylinders arranged?_____
   h) How is ignition provided?_____
   i) What are the minimum and maximum oil capacities? _____
4) Describe the propeller system._____

_____

   a) What company manufactured the propellers?_____
   b) What does oil pressure do to the propeller? _____
   c) Which lever manipulates oil pressure to the propeller?_____
   d) Does this aircraft have an unfeathering accumulator?_____
   e) What is the purpose of the spring and nitrogen cylinder in the propeller dome?_____
   f) Define constant speed. _____
   g) What unit adjusts the propeller to maintain a constant RPM and how does it do it?_____
   h) Define full feathering._____
   i) Will the propeller always feather? _____
   j) What are centrifugal stop pins?_____
   k) What is the purpose of the centrifugal stop pins? _____
   l) What is the correct action for a propeller overspeed?_____
5) Describe the electrical system._____

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   a) What are the indications of a failed alternator? _____
   b) Will the engines continue to run with the alternator and battery master switches turned off? _____

6) Describe the vacuum system. _____

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a) Which instruments & equipment are vacuum operated? _____

b) What are the normal vacuum operating limits? _____

c) How many vacuum pumps does the PA-44 have? _____

d) What indications would occur in the event of a vacuum pump failure? _____

7) Describe the stall warning system. _____

_____

8) Describe the fuel system. _____

_____

a) Explain how to cross feed fuel. _____

9) Describe the landing gear system. _____

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a) How is the landing gear actuated? Describe the pump. _____

b) What keeps the gear in the up position? _____

c) What keeps the gear in the down position? _____

d) If hydraulic pressure is suddenly lost in flight, what indication, if any, would you have? _____

e) In what situation will the landing gear horn activate? _____

f) What unit will not allow the gear to be retracted on the ground? _____

g) What is the procedure to extend the gear manually (Emergency Gear Extension)? _____

_____

h) What airspeed is of importance during manual gear extension? _____

i) Are the brake and the landing gear hydraulics interconnected? _____

j) If you lose gear hydraulics, will you still have brakes? _____

k) What indicates that the gear is in transit and the hydraulic pump is activated? _____

10) What type of braking system is used in the Seminole? _____

a) Where is the brake fluid serviced? _____

11) What type of flaps does the Seminole have? _____

a) What are the flap settings on the Seminole? _____

12) What are the maximum taxi, takeoff, and landing weights? _____

13) What is the maximum capacity of the baggage compartment? _____

14) Define V_{SSE}. _____

15) What are the drag factors on light twins? _____

16) Who determines V_{MC} for a particular aircraft? _____

17) Define V_{MC}. _____

18) Why is an aft CG used in determining V_{MC}? _____

19) What are the factors in determining V_{MC}? _____

_____

20) Define critical engine and list the factors used to determine it. _____

_____

21) What causes an aircraft to sideslip with the loss of an engine, and what action is required to correct this? _____

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22) How much climb performance is lost when an engine fails? _____

23) What aircraft equipment checks are required under FAR part 91? _____

_____

24) Define absolute and single-engine service ceiling. _____

_____

25) What documents are required to be on the aircraft? _____

_____

26) Explain lost communications procedures. _____

27) Will the propeller feather below 950 RPM. Why or why not? _____

28) Explain the pitot static system. _____

29) Does the PA-44 have an alternate static source? _____

a) If so, how is it activated and what actions are necessary to acquire the most accurate reading? _____

_____

30) What instruments are pitot static? _____

31) Where is the pitot static port located? _____

32) How do you prevent a heater overheat? _____

33) What is the fuel capacity? How many gallons are unusable? _____

34) What grade fuel is to be used in the PA-44? _____

35) How many fuel pumps are on the aircraft? _____

36) When are the electric fuel pumps to be used? _____

37) What are the various positions on the fuel selector control? _____

38) Explain the procedure for cross feeding fuel when operating the right engine from the left tank. _____

_____

39) If the cylinder head temp and oil temp approach the caution range, what can be done to assist in cooling? _____

_____

40) When an engine is inoperative or feathered, what indication will be observed on the manifold pressure gauge? _____

_____

41) Why is the manifold pressure gauge not necessarily a good indicator in determining an inoperative engine? _____

_____

Reviewed by: _____ Date: _____